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COMMUNICATIONS PLAN  
FOR DIARRHEA DISEASE CONTROL  
IN GHANA

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During The Period:  
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## SUMMARY -- Communications Plan

The MOH/HED and the GSMP will promote oral-rehydration therapy in the public and private sectors respectively. The primary target audience for this promotion in both sectors is mothers, while the secondary audience consists of pharmacists and chemical sellers (GSMP) and health workers -- doctors, nurses, and other health workers (MOH/HED, GSMP).

The central theme of the GSMP private-sector promotion will be "When diarrhea attacks your baby, remember: ORS for appetite, breast-milk and food for strength." This slogan and the logo (mother and child on the map of Ghana) will unify all promotion materials. The public-sector promotion will follow the same emphasis, with the same logo and the same slogan, but put all of its energies into health-worker training and the production of educational materials for health workers to learn from and teach mothers from. If anything, the MOH/HED will emphasize good food as the best way to clear up diarrhea. Yet the entree to good food is good appetite, and the key to appetite for a child with diarrhea is ORS -- so the programs are interdependent.

The MOH/HED will train health workers to teach and support mothers in good diarrhea management -- meaning ORS and ORT -- and to handle more serious cases. The GSMP will train pharmacists and chemical sellers to recommend ORS to mothers and to teach them how to use ORS and to praise them when they do. The GSMP will handle the mass media promotion.

The promotion will use radio, television, print, and popular media (e.g., theater groups) in appropriate complementarity, mindful of the particular strengths of each medium and of their increased impact when mutually reinforcing. All channels are necessary, with the personal channel (health workers, especially) being the key to behavior change.

The behaviors the promotion seeks to achieve after one year are these:

Among mothers,

- to give fluids -- as much as the child will drink -- as soon as the diarrhea starts (goal is 95 percent).
- to continue breastfeeding (75 percent).
- to continue feeding the normal diet, perhaps in smaller portions more frequently, but not a light diet (75 percent).
- to give ORS as the best fluid (THE diarrhea drink) (75 percent).
- to not give enemas to a sick child with diarrhea (0 percent).
- to not give antibiotics or antidiarrheals (10 percent).
- to seek help at the first sign of dehydration or bloody stools (75 percent).

Among pharmacists and chemical sellers,

- to recommend/teach ORS to mothers (75 percent).
- to praise mothers for using ORS/ORT (75 percent).

Among health workers,

- to recommend/teach ORS to mothers (80 percent).
- to recommend the diarrhea diet to mothers -- ORS and liquids, breastmilk, regular food (80 percent).

- to teach mothers to bring their children with diarrhea to a clinic at the first sign of bloody stools or weakness and dryness with sunken eyes (80 percent).
- to practice appropriate diarrhea case management themselves, using ORT for any child who can drink (90 percent).
- to praise mothers for using ORS/ORT (80 percent).

Periodic evaluation will be done to monitor the program's progress.

COMMUNICATION PLAN FOR  
DIARRHEA DISEASE CONTROL IN GHANA

Introduction

Public-health communication represents a strategy for planning and implementing long-term programs to produce specific, sustained behavior change in large target populations.

Broadly viewed, this strategy consists of three stages:

- I. Planning
- II. Intervention
- III. Monitoring

The strategy is not a linear one, however, but a cyclical one. Like the process of human learning itself, public-health communication is an iterative process in which the results of experience feed back into and shape subsequent actions. Planning, of course, leads to interventions; monitoring of these interventions leads to changes in the plan, which in turn alter the intervention. Research into consumer needs and responses shapes every stage of the communication effort, often requiring mid-course adjustments and rethinking. Built into every good plan is a mechanism to change that plan in the light of what actually happens. The focus is on results, not on methods.

The basic individual steps of the public-health communication process are:

- I. Planning  
Health-problem analysis  
Developmental research  
Strategy development

Testing materials and strategies  
Writing an operational plan

- II. Intervention
  - Production
  - Training
  - Distribution
- III. Monitoring and evaluation
  - Baseline measures
  - Regular benchmarks
  - Summative evaluation

This report deals principally with the first stage of the public-health communication process, planning, but covers the intervention and evaluation stages as well.

## I. PLANNING

### Health-problem analysis

#### 1. Epidemiology and policy

The epidemiology of diarrhea disease in Ghana is sketchy, but there is no argument that diarrhea is a significant cause of morbidity and mortality, especially among children under five.

Recent estimates by the Ministry of Health provide this background:

- There are 2.5 million children in Ghana under five;
- On average, these children suffer three bouts of diarrhea per year, or 7.5 million cases per year;
- The fatality rate is 1.1 percent, a very high rate compared to the approximate average of 1 in 200 found in the developing world;
- Approximately 82,500 children under five in Ghana die of diarrhea every year;

- Approximately 9 percent of patients seen in health facilities in Ghana suffer from diarrhea;
- A seasonal pattern of diarrhea prevalence, if any, has not been described. Existing fragmentary data on diarrhea cases seen in scattered clinics are inconclusive, though individual clinics report swings of 500 percent or more in the number of diarrhea cases per month, over the course of a year. Different climate patterns between regions would suggest that a national diarrhea seasonality is unlikely;
- Nor are there data on the agents of diarrhea, or the incidence of acute watery diarrhea as compared to chronic diarrhea.

One-liter ORS packets supplied by UNICEF have been available through the public-health facilities for some time, but may have been hampered by distribution bottlenecks and a low level of public education about ORS's purpose and use. As for sugar-salt solution (SSS), many agencies appear to have taught SSS, but this too has been hampered by the multitude of recipes being suggested, mixing difficulties, and the scarcity of sugar in some places.

Now, the MOH, UNICEF, USAID, WHO, and the private pharmaceutical firm Danafco are coordinating efforts to implement a new diarrhea-control strategy promoting oral-rehydration therapy (ORT) in the home, at the clinic, and in the hospital. Not only ORS, but ORT -- which includes continued breastfeeding, continued feeding of the regular diet, plenty of liquids with ORS being the preferred liquid, and timely referral when necessary.

The situation in Ghana has the advantage of close cooperation between the public and private sectors. Danafco comes to the diarrhea program with a proven track record in contraceptive social marketing through the Ghana Social Marketing Program (GSMP). Danafco, which markets a wide range of pharmaceuticals, maintains a nationwide distribution network among pharmacists (700) and chemical sellers (3000). In five of Ghana's ten regions, Danafco maintains regional depots staffed by their own pharmacists who do detailing work among regional physicians. In the other five regions, Danafco works through independent agents but does not do detailing to physicians.

Danafco's distribution and resupply systems are established and functioning satisfactorily, nationwide. Based on the patterns that have worked well in the GSMP so far, Danafco plans to incorporate ORS into the GSMP. The GSMP has carried out training for pharmacists and chemical sellers, and backed this up with media promotion and reliable product distribution.

MOH diarrhea policy is in the final stages of review, and its principal features are now known. The MOH will promote home-available fluids and ORS as fluid therapy for diarrhea, along with equal emphasis on feeding and continued breastfeeding during diarrhea. The new ORS packet, being produced in Ghana now by Danafco, calls for 600 ml of water, to conform with the ubiquitous 600 ml beer bottles and the 300 ml soft-drink bottles. These packets are being produced on AID-donated equipment with UNICEF-donated raw materials, under the stipulation that Danafco supply the

MOH with packets and that revenues generated by private-sector sales will be used for ORS promotion. The exact arrangement is this: UNICEF donates the raw materials to the MOH. The MOH then barterers these raw materials, worth \$45,000, with Danafco, so that Danafco gets the raw materials to produce ORS but is obliged to return to the MOH \$45,000 worth of finished product. In round numbers, this means that Danafco can produce 3.3 million packets and gives about \$450,000 to the MOH. From the sales of the remaining 2.8 million packets, Danafco must invest a certain amount each year in promotion to amortize the AID loan. UNICEF is committed to supplying whatever ORS the MOH needs, and would buy extra packets from Danafco as necessary.

Danafco will supply packets to the MOH in a slightly different package from the one Danafco will sell commercially. But the MOH will also sell its packets, through its facilities, of which there are more than 360 nationwide. While the UNICEF packets had previously been free, other medicines have long been sold at MOH facilities.

## 2. Behavior analysis

What do Ghanaian mothers now do when their children have diarrhea? What do we want them to do?

The just-available study, "Attitudes to Diarrhea in Ghana" by Katie Abu, is based on interviews with two hundred mothers at twelve sites throughout the country.

Diarrhea figured very prominently in mothers' reports of their children's illnesses that were of particular concern. Only fever

with 75 percent surpassed the 71 percent of all mothers who cited diarrhea as a cause for serious concern. Following were measles (47 percent) and cough (41 percent). Diarrhea and dehydration, of course, often result from measles. Of the two hundred mothers interviewed, eight had lost a child to diarrhea.

The summary of findings from Abu's report deserve reporting in full:

-- Diarrhea does rate as a serious disease in the minds of parents. Among some ethnic groups, certain signs of dehydration are seen as signs of special kinds of diarrhea, e.g., "fontanel diarrhea" and "sunken-eyes diarrhea".

-- People do observe relationships between raised temperature, malaria, and diarrhea, but the specific nature of these links is a subject of much debate.

-- Almost without exception, children with diarrhea are given as much water to drink as they want.

-- Home available fluids are commonly given to children with diarrhea, but in most cases they are not recognized as having a rehydrating function. They are viewed as "a light diet" and may contain neither salt nor sugar. They are given instead of rather than in addition to normal food, with the result that children with diarrhea tend to get a diet of lower nutritional value than they usually get.

-- Oily foods and foods considered heavy are not given to children who have diarrhea.

-- The main causes of diarrhea are believed to be old, insufficiently heated food and food to which the person is unsuited

(almost like an allergy). There is little reference to inadequate hygiene, such as lack of hand-washing after toilet or before eating.

-- "Dirt in the stomach" causing a "sore in the stomach" are the dominant themes in the understanding of the action of diarrhea on the body. The "stomach" includes most of the intestines down to the rectum, as well as the stomach itself. (This is why enemas are thought appropriate for diarrhea.)

-- The seriousness of a diarrhea episode is judged by the frequency and consistency of the stool combined with the duration of the episode without improvement, and also by the extent to which it makes the person weak. "Weakness" is a major theme when diarrhea cases are being discussed and assessed.

-- Treatment falls into three basic types of which use as the first line of treatment is as follows: local medicine (46 percent), hospital or clinic (35 percent) and self-medication (19 percent). When the first line of treatment fails to stop the diarrhea, people usually change to an altogether different type, rather than, for instance, trying a different herbal medicine or going back to the hospital. Hospital is the commonest second line of treatment.

-- Enema was used in the treatment of diarrhea in about a third of cases, and those who practice enema believe strongly in its efficacy. Purgatives are scarcely used at all in the treatment of diarrhea.

-- Decision-making on diarrhea treatment is done mainly by the child's primary caretaker, who is usually the mother. The children's fathers are also involved if they are around, if they have specialist herbal knowledge or if it is more convenient for

them than the mother to obtain the plants in the bush. Others such as the child's grandmother are likely to be involved if they are around. Their suggestions are generally welcomed. Decision-making on diarrhea treatment was not observed to be an area of conflict.

-- Sunken eyes followed by flabby skin were the most widely recognized signs of dehydration and were judged to be serious conditions, quite likely to lead to death. Only those exposed to ORS or ORT education understood these signs as relating to loss of water from the body.

Based on the findings by Katie Abu and from the other information about the diarrhea situation in Ghana, the behaviors we wish to develop among mothers for dealing with diarrhea are these:

- i. To give fluids--as much as the child will drink--as soon as the diarrhea starts.
- ii. To continue breastfeeding.
- iii. To continue feeding the normal diet, perhaps in smaller portions with greater frequency, but not a "light diet" of, e.g., only corn porridge.
- iv. To give ORS as the best fluid (THE diarrhea drink), as much as the child will drink.
- v. To not give enemas to a child sick with diarrhea.
- vi. To not give antibiotics or antidiarrheals to a child sick with diarrhea.
- vii. To seek help in a clinic at the first sign of dehydration or bloody stools.

In the maternal-response model (figure 1), developed for guiding program planners generically, we note that, according to Abu's research, Ghanaian mothers do observe diarrhea in their children, and do recognize its importance, and do act. The GSMP/MOH goal is to ensure that mother's actions are the correct ones, and to provide mothers with the information and supplies to do assume that they act correctly.

We also wish to affect the behavior of secondary, yet crucial, target groups--pharmacists, chemical sellers, doctors, nurses, and other health workers. These people will be pivotal in establishing good diarrhea case-management in Ghana and in eliminating harmful practices such as the overuse of antibiotics, and any use at all of antidiarrheals and enemas during diarrhea. The behaviors we wish to develop among these groups are:

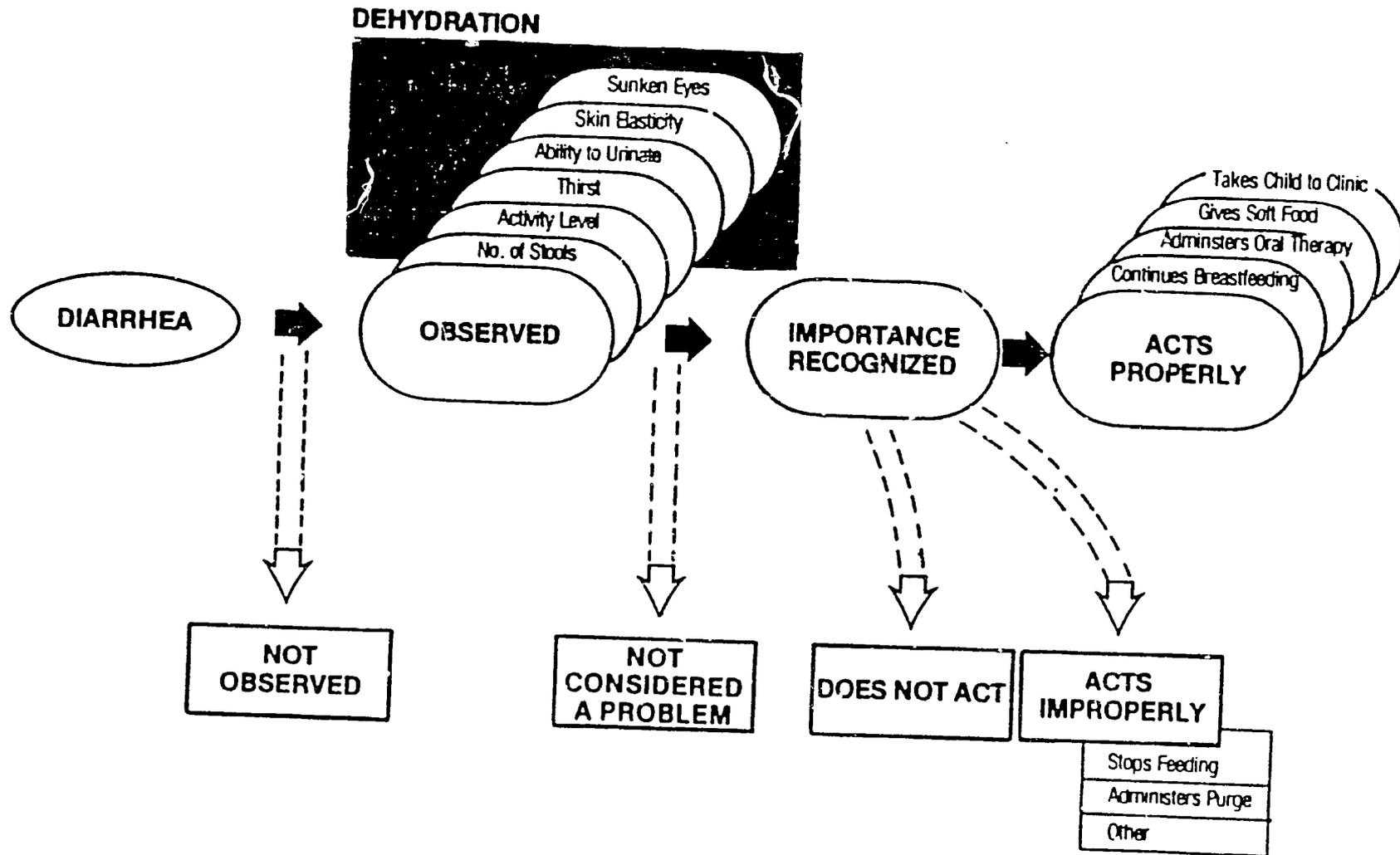
- i. To recommend ORS as THE diarrhea drink, and to teach mothers how to use ORS.
- ii. To recommend THE diarrhea diet -- ORS and plenty of liquids, regular food (smaller portions, greater frequency), and breastmilk.
- iii. To know when to urge a mother to seek help in a clinic -- at any sign of dehydration or bloody stools.
- iv. In the case of health workers, to assess hydration status and treat the child with diarrhea accordingly.
- v. To praise mothers who use ORT.

#### Developmental Research

Development research ensures that public-health communication programs are based on an understanding of target audiences.

FIGURE ONE

### MATERNAL RESPONSE MODEL



Research methods include sample surveys, intercept surveys, focus-group discussions, in-depth interviews, and behavior observations. The results of developmental research aid program planners in establishing measurable objectives and realistic strategies for the communication process. It roots the social-marketing effort where it should be rooted -- in the consumer.

The Abu Report on mothers represents very useful research on the primary part of our target audience. But research is still needed on the secondary audience -- pharmacists, chemical sellers, doctors, nurses, and other health workers. What are their current levels of knowledge regarding diarrhea case management? What are their actual practices? What are current health-education practices?

A particularly crucial research topic relates to the price of the new ORS 600 ml packet. In her report, Abu found that, in some areas of Ghana, mothers routinely treated diarrhea in their children with medications that they bought from pharmacists and chemical sellers. "Respondents were spending from 20 to 1200 cedis on getting a diarrhea episode cleared. Mean expenditure was 520 cedis." While the price for ORS is not yet fixed, a figure around 20-30 cedis is being discussed.

The monetary cost of a commodity is usually influenced by:

- The intended portion of program costs that income from packet sales must cover;
- consumer's ability to pay;
- the profit margins required to maintain the interest of distributors;

- the price of similar consumer products;
- government regulations about profit margins and price controls.

The price of ORS in Ghana deserves study now. While a low price is beneficial on the face of it, a low price may have some risks. For example, pharmacists and chemical sellers are currently selling an average of 520 cedis worth of medications per diarrhea episode in some parts of Ghana -- will they be willing to forego that level of sales to promote an ORS product that might profit them considerably less? At what profit margin and at what price will they promote ORS?

From the consumers' point of view, does a lower price mean less value for money? Will the consumer believe in 20-cedi ORS versus 500-cedi Kaolin? Will a consumer equate cost with effectiveness? Would a parent feel better paying more for ORS -- as long as the cost is manageable? Would a low price work against ORS?

While arguing neither for a high price nor for a low price, our point is that this is an issue that deserves research now. A brief study could be carried out by Danafco or MOH staff in the Greater Accra area, with a small sample of pharmacists and chemical sellers (e.g., 25 each) and a small sample of parents (e.g., 50). A good way to get parents for whom diarrhea in their children is salient at the moment is to use intercept interviews at clinics with parents who have brought a child ill with diarrhea. From these interviews, the GSMP should have a better idea of what the issues of price really are, among those parties who will be involved in the ORS transaction.

If it becomes advisable to introduce ORS at a higher price to give it value in the minds of buyers and sellers, it may become possible later on, when ORS is established on its own merits as superior to costlier drugs, to lower the price. But it would be significantly more difficult, once ORS is introduced at a low price, to raise the price.

Another area that should be explored before long is the media profile in Ghana. Which are the best media to reach mothers (pharmacists, chemical sellers, doctors, nurses, health workers), and at what times of the day? A small Peace Corps study from 1986, in some parts of Ghana, found that half the mothers never listen to radio and only one out of four listens every day. Seven out of ten never read a newspaper. On the other hand, television is likely to be a channel often used by doctors. Does the Ghana Broadcasting Service have any data on its radio and TV audiences?

### Strategy Development

There are a series of elements in the communication strategy, some of which we have touched on already and some of which deserve attention here.

#### 1. Audience segmentation.

According to the Abu Report, mothers are the primary caretakers of their children and also the prime decision-maker about how to handle their children's diarrhea. Clearly mothers are the primary audience.

The secondary audience is also clear -- the people to whom most mothers turn for help in treating their children's diarrhea: pharmacists, chemical sellers, doctors, nurses, and other health workers.

Although we speak of primary and secondary audiences, it is to be emphasized that mothers will be unable to adopt and maintain ORT without the cooperation and encouragement of the secondary audience.

## 2. Product strategy

We propose to promote ORS as "THE diarrhea drink" for "THE diarrhea diet". The program slogan is proposed as "When diarrhea attacks your child, remember: ORS for appetite, breastmilk and food for strength".

ORS will be promoted as the drink that is the key to keeping your child strong during diarrhea, and to restore appetite quickly so that the child can eat his normal diet. ORS is the first step in THE diarrhea diet.

The diarrhea diet is ORT -- ORS plus breastmilk plus the child's normal food.

We want to promote ORS (THE diarrhea drink) and ORT (THE diarrhea diet) in a complementary way, and will use the public and private promotion campaigns in a similar complementary way, with the GSMP giving emphasis to ORS through its media campaign and its network of pharmacists and chemical sellers and with the MOH giving emphasis to ORT through its health-worker training.

It is clear from the Abu Report that her respondents associate weakness with diarrhea and recognize this weakness to be caused by loss of so much water. "Whenever people hear 'weakness' associated with diarrhea, it will make sense to them and make them feel that the promoters of the product [ORS] understand the problems of diarrhea in the way that they do." "Weakness" may be a more salient aspect of diarrhea than is "dehydration", for the Ghanaian mother. The product (both ORS and ORT) should be touted as avoiding or, if necessary, reversing weakness caused by diarrhea. Indeed, "weakness" may keep the mother alert to the perils of malnutrition as well as dehydration.

While we propose to use "ORS" because this is the product name, we would avoid the use of "ORT" and stick to the phrase "THE diarrhea diet", which is simply ORS, breastmilk, and regular food.

It is within this product strategy that the issue of price, discussed earlier, must be settled.

### 3. Behavior strategy

In selecting the behavior changes that we wish to bring about, we use these criteria:

- the health impact of the behavior;
- perceptible positive consequences of the behavior;
- cost of engaging in the behavior;
- compatibility with existing practices;
- approximations available;
- complexity of the behavior;
- frequency of the behavior;

- persistence;
- observability.

We believe that the promotion of ORS and ORT fits well within these criteria.

The health impact of ORS and good foods is now well documented among diarrhea patients of all ages, for avoiding the dehydration and malnutrition that diarrhea can bring. "ORS is best" is not an empty slogan: for ANY diarrhea patient who can drink, ORS is superior to IV or to any other therapy, and ORS is well accepted in some of the world's most modern and sophisticated health facilities. In a hospital or a hillside hut, ORS is best.

The consequences of ORS/ORT are very perceptible -- but the mother must be looking for them. If she is led to expect that the diarrhea will be stopped by ORS, she will be disappointed. If she is told to look for more pep and alertness and appetite in her sick child, she will perceive positive consequences.

The cost of ORS and ORT involves both outlays of cash and of time. The cash cost may be the lesser issue. There can be no denying the labor-intensive nature of spoonfeeding 600 ml (or 1200 ml, or 1800 ml) of ORS to a baby who is initially cranky and lacking in appetite. This can be a stumbling block for some mothers, to which the project should be alert. Make it clear that others can carry some of this load, with the mother returning to nurse her child.

The giving of liquids to children with diarrhea is very common in Ghana, according to the Abu Report, so we propose to promote ORS as the best liquid to give during diarrhea -- THE diarrhea drink. It does not seem necessary to make the case for giving fluids, rather to make the case for giving this fluid.

The usual approximation to ORS is sugar-salt solution. SSS has been tried in Ghana and, as elsewhere, found to be problematic. Abu reports that, although there is currently more awareness of SSS than of ORS, nobody had the formula right. Furthermore, mistakes tended to be in the direction of excessive salt (although either too much salt or too much sugar can be harmful to a baby with diarrhea). Ghanaians tend to look on sugar as a luxury that is not good for you anyway, and is associated with rotten teeth, loose stools, impotency, and difficult childbirth! The project should not emphasize the sugar content of ORS.

With the new packets designed to be mixed with 600 ml of water and the universal availability of 600 ml beer bottles and 300 ml soft-drink bottles, ORS is not complex. Nor is boiled water necessary.

Given the high diarrhea morbidity rates among Ghanaian children and the many families with more than one child under five, a mother may be called on to administer ORS fairly frequently and even to more than one child at a time. But as noted above, this burden can be shared by others.

ORS is called for as long as the diarrhea lasts. But it is possible that the course of the diarrhea may be shortened if feeding

can be resumed after a few hours of ORS, because feeding will firm up the stools and heal the gut faster.

ORS is very observable, especially because of the labor-intensive nature of ORS. In our research studies, it will be rare to find an active case of diarrhea in a house and even rarer still to find ORS being given. However, in clinics or at an ORT corner, the therapy can be readily observed.

#### 4. Distribution strategy

The GSMP has a working distribution system that will be used for ORS. The MOH can coordinate its distribution with the GSMP, or can use its own channels. Experiences with the distribution of the UNICEF 1-liter packets may indicate areas in which public-sector ORS delivery can be improved.

#### 5. Training strategy

The ideal training on ORS is done at a facility where children are actually being rehydrated and eating with gusto following ORT, but such a facility is not always at hand nor, thankfully, are dehydrated children always at hand. Films, videos, or slides may be able to communicate some of the transformation that ORS brings about. For non-clinical workers, such as the pharmacists and the chemical sellers, this clinical experience is more likely to make ORS advocates out of them, but it is not as necessary for them as it will be for health workers.

Certainly every person trained should actually mix and taste ORS.

Training ties in with distribution because it can be the essential step into the distribution network, where trainees receive supplies of ORS along with signs for their shop, handouts for mothers, point-of-sale materials, and any premiums the program might offer as incentives (t-shirts always seem coveted).

Trainees should not be lectured at, but rather be brought into a process of participation and discussion. Since trainees will all have some acquaintance with other diarrhea therapies, presentation of the "ORS is best" idea needs to be sensitive and gradual, without compromising on the superiority of ORS. The scientific basis for ORS and the accolades it has received (e.g., the prestigious British medical journal Lancet called ORS "potentially the most significant medical breakthrough of this century"); the use of ORS in other countries, including developed countries; the terrible rate of diarrhea mortality--all these points should be made, before mention is made of the harmful effects of antibiotics and antidiarrheals.

There should also be discussion of food for diarrhea, situating ORS as the diarrhea drink within the diarrhea diet. And everyone trained should understand well the slogan ("ORS for appetite, breastmilk and food for strength") to be able to explain ORS to mothers.

#### 6. Messages and creative strategy

Our objective is that all Ghanaian children who suffer from diarrhea are properly treated with ORS and ORT by their mothers or other caretakers, and that they be referred to a health facility if they have blood in the stool or any sign of dehydration. The heart

of the message is to promote, to mothers, ORS as the diarrhea drink and ORT as the diarrhea diet.

This will be the kernel of the promotion, not only to mothers but to the secondary audience as well in their training.

The appeal will be motivational, straightforward without being hard-sell, and based on scientific findings about ORS/ORT. We will motivate mothers to keep their children strong during diarrhea or to restore strength to their children who have become weakened by diarrhea, asserting that ORS is the drink for diarrhea that restores appetite and allows food to restore strength, and pointing out the scientific "specialness" of ORS. Mothers will be given the image of an alert, strong baby, eating his usual food eagerly and continuing to breastfeed--this is what ORS can do for the child with diarrhea. As far as stopping diarrhea, the message should be, "After the child has resumed eating, the diarrhea will lessen and then stop."

ORS will be presented as a drink rather than as a medicine, because mothers in Ghana already give plenty to drink to their children during diarrhea.

The straightforward tone will be responding to mothers' association of weakness and diarrhea: "ORS for appetite, breastmilk and food for strength". We will make this the tag line of every promotional piece.

A little brainstorming about possible messages follows:

- For one month before launch, to create interest and curiosity: "ORS -- a new drink is coming to protect your

baby during diarrhea -- watch for it! Ask for it! ORS, ORS!" "ORS? What is it, you say. It's new; it's coming; it's going to keep your baby strong during diarrhea. Watch for it! Ask for it! ORS, ORS!"

From launch for four months, to promote trials, interest, and sales: "ORS is here! ORS -- the drink for diarrhea. ORS for appetite, breastmilk and food for strength."

"Don't let diarrhea weaken your baby -- ORS is best."

"When diarrhea tries to weaken your baby, strengthen your baby with THE diet for diarrhea -- ORS, breastmilk, and regular food."

"When your baby has diarrhea, the diarrhea tries to make him weak. ORS, the drink for diarrhea, restores appetite so your baby can eat and stay strong."

"Keep breastfeeding and giving your baby regular food a little at a time during diarrhea -- your baby needs the strength breastmilk and food can give. If your baby has lost appetite, ORS will help your baby to eat well and stay strong. Remember: when diarrhea attacks your baby, ORS for appetite, breastmilk and food for strength."

"When you baby has diarrhea, ORS will give appetite, and breastmilk and food will give strength. Mothers can do this for almost all diarrhea cases. But if your baby has bloody stools or has become weak and dry with sunken eyes,

take him straight away to the clinic. Keep giving ORS on the way."

"When diarrhea attacks your baby, don't wait! Right away: ORS for appetite, breastmilk and food for strength. To wait is dangerous."

"Enemas weaken your child during diarrhea, and make the diarrhea worse. Breastmilk and good food make the diarrhea better. Enemas weaken your child. Remember: when diarrhea attacks you child ORS for appetite, breastmilk and food for strength."

(Humorous) Mother A: "Oh, no, Fatou! Are you giving your baby beer?"

Mother B: "Of course not, Awa. But Dawda has diarrhea and I mix all the contents of the ORS packet with a beer bottle full of water. You know, this ORS is made now in Ghana, to mix just right with the size of beer bottles we all have. Of course, Awa, if you don't drink beer, two mineral bottles will be the same amount of water. One beer bottle of clean water or two mineral bottles of clean water -- that's what you need to make ORS."

Mother A: "Of course, Fatou. I know about ORS, the drink for diarrhea."

Mother B: "When diarrhea attacks your baby, remember: ORS for appetite, breastmilk and food for strength."

"When diarrhea attacks your baby, don't buy anything but ORS. Medicine is expensive, and hardly ever needed for diarrhea. Diarrhea only needs medicine in those rare cases when there are bloody stools--take your child to the clinic right away if he has bloody stools. But otherwise, keep your child strong: ORS for appetite, breastmilk and food for strength."

"Why wait while diarrhea weakens you child? Give lots of fluids right away, and remember the best fluid is ORS, THE drink for diarrhea. ORS for appetite, breastmilk and food for strength."

"We all know that when a baby has diarrhea, he loses appetite. Some mothers give the baby only liquids and a light diet, like corn porridge, until the diarrhea stops. But this weakens the child. The baby needs liquids, lots of them, but not a light diet. The baby needs his regular breastmilk and food. To restore his appetite, give ORS right away. Remember: when diarrhea attacks your baby, ORS for appetite, breastmilk and food for strength."

"Adults get diarrhea, too -- not just children. So keep some ORS at home to protect all the family from the weakness diarrhea can bring. Remember: when diarrhea attacks anyone in the family, ORS for appetite, food (and for babies breastmilk) for strength."

"When your child is sick with diarrhea, you are willing to spend all you have to make him strong again. What your

child needs is ORS -- and ORS costs a lot less than other medicines. So, ask your pharmacist for ORS and save your money...for your healthy child's schooling. Remember: when diarrhea attacks your baby, ORS for appetite, breastmilk and food for strength."

"You know, many things cause diarrhea. Some say dirt, some say sores in the stomach, some say germs. Who knows? What I know is how to get rid of diarrhea. For me and, especially for my children too. You know, ORS for appetite, food (and, for babies, breastmilk) for strength."

#### 7. Source of information

For radio and television spots we propose to use the same spokesperson or a small core group of people whose voices and faces will become known and identified right away with ORT. In Egypt, they used a very motherly older woman; in Honduras, a doctor; in Ecuador, a cartoon character. Who would be good in Ghana? A nurse? A mother? A grandmother? A doctor? We might think of more than one character, to allow for some dialogue in the spots. They would recite the tag line, and might say, "Remember what Dr. Wisdom says, when diarrhea attacks etc."

These characters should appear on billboards and posters as well.

After the first months, it would then be very credible to do some actualities -- that is, radio and TV interviews with satisfied mothers, doctors, and so forth.

### Message integration

Messages will center on ORS and food -- our intent is to fight directly the dehydration and malnutrition that are the dual stings of diarrhea. It may be necessary to specify what foods we mean, to be sure that sick babies are given calorie-rich food and not the nutritionally almost worthless paps that they now receive. The tag line, or slogan, will be the signature of every media message. That and the logo on visual messages will tie all the messages together.

In training medical professionals, the approach will be less simple, of course, but will be an amplification of this simple central theme. We will explain how ORS works to restore alertness and appetite, how food works to firm up stools, and how other medicines are usually not needed and so often harmful. We will use the media to reinforce the training, to give trainees the feeling that they are indeed a part of a national CDD movement with a scientific basis and a human face, in which everyone can play a role for healthier, stronger children. The linkage revealed by Abu's report, between diarrhea and weakness, allows us nicely to deal with both dehydration and malnutrition, without at the popular level getting into unnecessary complexities.

### Media channel strategy

This was dealt with earlier. Let us talk here about the division of labor between the GSMP and the MOH as to channels, note the complementary roles of media, and point out why it is essential to use media in an integrated way.

The MOH should concentrate on training for MOH health staff and for private doctors and nurses. Any media materials they produce should be for use in this training and for the trainees in their dealings with mothers. This represents a very large task for the MOH, one that if carried out well will ensure the establishment of ORT as the therapy of choice among Ghanaian professionals. We propose no mass-media role for the MOH.

Mass-media and the training of pharmacists and chemical sellers are the province of the GSMP. They have the experience here--let's build on that. By not having the MOH on the air, we avoid the awkwardness of the MOH either talking directly about ORS and thereby seeming to endorse one company's product or talking around the name in an unsatisfactory and possibly confusing way.

So the division of labor is: MOH -- health-worker training; GSMP -- mass media and training for pharmacists and chemical sellers.

In general, people do not act on what they hear on radio or see on television. Radio and television can make people aware of innovations, but only a few intrepid people try out those new things. Most people ask someone they trust about the innovation, and only adopt the new behavior if that trusted person recommends it. After they adopt the new behavior, the media serves to reinforce their actions by continually giving reasons to adopt the innovation and giving the innovation the prestige that the media can bestow.

So most people are conservative, hesitant to try new things, and eager for praise and encouragement when they do so. All this is

doubly true if we are talking about a new therapy for their sick children. In the introduction of ORS, many people will hear and see the media messages, but not until their children fall ill with diarrhea will they consider using ORS -- and then they will hesitate, and look for that crucial go-ahead from a person they trust. That trusted person will be a key who can say to them, "Yes, ORS is all they say it is. ORS is best. You are doing the right thing." At this stage, the presence of the trained secondary audience (pharmacists, chemical sellers, doctors, nurses, and health workers) will be crucial for the untrained primary target audience (mothers) to act.

Gradually as ORS takes hold, mothers will assure other mothers and we can gear our media messages to a "tell a friend" strategy. At first, however, we will stick to the "You heard about ORS on the radio -- ask your pharmacist or your doctor -- they will tell you that ORS is best" strategy. This is how the media support each other, and why broadcast channels are not enough by themselves. People do new things on the advice of people they trust.

## II. INTERVENTION

### Production

The communication channels proposed are:

- radio
- television
- newspaper
- posters
- flyers, stickers

- billboards (possibly)
- theater groups (possibly)
- direct training for the secondary audience

Issues in production relate to quality. While the MOH will determine the actual messages to be conveyed, the specifics of production are best handled by an experienced media-production group. The MOH has such a group in the Health Education Department; they should be used to the extent of their ability and time. If necessary, some production can be contracted out with a private agency that can do the job.

As for the GSMP, they now have an experienced advertising person on staff, and will do as much of the graphics materials as possible in-house. Broadcast production, however, even for the GSMP, may need to be contracted out.

Specific comments about each channel:

1. Radio

There should be at least one radio spot for each of the seven behaviors we wish to establish in the primary audience, the mothers. These were listed on page 8.

The first four and the seventh might be emphasized initially, with negative comments about enemas, antibiotics, and antidiarrheals deferred until ORS and ORT have become positive concepts in the minds of mothers. Research might determine what that point is.

## 2. Television

Television can be the principal channel to the secondary target audience, especially doctors. The messages can be addressed directly to this audience, or alternatively in an indirect way by addressing a message to mothers and showing a doctor/nurse giving ORS and instructing a mother in its use or praising a mother for having used ORT. A tag line like "Ask your doctor about ORS -- he knows ORS is best for your baby" -- this will alert professionals to rising expectations among mothers and to their own need to inform themselves about ORS/ORT.

Television can also visually teach the mixing of ORS.

## 3. Newspapers

Also included here are publications of the Ghanaian Medical Society, the Ghanaian Nurses Society, the Ghanaian Pediatric Society, the Pharmacy Board, and other relevant organizations. Newspapers can reproduce the mixing instructions and perhaps include some scientific basis as to why ORS is best, but these ads must avoid the temptation of including too much verbiage and clutter. A clean ad with plenty of white space gives a professional impression. Use the logo and the slogan to make the link in readers' minds with messages they have received through other channels.

## 4. Posters

The treatment-plan posters for health facilities are useful in aiding the health workers in assessing and treating diarrhea. In addition, the complexity of the posters, which most patients will fail to decipher, lends an air of professionalism and status to the

health worker that has been useful in the achievement of wide distribution and display of this poster in many places. It also shows the scientific side of ORS.

Other posters might be done up in the same format as the blue poster done by the HED promoting liquids during diarrhea -- using the logo and the slogan -- but each one promoting one of the seven desired behaviors among the primary audience. Each could be a different color, and be displayed in patients' waiting areas.

#### 5. Flyers, stickers

This item may be handled by the inserts in the ORS packets. It might be useful after six months to do a study of mothers' knowledge and practice of ORS/ORT, to determine if the insert should be modified in any way, particularly in terms of correct mixing knowledge. The flyer/insert idea is to ensure that the mother has at hand the information on how to use ORS as soon as her child falls ill with diarrhea.

#### 6. Billboards

For name recognition and prestige, striking, not-too-busy billboards in principal cities may be worth the investment, but would not be a priority.

#### 7. Folk-theater groups

In some countries, theater groups perform in neighborhoods and are a recognized cultural phenomenon that gets considerable attention. A play could be done about ORS/ORT, about the difficulty of deciding to adopt this new therapy. While coverage is limited

and sporadic, theater groups may be a way of showing that ORS/ORT fit well with Ghanaian culture.

All these channels should in every instance contain the logo (if visual) and the slogan. This will link and reinforce the messages, and give a central focus to the audience.

#### Distribution

Distribution relates to both the promotional materials and to the product itself. Distribution also relates to relations between the primary and secondary audiences. E.g., when mothers are told by the radio to ask their health workers about ORS/ORT, will the health worker have been trained? Will the ORS packet be in the clinics and in the stores when the promotion says they are?

The chief tasks here are coordination and management. The attached Operational Plan seeks to outline the sequence of events.

#### Testing materials

Simply put, all media materials should be presented among a sample of their target audience before being disseminated widely. An error in a message is hard to correct, and does not create a credible impression.

#### Training

A major aspect of the intervention is training -- training for purposes of distributing educational materials and training for purposes of providing services and products. The latter is especially crucial. Experience supplies some principles for effective training strategies in programs such as public-health

communication, where both knowledge and performance are the criteria of success.

Briefly, educators have demonstrated that people learn new behaviors best when:

- they are learning something they are convinced is useful;
- they practice what they are learning to do -- the more practice (role play, actual clinical experience), the better;
- they receive feedback on their efforts and are rewarded when they do well;
- rewards are from several sources and are as immediate as possible.

Amid all the constraints on training, whether in the public sector or in the private sector, program managers should not expect to significantly change existing service-provider patterns but should provide incentives for higher performance (praise, profit, premiums, promotion, etc.).

### III. MONITORING AND EVALUATION

Part of good communication is listening, to help make our speaking better -- to make ourselves understood. Monitoring/evaluation is meant to make the program better.

It is recommended that there be three evaluations of the primary audience in the first year:

- In July, among a sample 100 mothers, to assess their ability to mix ORS on the basis of the insert;

- In October, among a sample of 100 mothers, to assess recognition of ORS/ORT -- e.g., the logo and the slogan.
- In February 1989, among a sample of 400 mothers, to assess the knowledge, attitudes, and practice of mothers in terms of the seven behavioral indicators we have set out to establish among them.

Studies should also be done among small samples of the secondary audience. On the two indicators for pharmacists and chemical sellers -- 50 interviews each. On the five indicators for health workers, 50 interviews of doctors and 50 interviews with nurses and other health workers. It is also useful to do intercept interviews at hospitals/clinics, asking mothers as they emerge from outpatients' services with a child 1) did she bring the child for diarrhea? 2) if so, what did the health worker say/do for her child -- using the five indicators for health workers.

These evaluation efforts need not, should not, be burdensome. Except for the February 1989 KAP study, they can be done with simple forms and hand-tallied. The idea is to turn the data around quickly to improve the project or keep the project on course. If the study becomes a burden, it is not being carried out right -- get someone who can do it right. The KAP study may need small in-country computer analysis, but it too should be lean and useful, in the service of achieving the behavioral results, never as an end in itself.

The focus of the program is on behavioral results.



MOH/HED PROMOTION PLAN

Today	GSMP Promotion Plan												1-Year Desired Results
Health Workers	1988						1989						Health Workers' behavior
	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	
1. Rec/teach ORS - some	C												1. Rec/teach ORS - 80%
2. Recommend diet - none	O												2. Recommend diet - 80%
3. Teach referral - few	N												3. Teach referral - 80%
4. Good case mgt.- no data	F												4. Good case mgt. - 90%
5. Praise mothers-no data	E												5. Praise mothers - 80%
	R												
	E												
	N												
	C												
	E												

11

ATTACHMENT I

ATTITUDES TO DIARRHOEA IN GHANA

by.

Katie Abu

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# Best Available Document

## I INTRODUCTION.

### (i) The scope and purpose of the study.

The study aimed to find out about attitudes, beliefs, and practices regarding diarrhoea in Ghana. In particular we wanted to find out whether existing practices and beliefs regarding diarrhoea were likely to pose any problems for the promotion of ORS, and if so how they could be overcome. Already within the medical establishment there were some ideas as to the nature of some of these beliefs and practices, such as the 'sore in the stomach' as the immediate cause of diarrhoea, and giving of enemas and purgatives as cures. There was great uncertainty however, as to how widespread these practices were and how ORS would fit into present treatment and belief patterns.

The recommendations of the study, based on the findings, give guidelines on ORS promotional message content. Suggestions are also made, based on observations of how formal and informal communications operate in rural and urban areas for means of communicating the ORS message, and distributing the product.

### (ii) The Research Design and sample.

The study focusses on children's diarrhoea since children are more at risk from de-hydration than adults. In-depth interviews were administered to a sample of two hundred mothers, half urban and half rural dwellers at twelve research sites.

The interview schedule was in three parts. The first part was designed to bring out general perceptions of diarrhoea, its causes, action upon the body, associated symptoms and diseases, and care of the diarrhoea patient and treatment of the disease. The second part of the interview schedule recorded particular cases of children's diarrhoea as reported by the mother or other caretaker. Here treatment patterns, the signs by which episodes were assessed, and decisions making patterns were observed. The final section of the interview was again general and geared towards finding out about respondents' perception of the signs of de-hydration.

The research sites were chosen so as to cover as wide an ethno-geographic range as possible, and to include places with varying levels of access to modern medical facilities.

At the urban sites, Accra, Takoradi, Ho and Tamale two fifths of the sample were literate. All those in the rural samples were non literate.

The rural sites;

Kokrobitey: A Ga fishing village in the greater Accra Region  
no clinic but fairly regular visits from community

health nurses. Piped water.

- Eawuleshie: An inland Ga village ; no clinic, but the villagers use Legon hospital about three miles away. Piped water.
- Jumapo: A large Akyem (Akan) village in a heavy food and cocoa producing area in the Eastern Region. Piped water and a government clinic staffed by nurses. Also Koforidua hospital is only six miles away.
- Patriensah: A large Ashanti village in a heavy food and cocoa producing area. No health facility. The nearest clinic is at Konongo three miles away.
- Sokode Etoe: A north Ewe village in the Volta region near to Ho. No clinic. Ho hospital is the nearest.
- Afiadenyigba: An Anlo Lagoon fishing village. There is a health post and Dzodze hospital is fourteen miles away.
- Saboro: A Kasena village in the Upper East region three miles from Navrongo which has nearest health facility. No piped water.
- Dapouri: Upper West region, 11 km. from nearest health facility which is Jirapa hospital. No piped water.

(iii) Children and faeces in art and oral literature.

Proverbs typically take an allegorical form. In Mampruli, proverbs whose message has nothing to do with children use the child allegorically to represent physical filth. This is in fact the chief allegorical use of the child in Mampruli proverbs.

Akan Ewe and Ga all have some version of a proverb which translates as follows: "If a child eases itself on your thigh you never clear away the mess by cutting away that part of the body with a knife." The broader meaning of this proverb is that one should not over-react to inconveniences arising out of an important enterprise. It is cited in a literal sense too. People avoid raking any kind of fuss when their clothes are soiled by infants. Men and women, on becoming parents are cautioned that if the child soils their clothing it is a blessing.

An old Ewe practice reported by one of the Ewe fieldworkers but judged now to be defunct is that when some faeces of your infant by accident falls into your food, you do not throw out the whole food but only the faeces and visibly contaminated part. To do otherwise would be a sign of lack of love for the child.

Mother and child themes, "maternity" , are common in African art . Contemporary Ashanti brass goldweights include a range of maternity themes including that of a mother administering enema to her baby. Thus is the giving of enema solidly enshrined in indigenous art as a typical maternal act.

## II FINDINGS

### (i) The place of diarrhoea among children's illnesses.

Mothers were initially told that the interview was about child health and were asked what illnesses their children suffered from. The aim was to find out to what extent diarrhoea figured amongst the illnesses that gave mothers cause for concern, or whether it was viewed as too minor for inclusion among the "serious" illnesses.

In fact diarrhoea figured very prominently in reporting of illnesses by mothers all over the country, both literate and non-literate. It was mentioned by 71% of the total sample, second to fever which was mentioned by 75% of mothers and followed by measles (47%), and cough (41%).

Diarrhoea seemed to loom largest in mothers' perceptions not necessarily where it was most prevalent but where incidence of other diseases was less. For instance among the Ga, it was the city literate who most frequently included diarrhoea in their list of children's illnesses. In the Ga fishing village of Kokrobitey by contrast the mention of diarrhoea was lower than at any other research site (33%), even though more mothers there reported deaths through diarrhoea than at any other site and a great many children were observed to have diarrhoea at the time of the fieldwork.

### (ii) The Identification of diarrhoea

All five major language groups featuring in this study had one main name for diarrhoea as a symptom, a name which also to the mothers in the study served as a name for some of the diseases that it was a symptom of. In other words the term binsaa (Dagbani) and Musuntsomo (Ga) function much as the term "diarrhoea" does in layman's English. Differences however exist in the identification of particular diseases which have diarrhoea as a symptom. Several of these involve diarrhoea in babies, and focus on some particular sign of de-hydration.

#### Fontanel Diarrhoea

Sunken fontanel, a sign of de-hydration in babies was identified a discrete illness at the Akan, Mole-Dagbani and Kasem research sites. The disease, Agram in Twi, Zugu in Mole-Dagbani was perceived as primarily a problem of the fontanel with diarrhoea as an accompanying symptom. Treatment focusses on the fontanel, and as far as we could discover diarrhoea treatments like enema were not given. The fontanel is plastered with herbal pastes which are sometimes supported on a light framework of twigs. This has to be done by herbalists. The disease is much feared and reported to be often fatal. At one of the Ewe sites

diarrhoea with sunken fontanel was also reported to be treated in this way by a herbalist but no separate name for the disease was given and nor was "fontanel diarrhoea" a widely recognised problem.

One fontanel disease patient was encountered by the researcher at a herbalist's house in Tamale. She was thirteen days old and had been suffering from diarrhoea with vomiting for a week. The flesh was emaciated and lacking in elasticity. The latter were said by the herbalist to be typical accompanying symptoms of fontanel disease along with the diarrhoea.

Another dimension of the importance of the fontanel in babies' diarrhoea emerged when one respondent in Tamale cited a too broad fontanel as a cause of diarrhoea. It lets bad air into the body causing diarrhoea. Only one respondent mentioned this as a cause of diarrhoea but community health nurses confirmed that it is not an uncommon belief in northern Ghana.

#### Sunken eyes diarrhoea; Akpa.

When diarrhoea in infants leads to sunken eyes the Ga have a special name for it, Akpa. A few Ga respondents mentioned both Akpa and diarrhoea separately as illnesses that their children suffered from. It is seen as a serious disease, often fatal. Treatment focusses on the diarrhoea aspect of the disease. Some of the same herbs are used for bathing, drinking and enema as are used for ordinary diarrhoea. Some thought that Akpa was caused by a problem with the breast-milk, but this was not universal. Akpa is recognised mainly by older and rural Ga, and some city dwellers are unfamiliar with the term.

#### Dysentery

Diarrhoea that goes on for some time and is accompanied by blood or mucus has a separate name in Dagbani, Fumahagu, which is translated into lay English by literate Dagomba as dysentery.

Literate respondents also sometimes refer to diarrhoea with blood or mucus as dysentery.

#### Cholera

The Kasena people of Upper East region referred to a particularly acute form diarrhoea which had its own name, Nichio. This was translated by the fieldworker as cholera. Its symptoms are whitish watery stools with vomiting and it is often fatal. When a person is struck by Nichio one particular person is appointed to care for the patient until he recovers or dies. If he dies, everybody who has had contact with him must together go through a ritual together if they are not also to suffer from the disease.

Fieldwork at the Anlo Ewe village of Afiadenyigba coincided with a cholera outbreak. Several people had died and others were still going down with the disease and being rushed to hospital when the fieldworker arrived. Most of her ORS intended as incentives to interview respondents she administered as first aid for cholera victims. Cholera here was recognised by the speed with which victims became seriously ill, the frequency of vomiting and watery stools and the fact that it affected a number of people in the community during a short period of time.

These were the only places where awareness and separate identification of cholera came to light. Cholera is probably separately identified in other parts of Ghana too but respondents did not refer to it in the context of discussion of general diarrhoea.

#### Diarrhoea with Malaria

About half of the mothers indicated that they considered diarrhoea with fever to be mainly a problem of "fever" itself, a disease category different from diarrhoea and largely though not in every language wholly congruent with malaria. Some also said that stomach pains and vomiting could be mainly symptoms of "fever". At the Ewe village of Sokode Etoe respondents were quite clear that if a person had diarrhoea and a temperature then he was suffering from two diseases, one producing the temperature and the other the diarrhoea.

However, analysis of treatment patterns produces a very fuzzy picture indeed. Reported diarrhoea episodes whose accompanying symptoms were fever, with vomiting and or stomach pains often appear to have been treated with local diarrhoea medicines. Moreover in local medicine these often overlap. The leaf of guava, a fairly new exotic tree is used all over Ghana both for diarrhoea and for fever.

#### Diarrhoea with "Measles".

At all the research sites in the South of Ghana there were one or two respondents who cited measles as a cause of diarrhoea or who associated certain symptoms; mucus, blood or fever, with "measles diarrhoea". Two people referred to measles hidden in the stomach with no rash appearing, and two others reported children dying of measles with diarrhoea. Some talked of acute diarrhoea preceding measles and others talked of it coming at the end of an episode, the loose stools allowing the measles to come out of the stomach. Enema was considered useful in helping the measles to come out of the stomach.

It is possible that some of this "measles diarrhoea", especially the type which is "hidden in the stomach" and in which the rash is light or not present could be typhoid which has diarrhoea as a symptom towards the end of the disease.

### (iii) Causes of Diarrhoea

Chief causes of diarrhoea were held to be first, contaminated food or water, second food unsuited to the person's age or constitution. Teething, fever, measles and lack of hand - washing (in that order) each received a few mentions at each site.

The literate, (urban sites only), placed more emphasis on contaminated food, poor hygiene and teething than did the non-literate.

Regional variations in accounts of causes of diarrhoea were mainly a question of particular local beliefs held in addition to the main list.

In Tamale a few respondents mentioned the problem of a broad or sunken fontanel bringing diarrhoea. In the Ga area, Akpa infant diarrhoea with sunken eyes was the local peculiarity.

The most comprehensive accounts of the causes of diarrhoea were produced at Dapouri in the Upper West region. Mothers here have very little recourse to the nearest clinic or hospital which is 11km. away. They rely heavily on their own herbal and magico-religious cures and gave detailed accounts of the causes of diarrhoea which typically included food contamination and unsuitable food as well as the explanations peculiar to the area. Chief of these was navel problems, mentioned by 60% of the mothers. Concern about the navel in connection with diarrhoea was not met at any other other research sites. Our Degaarti respondents associated navel problems mainly with foam in a loose stool. Treatment of "navel diarrhoea" required a specialised herbalist who makes incisions on the skin radiating from the navel as well as giving herbal infusions to drink.

A third of Dapouri mothers also mentioned the mother's dirty nipples as a cause of diarrhoea in babies. Concern about dirty nipples was not reflected in any preventative hygiene like breast washing before or after breast feeding but treatment of babies diarrhoea believed to be caused by dirty nipples involved a breast wash with an infusion of herbs and ash.

A general state of "cold" was also mentioned by some mothers in Dapouri as being responsible for diarrhoea amongst other afflictions.

Spiritual transmission of diarrhoea through the breast milk was reported by a few mothers at Dapouri and Saboro. In both places it was believed that the spiritual contamination takes place at a crossroads. A nursing mother crossing the point where two paths meet can pick up breast milk contamination left there by a the last nursing mother with the same problem who crossed there. The cure includes going to a crossroads and expressing some milk there.

#### (iv) Feeding of the diarrhoea patient

There were reports, which informed the design of this study that it was quite common practice to limit fluid intake during a diarrhoea episode in the belief that this would solve the problem of watery stools. This study found that belief and practice to very uncommon. Only amongst the non-literate Fante in Takoradi (20%) were mothers interviewed who admitted to limiting the amount of water which they gave to children to drink during a diarrhoea episode. Elsewhere everyone reported giving the children all the water they wanted to drink, most adding that children with diarrhoea drink a great deal. Some who did not elsewhere show awareness of de-hydration as a problem stressed that a child with diarrhoea needs extra water.

It is relevant here to note that children under the age of about five generally have to ask someone older to give them drinking water since they are too small to reach the tall pot and scoop up water in the cup.

About half the mothers reported giving a diarrhoea patient normal food so long as he will take it, with the exception of certain foods which were to be avoided. They added however that often a child with diarrhoea rejects normal food and so they give him a light diet consisting in practice of home available re-hydration fluids. The other half of the mothers said that they always put a child with diarrhoea on to this kind of fairly liquid light diet. It was in Ho that the highest proportion of mothers was found who automatically put children on a light diet when they had diarrhoea.

The drawback of these feeding practices is that home available fluids are given instead of not as well as normal food, in many cases whether or not the child is able eat normally. Moreover, except for those who have been exposed to talks by primary health care personnel people do not think of corn porridge or rice water as re-hydrating fluids but simply as a light diet, and there is no emphasis on providing enough nutrition, especially protein. In Kokrobite a two-year old was encountered who had been suffering from diarrhoea for a week during which her main food had been thin corn porridge and she was looking weak and emaciated.

Unfortunately, rather late in the process of the study we picked up the fact that some people consider sugar to promote diarrhoea and thus did not find out about the extent to which sugar was put in porridge for diarrhoea patients. Respondents never mentioned excluding sugar from the porridge of diarrhoea patients however, whereas they did sometimes talk about excluding pepper from soup. The common corn porridge which is sieved, slightly fermented and then well boiled was the most usual form of light diet. It does not normally contain any salt and the addition of sugar usually depends on whether people can afford it.

Rice-water and tea were given less often than corn porridge. Rice water always contains some salt and usually sugar as well since being unfermented is too bland to be palatable otherwise.

In Dapouri where of all the research sites there were fewest consumer goods sugar was not used because people did not have it. Community health nurses however had advised people to add honey or to use dried baobab or Gaa (diospyros misipiliformis) fruit juice in porridge for diarrhoea patients. The latter both have a sweet taste and also contain some vitamin C.

Dawadawa, a condiment made mainly from fermented locust beans (Parkia Clappertoniana) has a lot of potential as the basis of a home available re-hydration fluid having protein and minerals and being easily used like a bouillon cube. However amongst the people who make it, (all northerners) it is believed sometimes to cause diarrhoea, either if not correctly processed or if taken by someone unused to a particular version of it. Dagaarti mothers in fact sometimes suspect dawadawa, of being the cause of a diarrhoea case and cut it out of the child's diet altogether. Paradoxically, Ashanti mothers to whom this is a somewhat exotic condiment available from northern traders in the market do sometimes use dawadawa in soup for diarrhoea patients as a cure, although they would not normally use it for non-medicinal purposes.

Foods to be avoided by someone suffering from diarrhoea were varied. Generally oily foods or foods considered 'heavy' like fufu or kenkey were considered undesirable for diarrhoea patients. The specific dishes to be avoided varied a good deal depending on the predominant oily dish of the area. In the north it was the oily rice dish, and groundnut dishes and in Ashanti and Takoradi it was palm soup.

"Rice", by which people meant the all-in-one rice dish with oil and assorted ingredients came in for general opprobrium, to the extent that several mothers in the urban areas specified "rice" when they mentioned unsuitable foods as a cause of diarrhoea. The particular objection to rice especially in the urban areas was related to the fact that it is a common street food which gets handled by the sellers at an ambient temperature and could even be old and re-heated if all was not sold the previous day. "He ate rice and got diarrhoea" means "he bought rice off the street and got diarrhoea." Wariness of the oily rice dish did not appear to affect people's attitude to rice-water as suitable fluid diet for a diarrhoea patient since some of the same mothers who avoided the oily rice dish gave rice-water to children with diarrhoea.

Fermented corn porridge (kokoo or akasa) was the most widely used form of light diet for diarrhoea patients but in Anlo Afiadenyigba it was avoided by most mothers who believed it to promote watery stools.

Groundnuts and groundnut soup were also widely avoided but particularly in the Upper East and Upper West where raw groundnuts for chewing are one of the vital staples.

Beans, which a few people at most sites considered unsuitable for diarrhoea patients is one of the special dishes prepared for them in Dapouri. Roasted bean flour is cooked with very little water and stirred to a stiff paste. Its dry nature is considered beneficial in absorbing excess liquid in the alimentary tract. However plenty of water to drink is also given.

In the Upper East and Upper West regions there is a particular objection to "cold" food for diarrhoea patients and it has been suggested that this could make ORS unacceptable as falling into the category of things cold. However we found that by cold food people meant unheated left-overs. Food for diarrhoea patients was to be freshly prepared and hot. The concern to avoid cold things however did not extend to drinking-water and several Dapouri respondents specified that someone suffering from diarrhoea needs cool water to drink.

#### (v) Perceptions of characteristics of diarrhoea and accompanying symptoms.

In order to find out how and whether people categorised diarrhoea into different types we focussed upon three stool characteristics, foam, mucus and blood, and three symptoms that can accompany diarrhoea, abdominal pains, vomiting and fever. We asked people what causes and bodily conditions they associated with these things.

Respondents varied a great deal in the extent to which they provided explanations of the cause and action of symptoms and characteristics. The literate samples and the villages where people depended most on local medicine had the highest level of respondents with ideas about the implications of different symptoms.

#### The Stomach

"The stomach" in lay English means everything from the stomach to the anus, or at least the colon and it corresponds with the terms used in the local languages. Hence enema is widely considered capable of reaching "sores in the stomach". However some respondents as far apart, as Accra and Tamale specifically distinguished between the upper and lower stomach in connection with different diarrhoea symptoms.

#### Stomach pains

These are considered to be mainly caused by dirt in the stomach, sore in the stomach or both, since "dirt" in the stomach can cause a sore which in turn causes pain. "Dirt" is general unwholesomeness and can be of a spiritual nature as when a person

violates a taboo and "brings dirt into the house" or in the case of diarrhoea of a physical kind as that produced by eating unheated left-over food.

Diarrhoea with stomach pains is sometimes attributed to worms.

#### Mucus in the stool

Most respondents were familiar with diarrhoea involving mucus in the stool. It was taken by most people to be a sure sign of a bad sore, often specified to be low down in the "stomach" or sometimes in the anus. As a result it was often treated with enema since it was believed to be in an area that enema could reach. Mucus and blood were perceived as related often going together and attributable to the same causes.

Most mothers in Dapouri and some in Saboro deviated from this general pattern in talking not of a sore but of some harmful living matter in the stomach described by one informant as being "like yeast" and by one fieldworker as infection, and another as parasites.

At Anlo Afiadenyigba there was a very high incidence of "don't know" in connection with mucus in the stool, whereas for other symptoms and characteristics people had explanations. The usual association of mucus with blood was also absent. A possible reason for this blank on mucus was the presence of cholera in the village at the time, which was a bewildering and frightening experience and may have affected perceptions of this particular diarrhoea characteristic.

Those respondents who associated bad diarrhoea with measles saw mucus as a sign of diarrhoea caused by measles.

#### Blood in the stool

Most informants who had something to say about blood or mucus observed that they were likely to occur together or that mucus was likely to be followed by blood. The terms pumahugu (Dagbani) and mansugu (Dagaarti) refer to mucus and blood.

Therefore associations of blood with diarrhoea were the same as for mucus, except that blood was sometimes described as resulting from sores of more general location than those producing mucus. Also blood was seen as more serious than mucus alone since it was more often mentioned than mucus as a sign that diarrhoea had become serious.

#### Foam in the stool

Foam in the stool was unfamiliar to some respondents and was less widely recognised than any other symptom or characteristic of diarrhoea, producing fewer explanations. About a fifth of respondents, more literate than non-literate, associated foam in the stool with teething.

In Dapouri foam was universally seen as being the specific indicator of diarrhoea caused by problems in the region of the navel, and sometimes of a sign of "cold."

### Vomiting

Most respondents indicated that vomiting could be caused by bad (contaminated) food or by fever. Fewer saw it as a sign of sore in the stomach sometimes specifying the "upper stomach."

In Anlo Afiadenyigba many people associated vomiting with cholera.

### Fever

Many respondents observed that diarrhoea could be accompanied by local raised temperature in the region of the stomach. A general raised temperature however led many (especially the literate) to think that the main cause of the diarrhoea could be the fever itself. Others thought it most likely that if there was fever as well as diarrhoea then the person was suffering from two separate illnesses at once. This perception was almost uniformly held at the Ewe village of Sokode Etoe. Yet others suggested that a raised temperature was simply a sign that diarrhoea was a serious one. However the various interpretations of diarrhoea and raised temperature which people expressed did not seem to fit or strongly held perceptions. In other words, people were often not sure what was going on when they had a case of diarrhoea with raised temperature.

Whatever the causal connections suspected, diarrhoea with fever was regarded seriously, often the presence of fever prompting a visit to the hospital which would not otherwise have been made.

To those who associated teething with diarrhoea, fever in a baby of the teething age accompanied by loose stools with foam was understood to be caused by teething.

### (vi) The Perceived Seriousness of diarrhoea episodes

Since diarrhoea ranges from mild cases that disappear with no treatment leaving causing little suffering and fatal attacks and it is with knowing how people make the assessments that inform their decision-making.

Respondents were asked what made them consider that any particular episode of diarrhoea was becoming serious.

The frequency and consistency of diarrhoea (wateriness) and duration of the episode were the main factors that people considered. Stools that became more frequent, more watery or that simply continued in their diarrhoeal state gave cause for

concern and prompted people to start treatment or change to another kind of treatment. After consistency and frequency of stool respondents mentioned general weakness as a sign that the diarrhoea was serious. Other indications received a few mentions; fever, sunken eyes, blood or mucus in the stool and vomiting.

### (vii) Treatment of diarrhoea

Mothers were asked to describe recent cases of diarrhoea in children in their care, and to give an account of the progress and treatment of the illness. From these case reports we have analysed the main kinds of treatments used.

We identified four main categories of treatment, local medicine, self-medication with pharmaceutical products, hospital or clinic treatment and ORS. ORS, other than that prescribed at a clinic was in fact used as a first line of treatment only by some in the urban literate samples.

For the non-literate in this study the commonest form of first line treatment was local medicine, (46%), followed by hospital treatment (35%) and self-medication (19%).

There was a lot of variation by site, however in the proportions of the main types of treatment used. Local medicine was generally in greater use in rural than in urban areas, and amongst rural areas the general level of infrastructural development and access to a good hospital also affected the extent to which people depended on local medicine. For instance at Jumapo in the Eastern region where there is a level B health facility and where people are within easy reach of a hospital, patterns of treatment are like those of an urban area. In the villages of the Upper East and Upper West region by contrast, dependence on local medicine was almost total.

#### Local Treatment

The range of leaves, roots, bark, and seeds, in use for diarrhoea treatment was enormous. At every research site respondents reported using a range of herbal treatments of which usually only one or two recurred several times and then often not consistently enough to suggest a pattern.

Local medicine was administered in five main forms; enema, herbal infusions for drinking, ingredients to be added to soup or porridge, infusions for bathing in and suppositories. Sometimes the infusion was divided into parts, some to be used for enema, some for drinking and the rest to bathe with.

It seemed that when a plant was seen as beneficial the strategy was to get it on or into the body by whatever means possible. One mother describing a particular diarrhoea episode in her child said that when he refused to drink the herbal infusion she gave it to him by enema instead.

In certain areas special kinds of diarrhoea involved yet other means of medicinal administration. Diarrhoea with sunken fontanel in babies was treated with herbal pastes on the place of the fontanel, and diarrhoea with foam in children up to about ten years in the Dagaarti village of Dapouri was treated by herbalists with incisions around the navel into which medicines

herbalists with incisions around the navel into which medicines were rubbed.

Apart from a few local specialised forms of treatment such as the herbal pastes and the navel incisions mentioned above few people had recourse to herbalists for diarrhoea treatment. In the rural areas mothers and in some cases fathers collected the herbs themselves or sought the help of a friend or relative in the procurement of plants. Every grown up person was expected to have basic knowledge in this area. Among the Dagaarti local medicine was one of the areas of knowledge imparted to girls by their mothers in the lessons preparing them for marriage.

### Enema

67% of non-literate and 33% of literate respondents said that they did give enema at times when their children had diarrhoea. The actual incidence of use in the reported cases however was about half of those figures. Some of those who gave enema did so at the same time as taking the child to hospital or treating with self-prescribed drugs.

The concoction given for enema was sometimes identical to that given to be drunk. For instance in the Ga ethnic area guava leaf infusion with white clay dissolved in it and in the Akan area Nyamedua were found to be given as enema almost as often as they were drunk. Often the same kind of leaves were used for enema as for drinking medicine but spices like pepper and ginger were also added. In some cases people named plants which were only used for enema, such as sulu (Ga) and Akyeampong (Ga) leaves which are used for enema when there is mucus in the stool. In Dapouri enema was only given for diarrhoea when a sore was suspected which was not as often as in most areas, and then enema was given with infusion of dawadawa (parkia Clappertonia) bark which is not used for drinking.

Enema-users aim to clean out the dirt or to cure the sore which is causing diarrhoea and its accompanying symptoms. The idea of a sore in the "stomach", (especially the "lower stomach") or the rectum, causing diarrhoea is strong and prevalent. It is seems likely that in generic ORT education, convincing people to desist from enema in diarrhoea treatment is going to be a more difficult than other aspects.

Among those who did not use enema for diarrhoea treatment some observed that it promoted loose stools and therefore could not be expected to cure that same condition. This, along with the de-hydration explanation is the argument most likely to persuade present enema users to modify their treatment patterns.

### Drinking medicine

About fifty different names of plants were given by respondents for making diarrhoea medicine to drink. For most, none but the local names were known. Only the most common and

the exotic ones could easily be identified across language groups. Exotic (non-indigenous) plants are coming to play a major part in local medicine. Guava, neem, and mango are all in use for malaria treatment, and guava and mango for diarrhoea as well.

"Traditional" medicine does not stand still. For instance the mixture of guava infusion and white clay now popular in the Ga and to a lesser extent Akan ethnic areas was introduced within the lifetime of our older respondents. In the north guava infusion was used without white clay, probably because the clay which is found on the coast is not as cheap or widely available in the north. Guava alone or in combination with other ingredients was used in half of local treatments by the Ga, and the Dagaarti, about a third by the Kasena and a quarter by the Akan. In the Ewe area guava was scarcely found to be in use at all but mango bark infusion often with salt accounted for about half of local treatments at the north Ewe sites.

Euphorbia Hirta a small plant found all over Ghana was found to be used for diarrhoea with mucus or blood in the Kasena area and in the Anlo Ewe area.

Nyamedua (Twi) leaf was reported as used quite often at Akan and Ga sites.

### Suppositories

Suppositories were an uncommon form of local treatment for diarrhoea. In the Upper East and Upper west the suppositioires involved shea butter and soot, in Tamale ground ginger and other spices, and the Volta Region, onion and spices. They were supposed to cure sores in the anus.

### Hospital Treatment.

A visit to the hospital or clinic is not most people's first line of action when their child has diarrhoea, but when local medicine or self-medication fail, almost all then go to the hospital. Cases treated with local medicine are ultimately taken to the hospital about three times as often as cases treated with self-prescribed pharmaceutical drugs.

It was found that in the places where people made least use of local medicine that when they did use it they often abandoned it if it was not seen to be working and took the child to the hospital. (see table appendix) The villages with the highest use of local medicine as first line treatment (Saboro, Dapouri and Sokode Etoe) also had the lowest rate of referral to hospital.

The success of hospital treatment when it was used was high in most places. In Ho and Anlo Afiadenyigba however 25% and 60% of cases taken to the hospital were reported finally to be cured with local medicine. At Jumapo when the Kaolin and magnesium trisilicate which the nurses at the clinic had available failed

to work most mothers took the children to Koforidua hospital. A similar pattern was found in Accra. Half of those who went to clinic or hospitals used a nearby private clinic (not usually run by a doctor) first, and if the treatment given there did not work then the child was taken to a government hospital or polyclinic.

#### Self medication.

Self medication was a fairly minor form of treatment (non-existent in the Upper East and Upper West villages) except in Tamale, Ho, and the Ga fishing village of Kokrobitey.

In Tamale 75% of reported diarrhoea cases were treated with drugs bought from pharmacists and chemical sellers. Respondents were spending from 20 to 1,200 cedis on getting a diarrhoea episode cleared. Mean expenditure was 520 cedis. The Tamale and Ho respondents were all highly conversant with the names of the drugs they used. Three quarters used anti-biotics, mainly ampicillin or sulfa but occasionally chloramphenicol. The rest bought kaolin or malaria drugs. Ampicillin was usually given to children in suspension but some mothers dissolved capsules for them to drink which was cheaper. Sulfa was given in the form of Septrin suspension or tablets known by their brand nickname, "M&B". In Kokrobitey those using drugs without prescription were buying them from itinerant peddlers and had no idea even of the names of what they were buying.

Why Tamale should be different from other sites in the very high incidence of self-medication is not entirely clear, but may have to do with particular characteristics of the sample.

The area where respondents were randomly sampled contains many fairly well to do non-literate traders, though water supply and sanitation are poor. It is likely that in a lower income sample such high expenditure on pharmaceutical products would not have been found and that more use would have been made of local medicine.

For the Dagomba and Gonja traders interviewed in Tamale the time to take a child to hospital was at least as much a problem as the money involved. Going to the hospital was more expensive too because prescribed drugs usually had to be bought from private drug-sellers and there were also transport costs involved. Many explained their choice of mode of treatment with reference to another diarrhoea case in which a certain drug was prescribed and found to be effective. Those who can afford it in Tamale have come to depend on chemical sellers and pharmacists as their medical consultants.

## Purgatives

It was hypothesised in the research design that a significant proportion of people might use purgatives for diarrhoea in an effort to "clean the dirt from the stomach". In fact only three cases of this, in different parts of the country were found. Most people when asked about purgatives in treatment of diarrhoea were quite vehement in their rejection of the idea, saying that purgatives would do the reverse of stopping the diarrhoea.

### (viii) Decision-making on treatment of children's diarrhoea

Much depended on residential patterns as to who was involved in decision-making on treatment. At the Ga and rural Akan sites fathers were not always jointly resident with wives and/or children and therefore were not involved at all in decision-making, only in paying for drugs. Among the non-literate Ga both in city and village and among the rural Akan we found maternal grandmothers playing a big role as primary caretakers of young children and as supervisors of the mothers. Fathers not residing with children were only involved in paying for drugs, and were often not informed that the child was unwell until it was deemed necessary to buy drugs or take the child to the hospital.

Fathers were most heavily involved in decision-making in the Upper East and Upper West villages and among the Ewe. These were also the areas most dependent on local medicine. Like mothers they were familiar with a range of local medicines and were usually involved at least to the extent of being informed by their wives of what treatment was being given, or they made their own suggestions or helped procure plants.

Among Dagomba and Gonja respondents in Tarale where fathers usually are co-resident with children they are still not often involved in decision-making on diarrhoea treatment. Even though the father "owns" the child to the exclusion of the mother he is only involved in medical treatment or health decisions if herbalists, mallams or soothsayers are involved. These practitioners do not give consultations to mothers who bring children alone. They must be accompanied by the child's father or a responsible representative from the father's family. Most diarrhoea cases are not brought to such specialists but treated with local medicine or self-prescribed pharmaceutical drugs by the mother. Cough, more than diarrhoea is treated with by local specialists and thus fathers are more involved with cough than with diarrhoea treatment.

In polygynous homes individual wives provide for a large part of their children's needs and it was observed that in such homes the fathers rarely paid for the medicine. Some mothers said that there was no point even in informing them that the child was ill. In such homes fathers are not even aware that a child is ill

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until the case is very serious.

The only kind of diarrhoea requiring specialist local treatment is "fontanel diarrhoea", which is diagnosed when a child has diarrhoea and a sunken fontanel.

(ix) Perceptions of de-hydration

The table below shows eight signs of de-hydration which we asked respondents if they had ever seen in a child with bad diarrhoea. The figures alongside indicate the percentage of respondents who gave a positive response.

<u>non-literates</u>		<u>literate</u>
Dry mouth	63%	33%
Tearless eyes	58%	23%
Sunken eyes	90%	67%
Little or no urine	49%	37%
Flabby skin	75%	70%
fast breathing	63%	43%
Inability to drink	19%	17%
Sunken fontanel	50%	23%
	(N=160)	(N=40)

Literates, who take children to hospital sooner than non-literates have less exposure to de-hydration.

Sunken eyes and then flabby skin which score highest on recognition here were also (in the same order) the only signs of de-hydration mentioned by respondents when describing how they could tell when a diarrhoea episode was becoming serious. As well as sunken eyes respondents sometimes talked about "white" eyes by which they were not referring to the quality of the white of the eye but to the fact that more of the white and less of the iris was visible than usual.

In connection with dry mouth a few added that mouth sores sometimes occurred as well.

Tearless eyes was a condition whose description confused a lot of people because sometimes children cry and sometimes not irrespective of whether they are de-hydrated.

Regarding urine some respondents thought that children with

diarrhoea also urinated a lot because they drank a lot and several added that the urine tended to be yellowish in colour.

Fast breathing and inability to drink were seen by a few respondents as sure signs that the child was dying.

Respondents were also asked to explain what they thought was happening to the body when those of the de-hydration signs that they recognised occurred. That the child was dying or very ill was the commonest explanation. About a quarter of non-literates referred to loss of water, and this was always traceable to exposure to ORT or ORS education, encountered by the rural mothers in the north when primary health care nurses came to the village and by others on visits to the hospital when ORS was prescribed. General weakness was a theme stressed by many in connection with de-hydration signs. Loss of weight and paleness were also cited in connection with de-hydration signs.

About two thirds of literate mothers, having more exposure than non-literates to ORS and ORT education included water loss as a cause of the de-hydration signs. Some used the term "de-hydration."

#### (x) ORS and ORT: Knowledge, Attitudes and Practice

One or two respondents at most sites (14 altogether) had been given a UNICEF ORS pack before. The largest numbers of mothers thus exposed to ORS were at the Greater Accra sites and Tamale. Four had the measurement of water wrong, either using one beer bottle of water or mixing the salts a little at a time to taste in a cup. Four also did not administer the drink often enough. All but one knew to discard the mixed solution after twenty four hours. When asked to describe the what ORS does only three mentioned re-hydration, two that it gives energy and the rest that it cures diarrhoea, one adding that "It kills the bad things in the stomach."

There was more exposure to Sugar Salt Solution ORT than to ORS but nobody had the recipe right. In Dapouri, the site furthest from a clinic (11 km) and most dependent on local medicine, there was highest use of of some version of SSS (42%) taught by visiting primary health care nurses. However in the absence of sugar in that community they had taught people to add honey or sugary fruits like dried baobab. The emphasis was on salt and there was no measurement of the sugar substitutes.

In other places too there were respondents who reported using salt only solution. The wrong recipes always involved too much emphasis on salt e.g. a teaspoon each of sugar and salt in a beer bottle of water. In Ho we found that some people were adding salt to mango bark infusion which is the most popular local treatment in that area.

One mother in Accra had obtained the SSS drink which was mixed for her by the pastor of a spiritual church using salt

purified in the church. This is an example of how health knowledge can be appropriated for the furthering of personal or institutional influence. The pastor did not teach the mother the SSS recipe and reinforced her dependence on him for this health aid by attaching spiritual power to one of the ingredients. Established churches have been teaching SSS to their mothers' groups without any spiritual strings attached.

A complaint by some literate mothers is that the children refuse to drink ORS because it is not palatable. Most non-literates however have no difficulty in getting their children to drink it. To children in poor homes or where sugar of any kind is a rare commodity the sweetness of ORS, even though mixed with salt, makes it acceptable. Besides the children of the non-literate and the poor are brought up in such a way that they are more easily coerced than the children of the literate. Traditional local medicines, like ORS, are not noted for their palatability.

With ORS and ORT there are several indications that it is the salt and water contents of the solutions that impress people as important ingredients. The term ORS itself carries no reference to sugar. Home recipes and local adaptations, are all salt focussed, sometimes to the total exclusion of sugar. The pastor referred to above purified the salt in the church. Salt has been perceived as a necessity from time immemorial. It was one of the chief items of pre-colonial internal trade. Sugar by contrast is seen as a luxury whose excessive consumption is variously associated with rotten teeth, loose stools, low sexual potency and difficult child-birth.

#### (xi) Some factors affecting the popularisation of ORS

Looking at the way in which people dealt with diarrhoea it became clear that when an episode was serious mothers were very worried and ready to try anything. There was no evidence of conservative older family members holding out against new medicines. Drugs sold by the peddlers were a welcome addition to the existing range of treatment. Similarly ORS was eagerly received when fieldworkers gave it out as a "thank you" at the end of an interview.

Despite the wide range of local cures, diarrhoea is a frightening disease and everyone knows cases where it has been fatal. Eight out of the two hundred mothers in our study had lost a child through diarrhoea. Moreover de-hydration signs scored a high level of recognition and the chief association with the signs in the minds of respondents was death. Diarrhoea, like malaria is extremely prevalent and a great many episodes pass without much ha.m done, but a substantial minority of cases become critical. The outcome of any particular episode is unpredictable. Given most people's resources and access to hospitals and the uncertain effectiveness of local medicines diarrhoea is a worrying disease, not under control. Therefore people are open to new approaches and medicines.

Diarrhoea treatment is mainly carried out by individual parents with knowledge which is common and plants which are available, only a tiny fraction of cases being treated by herbalists, and so in the local sphere very few stand to lose by the popularisation of ORS and the knowledge of how to use it. If ORS is widely and cheaply available as a self-prescribed medicine it will have certain parallels with local medicine.

It is likely that chemical sellers and pharmacists who are bound to make more profit out of selling anti-biotics for diarrhoea than ORS, will recommend the use of ORS in addition to rather than instead of the anti-biotics

(xii) Faeces disposal and hygiene.

Children were found easing themselves on the compound floor, and clearing up the mess was often done by a pre-adolescent child. There was very little evidence of hand-washing after clearing up faeces, or of use of chamber pots. The faeces of infants with diarrhoea came into contact with mothers' cloths which were not then changed. Although we did not expect to meet a very high standard of hygiene regarding the handling of faeces conditions were worse in this respect than we expected.

Respondents were asked which was most important, hand-washing after contact with adult's or children's faeces. Among the non-literate a substantial minority replied that children's faeces are less harmful than adults', or that hand-washing need not be so thorough or need not even be done at all.

Poor hygiene, failure to wash hands after toilet or contact with faeces were scarcely mentioned by respondents when they gave their views on the causes of diarrhoea.

With regard to place of defecation it appeared that the very junior status of children by virtue of their youth made it unimportant as to where they defecated. In rural areas the rule is that small children may defecate within the compound and at age three or four are required to go outside. Adults walk to a toilet area in the bush. In the cities this has been modified. Adults now use the public toilets which partly through CDR efforts have been improved and which people must pay to use. Pre-adolescent children however still defecate on the rubbish heaps between houses. People say, "After all he's only a child, what does it matter?". This suggests that defecation as social behaviour impresses people more than the harmful nature of the faeces themselves. In Southern Ghana, the Akan, Ewe and Ga popular sayings cautioning adults not to make a fuss about children's faeces soiling their clothes if indeed they love their children, all promote the idea that children's faeces are not harmful.

## SUMMARY OF FINDINGS

1. Diarrhoea does rate as a serious disease in the minds of parents. Among some ethnic groups certain signs of de-hydration are seen as signs of special signs of diarrhoea, e.g. "fontanel diarrhoea" and "sunken eyes diarrhoea".
2. People do observe relationships between raised temperature, malaria and diarrhoea to exist, but their specific nature is a subject of much doubt.
3. Almost without exception, children with diarrhoea are given as much water to drink as they want.
4. Home available fluids are commonly given to children with diarrhoea but in most cases they are not recognised as having a re-hydrating function. They are viewed as "a light diet" and may contain neither salt nor sugar. They are given instead of rather than in addition to normal food with the result that children with diarrhoea tend to get a diet of lower nutritional value than they usually get.
5. Oily foods and foods considered heavy are not given to children who have diarrhoea.
6. The main causes of diarrhoea are believed to be old, insufficiently heated food and food to which the person is unsuited. There is little reference to inadequate hygiene, such as lack of hand-washing after toilet or before eating.
7. "Dirt in the stomach" causing a "sore in the stomach" are the dominant themes in the understanding of the action of diarrhoea on the body. The "stomach" includes most of the intestines down to the rectum as well as the stomach itself.
8. The seriousness of a diarrhoea episode is judged by the frequency and consistency of the stool combined with the duration of the episode without improvement, and also by the extent to which it makes the person weak. "Weakness" is a major theme when diarrhoea cases are being discussed and assessed.
9. Treatment falls into three basic types of which use as the first line of treatment is as follows: local medicine (45%), hospital or clinic (35%) and self medication (19%). When the first line of treatment fails to stop the diarrhoea people usually change to altogether another type, rather than for instance trying a different of herbal medicine or going back to the hospital. Hospital is the commonest second line of treatment.
10. Enema was used in the treatment of diarrhoea in about a third of cases and those who practise it believe strongly in its efficacy. Purgatives are scarcely used at all in the treatment of diarrhoea.

11. Decision-making on diarrhoea treatment is done mainly by the child's primary caretaker who is usually the mother. The children's fathers are also involved if they are around, if they have specialist herbal knowledge or it is more convenient for them than the mother to obtain the plants in the bush. Others such as the child's grandmother are likely to be involved if they are around. Their suggestions are generally welcomed. Decision-making on diarrhoea treatment was not observed to be an area of conflict.

12. Sunken eyes followed by flabby skin were the most widely recognised signs of de-hydration and were judged to be serious conditions quite likely to lead to death. Only those exposed to ORS or ORT education understood these signs as relating to loss of water from the body.

### III RECOMMENDATIONS.

#### (i) Promoting ORS

The GSMP ORS about to be marketed has the disadvantage of being a scarcely known product and the advantage of no real competitors. Advertising is complicated by the fact that it must contain an educative element.

ORS promotion needs a set of linked messages, arranged in a hierarchy according to depth of content, each designed for a particular communications channel and containing certain key links with the other messages. With the budget for advertising being small posters and Radio can carry the minimum message which advertises the product.

More in-depth communication, educating the public on how ORS works and how it should be used can be provided at public demonstrations. These need to be linked to introduction to the public of their local ORS experts and sellers who will have been identified and trained in advance.

Demonstrations and the training of ORS experts can be focussed on two types of location, the neighborhood and the market. Many non-literate urban women and children spend a good deal of time in the market. Here CDRs, city guards or primary health care-personnel could conduct demonstrations, also introducing the marketplace ORS experts. These could be the women who run the local medicine and spice stalls and ideally would also carry ORS on their stalls. (see section )

Finally an explanatory leaflet giving generic information on ORT is needed. It should explain not only about ORS and de-hydration but what the other kinds of oral re-hydration are, how to mix them, and why, when available ORS is best. The leaflet should be distributed to chemical sellers, village health

workers, church groups, social workers and teachers of family life education etc.

(ii) Radio: the message content

In a radio message it is necessary to balance simplicity and impact with accuracy and safety in prescriptions for use. In a short radio message for instance there is no point in saying that ORS re-hydrates and is adequate treatment for self-limiting diarrhoea but that some diarrhoea needs additional medical treatment in addition to ORS. On the other hand to advertise ORS as a complete diarrhoea cure would be misleading.

The most economical way to communicate the re-hydration function is to say something along the lines of "diarrhoea makes a person weak because it takes all the water out of the body causing de-hydration. ORS puts the water back into the body and gives the person strength. It is also worth adding "Don't let the person become weak, start ORS as soon as diarrhoea starts." Wherever people hear "weakness" associated with diarrhoea it will make sense to them and make them feel that the promoters of the product understand the problems of diarrhoea in the way that they do. The next step is to juxtapose "weakness" with "de-hydration".

The term de-hydration has already entered the vocabulary of the literate exposed to it and can easily become current wider section of the English-speaking population.

A jingle will be an asset in popularising the radio advertisement and can also be used at ORS educative sessions, providing a link between the two. Other links will be the product name itself, "ORS", and for English speakers the term "de-hydration".

(iii) Educative sessions: The Message content

Explaining what ORS does and doesn't do is slightly complex but not defeatingly so. By focussing on understanding and recognition of the de-hydration condition we can approach understanding of the way that ORS works. This study has shown that most mothers are familiar with the signs of de-hydration especially sunken eyes, flabby skin and general weakness, but that they do not have any idea of their immediate cause.

Our experience in this study has been that people are highly receptive to the de-hydration explanation when it is presented to them.

The question of how to judge whether ORS alone is sufficient treatment for a particular diarrhoea episode is an important one. A Ministry of Health guideline on number of

incidents of vomiting, number of days of loose stools etc which merit a visit to the hospital would be useful.

It is people's present practice, when one form of treatment, e.g. local treatment, fails to work to switch to altogether another kind of treatment like hospital or self-prescribed pharmaceutical drugs. Therefore it is necessary to emphasise that if after taking ORS for some time there is no improvement it is necessary to continue with ORS as well as taking the person to a doctor.

It is also worth speaking against the use of enemas for diarrhoea patients, the de-hydration focus providing a natural link to the avoidance of enema. Anti-enema talk is likely to get a mixed reception, however, especially amongst the Akan many of whom periodically give enema to infants with the aim of giving them strength, as well as using it as a cure for diarrhoea.

#### (iv) The place of ORS in Oral Re-hydration

There is justification for giving a dominant position to ORS in relation to other methods of oral re-hydration so long as it is widely and cheaply available.

SSS has the disadvantage that people almost always get the recipe wrong such that it is either ineffective, or if taken in sufficient quantities, toxic.

Home available fluids have certain drawbacks in that if they are to contain a useful combination of sugar and salt education is needed. It is not enough for people to gain the impression that rice water or corn porridge is good for diarrhoea. They need to know that some sugar and salt should be added since the inclusion of either or both of these ingredients is not automatic. There is also a need to ensure that people understand that such fluids should be an addition to and not a replacement for normal food at least if the child is able to eat. If the child with diarrhoea is fed for several days on nothing but the parent's choice of home available fluid its diet is likely to be very poor. Children would be better off with ORS plus good food.

The only problem with promoting ORS at the expense of home available fluids and SSS is that there will always be some areas where it is hard to get, or times when it is in scarce supply. It is important for some people in the community to have backup knowledge of the best home available fluids, how to use them and of SSS.

The neighbourhood ORS expert may not be the best person to keep the SSS recipe or recipes for home available fluids since she may not be literate, but the chemical sellers, village health workers and school teachers should have a copy of the oral re-hydration leaflet.

### (v) Distribution Considerations

The challenge of the distribution strategy is to make ORS as widely available as possible at the advertised price or close to it. The fact that selling at the advertised price involves a relatively low profit margin, and that the market distribution system quickly generates cartels aimed at preventing the kind of competition that might otherwise depress prices, are the obstacles that the distribution programme will have to overcome.

If the product is restricted in points of sale to chemical sellers and pharmacies then the operation of price raising cartels is easy. Such practices are already in operation with GSPM contraceptives, and are probably unavoidable given the controversial social nature of the product which restrict marketing methods. The only way to fight the cartels is to combine a constant and sufficient supply with permanent availability to the consumer at the advertised price at certain well known points. A constant supply to retailers but no place where consumers can rely on obtaining the product at the advertised price is no guarantee against price raising cartels.

Examples are available in the vegetable trade of how cartels operate to limit the flow of goods into the cities in order that profit margins can be maintained and competition limited. Tomato bulk buyers for instance organise themselves such that they never buy as much as the producers have for sale, and never compete for produce, thus ensuring that they are always purchasing in a buyers market and can call their prices. At the distribution end the reverse pertains; by purchasing a limited amount the wholesalers have ensured a measure of scarcity in the city which augments the profit margins of wholesalers and retailers and is does not reflect farm-gate levels of availability.

The tomato example should give pointers to the way in which a highly available, low profit margin product like ORS is likely to be handled by distributors. They will buy small quantities and sell above the advertised price perhaps telling customers that the product is scarce and that they were obliged to buy from a middleman. To prevent this development permanent retail points are needed where so long as the product is coming out of the factory in sufficient quantity consumers can be sure of getting it at the advertised price. Such retail points are available in the form of the chain department stores.

A look at the relationship between, soap, the department stores and the general market illustrates the way in which so long as the supply is constant the stores operate as price depressants.

When supply is constant brand name soap is always available in the stores at the FIB price or even lower. In the market the product is available at a slightly higher price, but traders still make sales because it is a more convenient point of purchase for many consumers. They dare not raise prices above a

certain level however or consumers will find it worth their while to make a trip to the department store.

When the supply of soap goes down traders flock to the department stores and buy up what is left and then re-sell at inflated prices in the market. This situation of a measure of scarcity is what they prefer since unlike the department stores they can never make as much profit through high turnover as through scarcity and high profit margins.

If ORS were carried by the big department stores and sold there at the advertised price it would be subject to the same market forces as soap. Like soap it could also be available at market stalls where those non-literate consumers who do not regularly frequent chemical sellers stores have much better access to it. These are the non-literate villagers who come into the towns on market days.

It is on the local medicine stall that ORS has a place in the market. Here non-persihable local medicines are sold alongside spices, traditional cosmetics, razor blades, safety pins etc. The price to the consumer would be a bit higher than the advertised price, but as with soap consumers accept that having the item available in the market is a convenience and that market traders operate on lower turnover and higher profit margin than the stores.

Outside the market-place and accessible to urban dwellers nearer to their homes and for longer hours is the roadside table or kiosk. Here, sweets, matches, torch batteries, soap, packaged groceries and the like are sold sometimes in smaller units and always at higher prices than in the market. For here convenience to the consumer is greater and turnover smaller. Like the medicine stall in the market the roadside kiosk or table carries a range of items of long shelf life that people tend to have need of or run short of from time to time and are then prepared to pay the relatively high prices charged.

Making ORS available at different kinds of retail outlets aids both price control and makes it accessible to a wide range of consumers.