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GAMBIAN MOTHERS' UNDERSTANDING OF  
DIARRHEAL DISEASE AND THE USE OF ORAL  
REHYDRATION SOLUTION

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## EXECUTIVE SUMMARY

This summary reports the major findings of a one-month consultancy in The Gambia undertaken to explore mothers' understanding of diarrheal disease and the current status of ORS skills.

All of the sixty mothers interviewed knew about ORS, and all but 13 knew that it was health-related. One in five knew the correct formula and one in four knew selected elements of the solution's proper administration. One in..... had used ORS for treating their most recent case of children's diarrhea.

The majority of mothers believed that the function of ORS was to stop diarrhea and only four mothers mentioned rehydration as a goal of treatment.

Three areas are isolated which seem to be bottlenecks for the adoption of ORS. Mothers' diagnostic procedures, misunderstandings concerning the rehydration/dehydration issue, and lack of resources needed to make ORS.

Recommendations are made to ease these problems:

1. Create messages which specifically include types of diarrhea which mothers diagnose as not needing treatment or as untreatable by modern medicine.

2. Approach the rehydration issue either through changing the language in the campaign or by encouraging mothers to pursue an established practice of giving extra fluids during certain illnesses.

3. Encourage fathers to provide money to mothers to purchase the ingredients for ORS and supply the VHWs with these supplies to loan or sell to mothers at reduced prices.

## DESCRIPTION OF RESEARCH

### Background to Study

From 1981 to 1984, The Gambia was the site of concentrated, innovative diarrheal disease control program. Under a United States Agency for International Development (USAID) contract, this work was undertaken as a collaboration between the Department of Medical and Health in the Ministry of Health, Labour, and Social Welfare of the Gambian government and the Academy for Educational Development (Washington DC). A major component of this program emphasized training health personnel and mothers in the proper administration of Oral Rehydration Solution (ORS). A vigorous mass media campaign co-ordinated the activities. The project was closely monitored by an evaluation team from Stanford University's Institute for Communication Research and Food Research Institute and by Applied Communication Technology (Menlo Park, California).

The evaluation results were presented at a meeting in Banjul, Gambia in September, 1985. The evaluation demonstrated the campaign's success by showing that 70% of the mothers had learned the correct formula and 50% had begun to use the solution to treat their childrens diarrhea.

Since the campaign's completion, The Gambian government has maintained diarrheal disease control efforts, but at a reduced level. They have continued to distribute flyers depicting instructions for mixing and administering ORS. to broadcast regular but less frequent radio messages, to train

health personnel, and to mount some modest research efforts to monitor the status of health workers' understanding of ORS.

At the presentation of the evaluation results, interest was expressed in reinstating a more vigorous diarrheal disease control program. The evaluation, however, had raised several issues which officials wanted explored before proceeding. These issues included: mothers' understanding of dehydration and rehydration, their apparent fixation on diarrhea cessation and their possible disappointment in this regard, and the current state of mothers' ORS mixing and administration skills.

Further concerns were voiced over the status of health workers' knowledge of the proper use of ORS. A separate study is being conducted on this issue.

In an effort to answer these questions concerning mothers' understanding and use of ORS, PRITECH (Washington DC) supported a one-month consultancy to design and carry-out an in-depth, qualitative study. This report describes the study, states its findings, and makes recommendations for further diarrheal disease control efforts.

## Sampling

In consultation with officials at the country's three regional health headquarters, the research team chose six villages and one peri-urban area for in-depth interviews. In each rural area, the team worked in two villages chosen for contrast in their relative ease of access to health facilities for mothers. All of the villages selected were part of the Primary Health Care System. The overall sample maintained a roughly proportional representation of the country's four largest tribal groups: Mandinka, Fula, Wollof, and Serahule. In each region the team also interviewed Community Health Nurses (CHN), Village Health Workers (VHW), Traditional Birth Attendants (TBA) and herbalists. In total the team spoke with 60 mothers, 6 CHNs, 6 VHWs, 6 TBAs and 6 herbalists. (One of the early interviews with a mother was excluded from analysis because of several ambiguities in the responses. The report is based on the remaining 59 interviews).

In each village, using a random selection procedure, researchers selected seven or eight mothers with children under five. The Serahule village diverged from this sampling procedure. Due to language limitations, the interviewers were obliged to select only Serahule mothers who spoke Fula or Mandinka. Based on conversations with Banjul health officials, the team learned of no specific bias that this selection procedure may have created. The interviewers visited each village twice so that they could apply information gathered in earlier interviews, allowing them to

check the distribution of important terms and practices.

#### Methodology

The study used an approach combining in-depth, open-ended interviewing and some observations. The interviewers were encouraged to spend time talking to the mothers and to probe answers when necessary in an effort to develop as full a picture as possible of a mother's understanding of diarrheal disease.

The interviewers introduced themselves as women who were interested in childcare. They said that they wanted to talk to mothers about illnesses that their children get and the ways that the mothers treat these illnesses. The interviewers stressed that they were not doctors or nurses and that they were there to learn from the mothers. They assured the mothers that after the mothers had told them what they knew, the interviewers, in turn, would be glad to answer the mothers' questions.

The interviews lasted between 45 minutes and one hour. Every evening the team discussed each completed interview, question by question. The interviewers were encouraged to assess the mothers' responses based on their own observations of activities in the compound and conversations which took place outside of the formal interview. On the basis of team discussions, several new questions were added as the study progressed.

The first half of the interview focussed on eliciting mothers' understanding of diarrheal disease. (See Appendix one for a copy of the questionnaire). Interviewers led

mothers to this topic through a general discussion of children's illnesses. Interviewers then returned for a more detailed discussion to instances when mothers had named diarrhea as an illness or as a symptom of an illness. This section included a description of the diarrheal illnesses, their possible causes, and treatments. Through this line of questioning, interviewers obtained a list of different types of diarrheal illnesses and mothers' range of treatments including herbal solutions, clinic medicines, and ORS.

To understand how mothers chose among different treatments, the interviewers then asked the mother to review the most recent children's diarrheal case they had treated. Here the interviewers tried to learn which factors influence mothers' treatment choice including diagnosis, treatment goal, and material resources.

The interview then shifted to an inquiry into the mother's understanding of the effects of diarrhea, specifically dehydration. The primary intention of this section was to test the Wolcott and Mandinka terms for dehydration used by the Mass Media for Health Practices campaign. The researchers wanted to discover the degree to which the local terms overlapped with a medical notion of dehydration. Further questions inquired into any instance when a mother felt that she should give her child extra fluids.

The interview concluded with a set of straight-forward questions about mother's knowledge of ORS mixing and administration procedures and the diet for diarrhea.

Interviewers instructed mothers who gave incorrect answers in this last section.

## DIARRHEAL TREATMENTS

### Overview of Treatment Practices for Diarrheal Illnesses

All of the mothers interviewed listed diarrheal illnesses as one of their children's health problems. Mothers perceived diarrhea as a potential threat to the child's health because it caused the child to lose weight and become listless. Four mothers mentioned that diarrhea could kill a child. The mothers described a variety of responses to diarrheal diseases ranging from not treating them at all to treatments which combined herbal solutions, clinic medicines, and purchased capsules.

Mothers mentioning not treating a child's diarrhea explained this decision with the following reasons. Two mothers thought diarrhea could benefit the child by cleansing his system. Four mothers believed that diarrhea accompanying teething was normal and did not warrant treatment. Two other mothers explained that they were not treating a current case of children's diarrhea because they were tired of treating their children's diarrhea and they believed that it would go away on its own.

Except in these cases, mothers interviewed reported that they did treat children's diarrheal illnesses as soon as they ascertained that the child was in fact ill. Determining that

the child was ill required a period of observation. Few mothers could specify the length of this period, but one mother commented it lasted "until I really know the child has diarrhea". Observations focused on stool frequency (3-5 was the most common frequency cited as constituting diarrhea), appearance (presence of blood or mucous were most often cited as signifying serious health threats), and any accompanying symptoms such as fever or vomiting. Unfortunately mothers did not articulate more precisely their approach to judging severity.

When a mother decides to treat, she must choose among several options available to her from both the modern and traditional sectors. To trace the pattern of choices between these options, interviewers asked mothers to recount how they had treated the most recent case of children's diarrhea.

Four mothers could not recall a recent case they had treated. Of those who could, the most common treatment cited was herbal solutions with 29 (49%) giving this answer. Twenty-seven mothers (43%) responded that they had used clinic treatments (other than ORS). Sixteen mothers (27%) reported using ORS made by themselves, a VHW, or from a clinic-given UNICEF packet. Eliminating the urban sample, this last number drops to 8 mothers (17% of the rural sample). Three mothers (two rural, one rural) reported treating with unidentified, purchased capsules.

These figures do not add up to 59 because 16 mothers used multiple treatments. Ten mothers reported using herbal and clinic treatments or ORS together, believing they worked

better in combination. The remaining mothers switched from one mode of treatment to another (most commonly herbal to modern) when the first proved ineffective in stopping the child's diarrhea. Mothers who switched treatments did so after waiting two to three days.

Data from the most recent case question show that one in four women used herbal and clinic treatments together or serially. (See Appendix two for more information about the herbal treatments used). Information from other sections of the interview indicate that this behavior is probably more widespread when considered over several treatment events. Rural women especially appear to alternate between these two treatment modalities until the diarrhea stops.

Use of ORS and purchased drugs are less established as part of diarrheal treatment patterns. Based on later questions about purchased drugs, the interviewers learned that the majority of women do not believe that these drugs can help a child with diarrhea. They do use them, however, for other illnesses. ORS, on the other hand, is believed to be an appropriate diarrheal treatment, but some women question its effectiveness and other women cite specific obstacles which prohibit them from using it. Before exploring these obstacles, the report will review the status of mothers' ORS skills.

### Current Knowledge Concerning ORS Mixing, Administration and Function

Mixing skill refers to mothers' correct knowledge of the ORS formula which in The Gambia is eight Julpearl caps of sugar, to one cap of salt, to a liter (or three Julpearl bottles) of water. Mothers answers were coded as "correct" if all three amounts were correctly stated, as "partially correct" if two of the three amounts were given correctly, and as "incorrect" or "doesn't know" in all other cases. (See Appendix 3 for more detailed analysis of the range of formulas given). "Doesn't know" is a category distinct from "incorrect" because sometimes a mother who didn't know the formula said that she still used ORS by having a neighbor or VHW mix it for her.

Of the 59 mothers interviewed, 13 (22%) gave correct responses, 12 (20%) gave partially correct responses, 19 (32%) gave incorrect responses, and the remaining 15 (25%) said they didn't know or had forgotten the formula.

Eliminating the urban segment of the sample produced lower scores. Of rural mothers, 7 (16%) gave correct responses, 9 (20%) gave partially correct, and 17 (38%) gave incorrect responses. The remaining 12 (25%) said that they did not know or had forgotten the formula.

Administration skills reported on here include the knowledge of how often and how much to give the solution and often to make a fresh batch. For the amount, several variations of "as much as the child will take" were counted as correct, as was the more complicated procedure of

proportioning the amount given to the child's age. Answers mentioning other amounts which included the idea of repetition throughout the day were coded as "partially correct". All other answers were coded as "incorrect".

Of the 59 mothers interviewed, 16 (27%) gave correct answers, 8 (13%) gave partially correct, and remaining 35 (59%) gave incorrect responses.

If the urban mothers are eliminated from this sample, the figures experience a drop similar to that seen for the mixing skills. Of rural mothers 8 (18%) gave correct responses, 7 (14%) gave partially correct, and the remaining 30 (67%) gave incorrect responses.

Most mothers knew how often to make a fresh batch of ORS. Thirty-six mothers (61%) gave the correct response, "every day". Fifteen mothers (25%) said they did not know. Five (8%) said one should make a new batch when the bottle was used up, and the remaining three (5%) gave other responses. Eliminating the peri-urban sample from this computation makes little difference.

The final point to consider is how many mothers understood the function of ORS. Of the 59 mothers interviewed, five (8%) stated that its function was to rehydrate a child suffering from diarrhea. Forty (67%) said that its purpose was to stop diarrhea, although four of these answers were difficult to interpret. Nine mothers (15%) listed other functions for ORS and the remaining five (8%) said that they did not know what it was for. Three of the five mothers stating the correct function of ORS were from

the urban sample.

Combining all elements of ORS use creates a more stringent test of mothers' knowledge. Such an exercise is useful to gain a preliminary sense of the possible impact ORS may be having on children's health. Eight mothers (seven from the urban sample and one from the rural sample) gave correct answers on both the mixing and administration questions. Adding the requirement that mothers know how often to make the solution decreases the number getting all answers correct to six (all urban).

Slightly less than one in four mothers reported having used ORS for their most recent case. One in five are able to give the correct formula and one in four know how to administer it. These figures may be related insofar as the drop in use leads to a drop in skills. Several mothers told us that they had forgotten how to mix and administer ORS because they had not used it in a long time. The lack of ongoing campaign messages also has decreased the opportunity for learning and reinforcing the messages.

#### TREATMENT SELECTION

ORS adoption is a difficult process. It requires not only accepting a new treatment, but also learning a new treatment method (precise measuring and steady, rather than periodic, administration), a new treatment goal (rehydration, in contrast to diarrheal cessation), and in home-mixing

events, new treatment ingredients (purchased, rather than free, items).

The data demonstrate that some women, most notably the urban dwellers, have begun to master and practice these new skills and have adopted ORS as a preferred treatment in spite of decreased campaign messages. This is a noteworthy achievement. The challenge now is to understand the roadblocks inhibiting the majority of women from following suit and devising strategies to eliminate or circumvent these problems.

Analysis of mother's treatment process will provide a focus for this discussion reviewing the process of diagnosis, treatment goals, and material conditions influencing treatment choice. Where the data indicate, suggestions will be made concerning specific campaign message.

### Diagnosis

The diagnostic process begins as soon as a mother notices her child has loose stools. Then the mother must decide whether this is a problem which warrants treatment and, for some mothers, whether this is one of several types of diarrhea which can only be treated by herbal medicines.

One-third of the rural mothers (and none of the urban mothers) listed diarrheal illnesses which by definition could not be helped by any form of modern medicine. These answers concentrated among the Fula and the Mandinka. Only one rural Wollof offered such an answer and none of the Serahule or

urban mothers did so.

There are two possible explanations for this pattern. Most of the Wollof mothers interviewed were from the urban sample. This belief about diarrheas which can only be treated by herbal solutions may be more common in the rural areas. The Serahule mothers were not interviewed in Serahule and as a group offered fewer types of diarrhea. Their limited answers may be attributable to a reticence caused by a language problem. Further research with both of these groups may demonstrate that beliefs about these types of diarrhea are held by all of the major tribal groups.

There was little agreement among the mothers who did mention these diarrheas about their identity or cause, except in one instance. Six mothers mentioned a type of diarrhea, yakango, which their children could contract if the mother permitted the blanket with which she secures the child on her back to catch fire as she leaned over the cooking fire. The herbal treatment for this type of diarrhea must be given to all the children in the village, for one mother's carelessness makes all of the children vulnerable.

This diarrhea may be similar to one reported informally in another study which the mothers associate with house fires common during the rainy season. This type of diarrhea is considered seriously dehydrating. If the two types are in fact the same, and are seriously dehydrating, mothers' beliefs that this type diarrhea can only be treated with herbal solutions is particularly worrisome.

**Recommendation:**

Even if these beliefs are found only among the Fula and Mandinka, the findings are sufficient to warrant the inclusion in new campaign messages of a reference to types of diarrhea thought untreatable by modern medicine. The messages should recognize the existence of these diarrheas, and mothers should be encouraged to use ORS for all diarrheal illnesses. Recognizing the strength of beliefs in herabl treatments, the message might specify ORS use in addition to herbal treatments. Mothers may perceive the explicit mention of herbal treatments, however, as a sanction or recommendation.

**Goal of Diarrheal Illness Treatment: Diarrheal Cessation or Rehydration**

Four mothers (equal numbers from the rural and urban sample) were clear that diarrhea dehydrates a child and that treatment for diarrhea should include rehydration. Three of these mothers understood that ORS's function was rehydration and two of these chose ORS for treating their most recent case of children's diarrhea. The one who did not attributed her lapse to a lack of sugar.

This finding, although extremely limited by the small sample size, seems to indicate that proper understanding of the function of ORS leads to its use. Few women, however, understood the concept of rehydration as presented by the MMHP campaign. Most women in the sample believe that the

harmful effects of diarrhea are loss of strength and appetite, and listlessness. Many mothers attributed this loss of strength to weight loss they believed was caused by the diarrhea. Beneficial treatments based on these beliefs included those which could stop diarrhea and those which could help the child gain weight.

Interviewers found eight women who said that they had stopped using ORS because of a disappointment with its ability to stop diarrhea. Not all of the women who hold the goal of diarrheal cessation, however, are disenchanted with ORS. Some believe ORS has stopped their children's diarrhea.

This section first will explore why mothers continue to have diarrheal cessation as a goal, and then address the question of why the campaign's attempt to teach the mothers about rehydration experienced only limited success. It will conclude by making alternate suggestions about how to approach the rehydration issue.

Mothers' fixation with diarrheal cessation seems to come from their identification of symptom with disease. The Gambian mothers interviewed believed that when the symptom was alleviated, so was the disease. This belief contrasts with the medical model which sees the symptom as a sign of an underlying disorder. A shift or disappearance of symptoms does not necessarily signify a cure. The empirical experience of Gambian mothers bears out their perception that stopping the diarrhea is curing the disease.

According to one study done near Banjul in the early 1980s, children under the age of two experience 7.3 episodes

1.  
of diarrhea each year. Therefore in most cases the child is treated, the diarrhea stops, and the child recovers. As most diarrheas are self-limiting, the treatments themselves are not responsible for the cessation, but they appear to be. The inference is that recovery is based on stopping the diarrhea.

Even though some children do die during a diarrheal episode, it seems that these events either are not frequent enough to provide a sense of the complexities of the disease, or perhaps mothers attribute the death to other causes. Whatever the explanation, based on empirical experience mothers, the goal of diarrheal cessation is a logical one.

This reasoning does not explain, however, precisely why the MMHP's campaign efforts to convey the necessity of rehydrating the child ran into difficulties. A further problem with the rehydration/dehydration issue appears to reside in the terms chosen to represent these concepts.

The MMHP campaign chose the terms labarra (Mandinka) and lappa (Wollof) to mean dehydration which translate roughly as dryness or thinness. In some sense these campaign messages were successful because a 80% of women offered lappa or labarra (or the Fula equivalent) as an effect of diarrhea, and when asked directly if diarrhea could cause lappa or labarra, 90% answered yes.

Unfortunately the local terms, although carefully chosen, did not convey to mothers a medical sense of dehydration. Interviewers tested these terms specifically with the Wollof and Mandinka mothers. Interviewers asked

mothers to describe the effects of lappa or labarra and, if possible, to show these effects to the interviewer by presenting a child in the compound who suffered from lappa or labarra. The effects which the mothers most often named or indicated in a child were weight loss, listlessness, and sunken eyes.

Although these signs could be effects of diarrheal dehydration, this inference is not borne out by the cures which mothers cite when asked how to treat a child suffering from lappa or labarra. Of the 35 Wollof and Mandinka mothers interviewed, 32 answered that a better diet would help such a child (ten of these women also suggested taking the child to clinic), two additional mothers gave answers citing the clinic alone, and two mothers said the child should be given ORS. One mother mentioned giving the child extra fruit juice, if possible. These answers demonstrate that mothers seem to interpret lappa and labarra as a form of malnutrition rather than dehydration. The 12 responses mentioning clinic attendance are difficult to interpret because it may be that mothers expected ORS treatment from the clinic. Unfortunately, interviewers did not ask mothers to explain what they meant by clinic treatment.

The mothers understand the lappa and labarra are effects of diarrhea, but they do not understand that rehydration is their cure. Better diet can be an effective treatment for diarrhea, but if health personnel want to establish rehydration with ORS as the preferred diarrheal treatment another approach must be taken.

**Recommendation:**

There are two approaches which can be taken toward ameliorating this problem. The first is to reconsider the choice of terms using a linguist familiar with Wollof, Mandinka, and English. A better term may exist, perhaps something associated with the idea of drought. Changing the terms during the campaign may create confusion and this decision should be carefully weighed.

It is also possible the terms chosen are the best ones in which case a new strategy is called for. Researchers explored associating the practice of giving liquids with other activities, circumventing the idea of rehydration. During the interviews, mothers were asked whether there were any illnesses for which she should her child extra fluids. Thirty-five mothers said yes, and listed diarrhea (19) and fever (17) most often as illnesses for which a mother should give extra fluids. When asked why children should get extra fluids during these illnesses most mothers had no answer, but several offered that the child was thirsty, especially those mothers who listed diarrhea and fever together in the answer to the initial question. This idea of thirst could provide the basis for messages convincing the mother to give her child ORS. It should be noted that two-thirds of the mothers answering affirmatively about the existence of illnesses which required giving the child extra fluids did not make what may seem an obvious connection: that ORS is a fluid

which could quench this thirst associated with illness. A message might try to make this clear.

#### Material Conditions Influencing ORS-Use

The interview data indicated two sets of obstacles interfering with mothers' adoption of ORS which were created by limited material resources. The first and more general concerns the problems experienced by mothers who have a difficult time getting to clinics. The second specifically concerns the availability of materials to make home-based ORS.

Because many mothers have forgotten how to make the formula, they rely on visits to the VHW or the clinic for instruction. For some reason, however, women in this category did not see the VHW as the preferred source of information for ORS. For these women, then, a visit to the clinic was a necessary pre-condition to ORS-use.

This situation explains, in part, why the data demonstrate lower ORS use among women living far from the clinic. In the rural sample, of the 23 women living in villages designated as having difficult access to clinics, two-thirds chose herbal treatments and one-third chose clinic based treatments. Of the women choosing traditional treatments, ten explicitly offered the reason that the clinic was too far away to go to for treatment. Of these, five explained that they lacked the money for taxi fare.

In contrast, of the mothers living in villages with easy

access to clinics, just under two-thirds chose the clinic for treatment and the rest chose herbal treatments or purchased drugs. Of the women in this group choosing herbal treatments none cited distance from the clinic as an explanation of why they made this choice. Instead they cited tradition or lack of time to go the clinic.

Based on this data, it seems that clinic proximity influences mothers treatment choice. In other segments of the interview, clinic proximity appeared to influence the mother, not just in the ease of getting to the clinic, but also by leading her to believe that the clinic was a better place to get treatment. There are no particular recommendations based on these findings. They are offered to provide some explanation about ORS-use patterns.

The second finding concerning access to resources derives from two sections of the interview: comments made during the discussion concerning why mothers had chosen a particular treatment and in later questions inquiring about the availability of the ingredients needed for ORS. These materials include sugar, salt, and bottles. Getting water is apparently no problem.

Within this sample, sugar was the most difficult ingredient to secure. Nineteen, nearly half of the rural mothers, complained they often do not have the money to purchase sugar. For the overall sample this dropped to one-third. Salt and bottles were mentioned as difficult to obtain by one in five mothers in the total sample and one in four in the rural sample. Since the end of the campaign,

store owners have begun to charge a deposit for bottles making their acquisition more difficult.

**Recommendations:**

The research findings suggest two possible strategies for alleviating these resource problems. Typically mothers do not have the money to purchase sugar, salt or bottles, nor the money for taxi fare to go to the clinic. They must rely on their husbands for these funds. Several mothers mentioned that their husbands would not give them money because they claimed not to have it, or because they preferred to have the child treated with an herbal treatment. Perhaps a message could be devised targeting fathers and asking them to support the mothers in ORS activity. Such message might also include a statement about helping mothers with the administration of ORS as this was cited by several mothers as a burden on their already over-crowded schedules.

Another approach, already used in one of the sample villages, is to supply the VHW with bottles that can be lent for mixing the solution, and with sugar and salt that can be sold at a reduced price.

## Footnotes

1. Rowland, MGM.  
"Epidemiological Aspects of Rotovirus Infection in Young Gambian Children," Annals of Tropical Pediatric Medicine. 5:23-28. 1985.

APPENDIX ONE  
QUESTIONNAIRE CONCERNING MOTHERS' BELIEFS AND PRACTICES  
FOR DIARRHEAL ILLNESS TREATMENTS

# \_\_\_\_\_  
Village \_\_\_\_\_  
Tribe \_\_\_\_\_  
Date \_\_\_\_\_  
Interviewer \_\_\_\_\_

1. Can you please tell me about the different illnesses that your children get?  
(Note those illnesses which are diarrhea or which have diarrhea as a symptom).

2. For each of the illnesses noted above, ask:

- a. Why do children get this type of diarrheal illness?
- b. How do you know when a child has this type of diarrheal illness?

(Enter the answers from these questions on Chart #1).

3. For each diarrheal illness mentioned, ask:

a. Can an herbalist treat \_\_\_\_\_?

\_\_\_\_\_yes

\_\_\_\_\_no  
(go to q. 4)

If the answer is yes, ask:

b. What is the name of this treatment?

c. How is this treatment made?

d. How is this treatment administered?

e. What are the effects of this treatment?

(Enter the answers from these questions on  
Chart #2)

f. What is the charge for these treatments?

4. For each diarrheal illnesses mentioned, ask:

a. Can you treat \_\_\_\_\_ yourself at home?

\_\_\_\_\_yes

\_\_\_\_\_no  
(go to q. 5)

If the answer is yes, ask:

b. What is the name of the treatment?

c. How is this treatment made?

d. How is this treatment administered?

e. What are the effects of this treatment?

(Enter the answers from these questions on Chart #3)

5. For each of the types of diarrhea mentioned, ask the mother:

a. Can the clinic/VHW treat \_\_\_\_\_?

\_\_\_\_\_yes

\_\_\_\_\_no  
(go to q. 6)

If the answer is yes, ask:

b. What is the name of this treatment?

c. How is this treatment made?

d. How is this treatment administered?

e. What are the effects of this treatment?

(Enter the answers to these questions on Chart #4).

6. I would like to talk to you now about the most recent case of diarrheal illness you have treated for one of your children under the age of five.

a. Which child was ill?

Record:

\_\_\_\_\_age in months      \_\_\_\_\_sex

b. When did it happen?

\_\_\_\_\_record in months/weeks

c. What type of diarrheal illness was it?

d. How long did you wait before treating the diarrheal illness?

e. What was the first treatment that you tried?

f. Where did you get it?

g. How did you administer this treatment?

h. How did you choose this treatment?

i. What happened after you gave this treatment?

(If the mother answers that she tried another treatment, record why she decided to do this and then repeat questions E through I covering all treatments used).

e.

f.

g.

7. How does diarrhea harm the child?

(If mother mentions dryness, go to C.  
If not, go to B).

b. Does diarrhea cause dryness?

c. How can you tell when a child has dryness?

d. Can you show me a child in this compound now who has dryness?

(If yes, go to E. If no, go to F.)

e. Can you describe what you see in this child that makes you think he has dryness?

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f. Are there other illnesses that cause dryness?

g. Why is dryness bad for a child?

h. What can you do to help a child when he/she has dryness?

i. Are there any illnesses during which you should give your child extra fluids?

8. Have you ever heard of a medicine made with water, sugar and salt?

\_\_\_\_\_yes

\_\_\_\_\_no  
(go to q. 9)

b. What is ORS for?

c. How do you make ORS?

d. How often do you give ORS to the child?

e. How much do you give each time?

f. How often do you make a fresh batch?

g. Are the materials easily available?

Sugar \_\_\_\_\_

Salt \_\_\_\_\_

Bottles \_\_\_\_\_

h. Where did you hear about ORS?

9. Do you feed your child differently during or after  
an episode of diarrhea?

\_\_\_\_\_yes

\_\_\_\_\_no

(If yes, ask the mother  
to explain)

(go to q. 10)

10. Have you ever purchased drugs from a drug-seller to give to your child during an episode of diarrhea?

\_\_\_\_\_yes

(go to B)

\_\_\_\_\_no

(end of interview)

- b. In what situations have you given these drugs to your child?

- c. Can you describe these drugs?

- d. How much did you spend for these drugs?

- e. What was the effect of this treatment?

CHART II  
TYPES OF DIARRHOEA

	TYPE	CAUSE	SYMPTOMS	NOTES
1.				
2.				
3.				
4.				
5.				

297A

CHART #2  
HERBALIST TREATMENTS

TYPE / NAME		HOW IS TREATMENT MADE	ADMINISTERED	EFFECTS	NOTES
1	Of Diarrhoea / Of Medicine				
2					
3					
4					

1/1/60

CHART #3  
MOTHER'S TREATMENTS

1/2/61

TYPE /	NAME	HOW IS TREATMENT MADE	ADMINISTERED	EFFECTS	NOTES
Of Diarrhoea	Of Medicine				

CHART 114  
CLINIC TREATMENTS

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TYPE	NAME	HOW IS TREATMENT MADE	ADMINISTERED	EFFECTS	NOTES
OF Diarrhoea	OF Medicine				

### APPENDIX THREE

#### HERBAL TREATMENTS

The mothers interviewed frequently used herbal treatments for their children's illnesses. Half the mothers reported using herbal solutions for their child's last case of diarrheal illness and all but ten mothers reported using herbal solutions some time in the past. Eight of these non-users were from the urban sample. Herbal treatments remains the preferred treatment for many rural mothers.

The research explored herbal treatments by interviewing both mothers and herbalists on the topic. Interviewers made no attempt to distinguish types of herbalists beyond the fact that they treated childrens' diarrheal illnesses. Any future work on the nature of herbal treatments should take care to map out the organization of different types of herbalists in The Gambia.

Six herbalists were interviewed, one in each village visited, except for one very small village which had no resident herbalist. Interviewers made up for this by interviewing three herbalists in one of the larger villages.

Herbalists evaluated diarrheal diseases in much the same way mothers had described: stool frequency, color, appearance and accompanying symptoms, but some added the necessity of discovering whether witchcraft had been committed against the child. The intention of all herbalist

treatment for diarrhea is to stop it. They believe that their medicines are successful at this within a few hours or at most two days. If the diarrhea does not stop, it is not the fault of the treatment, but a mismatch between the healer and the patient and the patient is encouraged to try another healer. Mothers share this explanation for failures in herbal treatments and it is important for understanding the persistence of herbal treatments in the face of frequent failures. The mother continues to visit different herbalists in search of the right match. Eventually the diarrhea stops and this cessation coincides with one the herbal treatments. This experience confirms the efficacy of the herbal treatments.

The herbal treatments are made either by the herablist or the mother and generally consist of leaves, roots, or bark soaked in water which is administered to the child either orally or by washing his body in the solution. Occasionally secret phrases are recited during the treatment. Mothers do not usually pay for these treatments, beyond perhaps some rice or peanuts. Herbalists are willing to train mothers in the treatments (except for the secret phrases) so that they may perform them at home.

Mothers who make the treatment at home, or are given extra solution to take home with them, usually administer the solution three times a day, in amounts varying from one teaspoon, to one cup, to as much as the child will take. Sometimes this solution is administered to the exclusion of all other liquids, though this is not common.

Contrary to ideas suggested in a recent report, administration of these solutions should not be equated with rehydration. The amount given varies too much to make any such generalization.

Of the six herbalists interviewed, all but one had heard of ORS and three knew that it was a treatment for diarrhea. Only one had tried it. This man had learned of ORS over the radio and encouraged his wife to make it when she had diarrhea. He had never tried it for any of the children he had treated, but was very positive about the possible benefits of this treatment.

According to interviewers, two of the other herbalists were interested in learning how to make ORS. Moreover, two of the TBAs interviewed were also herbalists and had already integrated ORS into their treatment repertory. They also continued to administer herbal treatments for diarrheal illnesses. These findings indicate that some herbalists are open to learning about ORS and perhaps this openness should be taken advantage of.

## APPENDIX THREE

## ORS FORMULAS

This is a preliminary effort to gauge the possible toxicity of incorrect ORS formulas offered by mothers. Assuming that toxicity is created by an uneven balance of salt to water, the following list includes all those formulas possibly in the danger zone. Further information about the range of salt amounts acceptable is necessary to determine precisely which formulas are toxic.

	<u>Sugar</u>	<u>Salt</u>	<u>Water</u>
1.	3 t.	1 1/2 t.	2 liters
2.	7 T.	1 T	1 cup
3.	1 t.	1 t.	1/2 bottle
4.	1 t.	1 t.	1/2 bottle
5.	7 cubes	1 t.	1 cup
6.	3 caps	1 t.	2 bottles
7.	1 T.	1 T.	1 bottle

8.	1 cap	1 cap	1 bottle
9.	8 caps	2 caps	2 bottles
10.	4 caps	4 caps	3 bottles
11.	3 caps	1 cap	doesn't know
12.	3 caps	1 cap	1 bottle
13.	8 caps	1 cap	2 bottles
14.	8 caps	1 cap	1 bottle
15.	3 caps	3 caps	1 bottle
16.	1 cap	3 caps	1 bottle