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REVIEW BOARD ON THE USE OF HUMAN VOLUNTEERS
CRL

Date 16 Oct 78

Principal Investigator L Chen Trainee investigator (if any) B Hayes

Application No 78-27 Supporting Agency (if Non-CRL) _____

Title of study Promotion of Food Intake Project status:
Amopy Consider with Health Department
(-) New Study
() Continuation with change
() No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA):

- 1. Source of Population:
 - a) Ill subjects Yes No
 - b) Non-ill subjects Yes No
 - c) Minors or persons under guardianship Yes No
- 2. Does the study involve:
 - a) Physical risks to the subjects Yes No
 - b) Social risks Yes No
 - c) Psychological risks to subjects Yes No
 - d) Discomfort to subjects Yes No
 - e) Invasion of Privacy Yes No
 - f) Disclosure of information possibly damaging to subject or others Yes No
- 3. Does the study involve:
 - a) Use of records (hospital, medical, death, birth or other) Yes No
 - b) Use of fetal tissue or abortus Yes No
 - c) Use of organs or body fluids Yes No
- 4. Are subjects clearly informed about:
 - a) Nature and purposes of study Yes No
 - b) Procedures to be followed including alternatives used Yes No
 - c) Physical risks Yes No
 - d) Sensitive questions Yes No
 - e) Benefits to be derived Yes No
 - f) Right to refuse to participate or to withdraw from study Yes No
 - g) Confidential handling of data Yes No

- 5. Will signed consent form be required:
 - a) From subjects Yes No
 - b) From parent or guardian (if subjects are minors) Yes No
 - 6. Will precautions be taken to protect anonymity of subjects: Yes No
 - 7. Check documents being submitted herewith to Committee:
 - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies). Protocol (Required)
 - Abstract summary (Required)
 - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (REQUIRED)
 - Informed consent form for subjects
 - Informed consent form for parent or guardian
 - Procedure for maintaining confidentiality
 - Questionnaire or interview schedule *
- * If the final instrument is not completed prior to review, the following information should be included in the abstract summary:
- 1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
 - 2. Examples of the type of specific questions to be asked in the sensitive areas.
 - 3. An indication as to when the questionnaire will be presented to the Board for review.

We agree to obtain approval of the Review Board on Use of Human Volunteers for any changes involving the rights and welfare of subjects before making such change.

Principal Investigator

Trainee

Please return 2 copies of entire protocol to Chairman, Review Board on Use of Human Subjects.

SECTION I - RESEARCH PROTOCOL

- 1) Title: Promotion of Food Intake among Children with Acute Diarrhea.
- 2) Principal Investigator: L. Chen, B. Hoyle, M. Molla
and Matlab Physician (to be designated).
- 3) Starting Date: 15 October 1978
- 4) Completion Date: 31 March 1979
- 5) Total Direct Cost: \$ 7,812
- 6) Abstract Summary:

The aim of this study is to determine effective means of promoting sound dietary practices during acute watery diarrhea among children. Through intensive health education, the study would determine the level of anorexia and food withholding and, more importantly, how much of the reduced food intake may be overcome with intensive program efforts in a hospital setting. The methodology involves measuring the total 24-hour caloric and protein intake (breast milk, oral fluids, and a pretested weaning food) of 150 children aged 12-35 months admitted to the Matlab Hospital. All of the children would receive routine diarrhea therapeutic care; the children however would be divided into three groups. Mothers of children in the first group of 60 children would receive intensive education about the desirability of child feeding during diarrhea; the second group of 60 would not receive such education; and the third group would consist of 30 control children who are dependents of mothers coming to the hospital for surgical family planning services. Determining the level of anorexia and food withholding associated with acute watery diarrhea and means of overcoming reduced food intake, it is believed, should facilitate more effective interventions against both diarrhea and malnutrition.

- 7) Reviews:
 - a) Research Involving Human Subjects: _____
 - b) Research Committee: _____
 - c) Director: _____
 - d) BMRC: _____
 - e) Controller/Administrator: _____

SECTION II - RESEARCH PLAN

A. INTRODUCTION

1. Objective:

The objective of this study is to determine effective means of promoting sound dietary practices in children with acute watery diarrhea. Through intensive health education, the study aims to determine the level of anorexia and food withholding during acute diarrhea and how much of the reduced food intake may be overcome with intensive program efforts in a hospital setting.

2. Background:

The concept that infections exacerbate, precipitate and/or contribute to malnutrition, particularly among marginally nourished children, is beyond dispute^(1,2). Of the common infectious diseases of childhood, the diarrheal diseases, malaria, measles, and whooping coughs are some of the infections with clearly established negative nutritional impact.

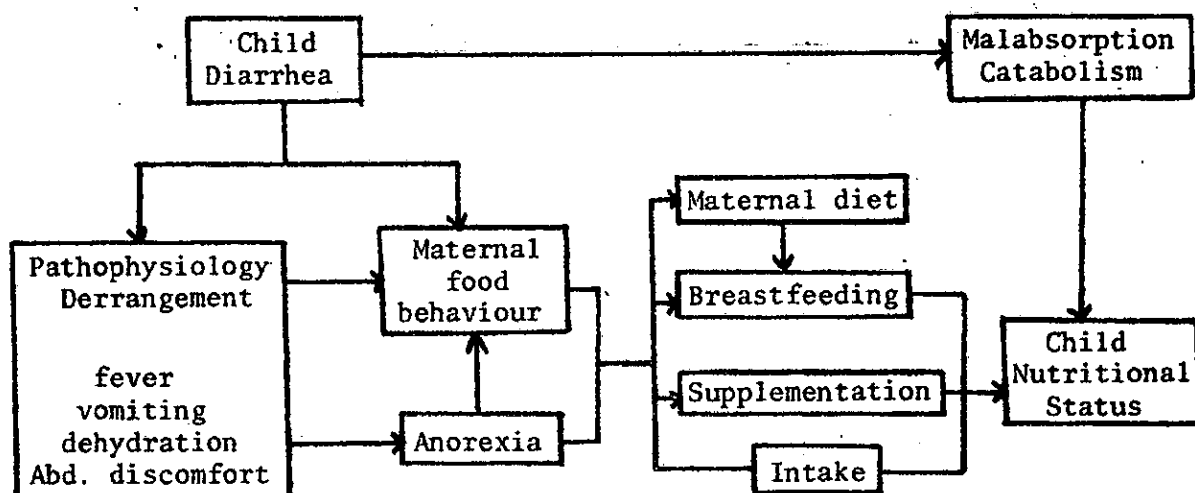
From indepth studies of Guatemalan children, Mata concluded that diarrhea was an important infectious cause of retarded growth and development^(3,4). In a longitudinal study among rural Guatemalan children, Martorell et. al. also reported significant retardation or negative growth among children due to diarrheal illness. Rowland and his colleagues in the Gambia noted from regression analysis that of all the infectious diseases, the diarrheal diseases and malaria exerted the most significant negative impact on child growth and development⁽⁶⁾. Between these two infections, diarrhea was of substantially greater importance because of its higher incidence and prevalence among nutritionally - vulnerable young children. In fact, the regression results suggest that had the retarded growth associated with the diarrheal diseases been eliminated, Gambian children would have had growth curves not substantially different from children living in well-to-do countries^(7,8).

The diarrheal diseases may precipitate or exacerbate protein-energy malnutrition among children through three possible mechanisms⁽⁹⁾. These nutrient loss pathways are reduced food intake, malabsorption, and catabolism. Reduction of food intake during illness (and possibly in convalescence) may be due to anorexia resulting from pathophysiologic derangements or to maternal food withholding behaviour or both⁽¹⁰⁾. Malabsorption of ingested nutrients may be a consequence of decreased

transit time, transient loss of enzymatic and other functional capacities of the gastrointestinal tract, and/or the administration of purgatives⁽¹¹⁾. Catabolic losses are a result of a complex set of metabolic responses to infection, some of which has been shown to be hormonally mediated. These responses include the extra energy costs of pyrexia and the breakdown of muscle and adipose tissue resulting in the excretion of the by-products in urine, stool and sweat^(12,13).

FIGURE 1

Nutrient-Loss Pathways Associated with Diarrhea in Children



These nutrient-loss pathways are diagrammatically depicted in Figure 1, which focuses on the losses associated with reduced food intake. Diarrhea in children may cause pathophysiologic derrangements - such as pyrexia, vomiting, abdominal discomfort, and/or dehydration - any or all of which may promote child anorexia or maternal food withholding. Maternal food withdrawal may be a behavioural pattern generated by traditional beliefs and practices regarding proper dietary response to or treatment of diarrhea and its various accompanying symptoms. The behaviour may also reflect maternal response to a child's appetite. Whatever the cause, the nutrient intake of the child may be compromised. Compromised intake may be due to

changes of maternal diet during diarrhea in children; this practice would presumably affect breast milk production. Breastfeeding patterns during diarrheal illness may also be changed, either by the mother or by the child. Supplemental food in partially - weaned children or food intake in completely - weaned children may be reduced. The net effect of all of these practices would be reduced food intake in children during (and perhaps after) diarrheal illness.

A normal, healthy child gains about 5-10 grams per day⁽¹⁴⁾. Fasting children may experience daily losses of 1-2 percent of their body weight⁽¹⁵⁾. The regular energy requirement of children under 5 years approximates 100 Kcal/Kg/day, and it would not be unreasonable to assume that extra energy would be needed to meet the stress of illness, fever, and malabsorptive losses⁽¹⁶⁾. On the other side of the equation, there may be some reduction of energy requirements because of reduced physical activity. Nutrition education efforts therefore should aim for a minimum consumption of 100 Kcal/Kg/day during acute illness in children.

In terms of nutritional status, the dietary pattern during convalescence and after illness may well be more important than during active disease. Research has demonstrated that children convalescing from malnutrition develop "supernormal" appetites and may gain as much as 20 grams/Kg/day^(17,18,19). "Catch-up" growth, in fact, has been shown to be as high as 15 times normal growth rates. To facilitate and promote "catch-up" growth food intake during convalescence may exceed even 150 Kcal/Kg/day⁽¹⁴⁾. Children under these "superfeeding" diets may grow at about 1 percent of their body weights daily.

3. Rationale and Significance:

In terms of child nutrition, the importance of dietary practices during and after acute diarrhea is obvious. The health impact of intervention efforts would depend upon the success of dietary programs in the homes of affected children, where most of the diarrheas take place - not in hospitals. A hospital setting however provides an environment for scientific inquiry that could affect the strategy to be employed in domiciliary programs. What are the levels of anorexia and maternal withholding in a hospital setting? Can they be overcome in a controlled environment where maternal behaviour may be susceptible to influence by hospital staff? If so, what are the best tactics? Are there some mixtures made of cheap, locally-available, and locally-acceptable foods which can be effectively used to promote child feeding during diarrhea?

Current health care dogma is that mothers should be encouraged to feed their child during diarrhea. Convalescent feedings too are encouraged. If anorexia is found to be strong and children remain resistant to feeding, even in a controlled hospital setting, it may suggest that an excessively strong program push to affect maternal behaviour during active illness may only frustrate mothers and health workers alike; attention may more properly belong to prompt and early oral hydration to reduce anorexia during illness and a shift of dietary attention to the convalescent period when appetite has returned and "catch-up" growth would be possible, if compensatory feeding were instituted.

B. SPECIFIC AIMS

The specific aims of this protocol are to determine:

1. The level of child anorexia and maternal food withholding during acute watery diarrhea in children in a hospital setting;
2. how much of the reduced food intake may be overcome with intensive health education to mothers;
3. possible differences of anorexia, withholding, and consequent food intake with diarrheas due to different etiologic agents (cholera, E.coli, and rotavirus);
4. the consumption levels of breast milk and other foods among healthy and acutely ill children;
5. the acceptability of a specially-prepared "kitchuri" food mixture (and other possible foods) for children with diarrhea.

C. METHODS AND PROCEDURES

The study design involves measuring the total 24-hour breast milk, oral fluid and weaning food consumption of 150 children ages 12-35 months hospitalized at Matlab. The children would be divided into three groups. One group of 60 would receive routine hospital care without dietary education. A second group of 60 would receive intensive dietary education in addition to routine diarrheal therapy. The third group of 30 would be healthy children who accompany their mothers for overnight stay preparatory to the mothers accepting surgical family planning services.

Selection of the study patients and initiation of the 24-hour study period would be as follows. During three 24-hour sessions weekly, a small ward room in the Matlab Hospital would be set aside for the study. The room can accommodate 6 patients simultaneously. At the beginning of

the study day (8 A.M.) 6 children ages 12-35 months would be shifted into the room for 24-hours of observation and study. Only children from VTS villages and free of major complications would be selected. Over the 24-hours study period, the children would receive routine diarrhea therapy. In addition, all nutrient intake would be recorded.

Intensive dietary education would be given every alternate week. Mothers in the education group would be told about the deleterious impact of food withholding during diarrhea. They would be encouraged to breastfeed their children and to promote the consumption of a specially prepared weaning food. The weaning food was devised by K. Brown and was successfully tested in Dacca by B. Clemens. The mixture has also been tested in Matlab, where healthy children have demonstrated adequate acceptability. Procedures for the cooking staff of the hospital to ensure the preparation of 8.5 kg of the food with constant nutrient composition per volume have been established as shown in Appendix I.

The weaning food would be served five times daily (8 AM, 11 AM, 2 PM, 5 PM, 8 PM) in plastic beakers weighing altogether 140 grams. Male field assistants would record the weight of the food consumed for each serving session.

24-hour breast milk consumption would be measured by the test weighing procedure. Mothers entering the study would be instructed to inform the worker of all breast-feeding episodes before feeding. Ad lib breastfeeding would be permitted for all children, but special encouragement would be given to the education group. The difference of child weights (in gms) before and after feeding would be assumed to reflect the intake of breast milk. Diapers would be issued to mothers and included in the child's weight to reduce the problem of urine and stool losses during breastfeeding. The Toledo hospital scale with discrimination of ± 5 gm would be used for test weighings.

Mothers may wish to give foods other than breast milk or the CRL weaning food. If so, this would be also encouraged, with the edible portion measured. Another source of nutrients is oral therapy solution, which contains 40 gms of sucrose per liter. Sucrose contains 398 calories per 100 gms; thus oral therapy contains 159 calories per liter. This source of nutrients would also need to be included in intake computations. The nutrient intake form is shown in Appendix II.

Toward the end of the study day, a female worker would complete a questionnaire on all mothers. Inquiries would be made on weaning and food practices, particularly during diarrhea. A memo on the pretest of a similar form by the principle investigators is included in Appendix III and a copy of the current questionnaire is shown in Appendix IV.

In addition to breast milk, weaning food, and other food consumption measurements, routinely collected information on diarrhea history, vital signs, clinical observations, fluid input and output, medications, etc. would be maintained. Furthermore, because the study children come from the VTS area, all would have rectal swabs for bacteriologic diagnosis of cholera, NAG, and shigella as well as ELISA assays for rotavirus. Epidemiologic studies completed in the last year suggest that the overwhelming proportion of the children with negative bacteriologic cultures and ELISA assays may be presumed to have enterotoxigenic E.coli diarrhea⁽²⁰⁾. Body weights at admission and discharge would indicate extent of dehydration on admission and presumed body mass before illness. Because of changing hydration status and brevity of time interval between measurements in the hospital, correlation of weight change in the hospital with nutrient intake would not appear to be profitable.

The analysis plan is shown diagrammatically below. By comparing the nutrient intake of the three groups, several types of conclusions are possible and may be made through deductive reasoning:

Group A
Acute Diarrhea
(Intensive Education)

<u>Intake</u>
Breast Milk
Weaning Food
Oral Fluids
Others

Group B
Acute Diarrhea
(No Education)

<u>Intake</u>
Breast Milk
Weaning Food
Oral Fluids
Others

Group C
Healthy
(No Education)

<u>Intake</u>
Breast Milk
Weaning Food
Oral Fluids
Others

Possible Outcomes

A = B = C

A > B = C

A = C > B

Probable Conclusions**

No anorexia or withholding during diarrhea (B = C). No education effect (A = B).

No anorexia or withholding during diarrhea (B = C). Supernormal intake due to education (A > C).

Some anorexia and withholding during diarrhea (C > B). Reduced intake overcome with education (A = C).

*Other combinations are possible but the outcomes listed here are considered most likely.

Possible Outcomes

Probable Conclusions

A = B < C

No effect of education (A = B). Anorexia and withholding significant during diarrhea (B < C). Also may assume that anorexia rather than withholding accounts for most of the reduced intake.

A > C > B

Anorexia and withholding significant during diarrhea (C > B). Education not only overcomes these but increases intake to supernormal levels (A > C).

C > A > B

Anorexia and withholding significant during diarrhea (C > B), part of which is overcome with education (A > B).

F. COLLABORATIVE ARRANGEMENTS

In addition to the principle investigators Mr. Bruce Hoyle, a visiting medical student from Canada, would participate in the early phases of the study.

G. FACILITIES AND BUDGET

The study would utilize in essence only patients normally admitted and data customarily collected at the Matlab Hospital. Cost and resources over and above those customarily associated with patient care are extremely limited, being confined to two trained male field assistants for food intake measurements and the part-time participation of a female field worker for the mother's education.

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14. JE Rohde, "Preparing for the Next Round: Convalescent Care after Acute Infection," AJCN, in press, 1978.
15. GF Cahill, "Starvation in Man," NEJM, 282: 668-675, 1970.
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17. A Ashworth, R Bell, WPT James and JC Waterlow, "Calorie Requirement of Children Recovering from Protein-calorie Malnutrition," Lancet 2: 600-603, 1968.
(Wt gain about 10g/Kg/day with protein intake 4g/Kg/day).
18. RG Whitehead, "Protein and Energy Requirements of Young Children Living in the Developing Countries to Allow for Catch-up Growth after Infections," AJCN 30: 1545-1547, 1977.
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APPENDIX I

Feeding Trial Study

Instruction on Diet Preparation

1. At 4 P.M. of the day before the study, the worker should identify the large dekshi (marked X) set aside for the study.

2. Using the Toledo scale, the worker should weigh and mix in the dekshi the following ingredients:

rice	1050 gms
dal (musor)	250 gms
sugar	750 gms
pumpkin	750 gms
oil	75 ml
water	7 liters

3. With the dekshi covered with a lid, the mixture should be brought to a boil and cooked for about 1 hour.

4. Remove the dekshi from the flame and cool. Then store in the refrigerator overnight.

5. On the morning of the study, the kitchuri should be weighed on the Toledo scale. Add cold water to bring the weight to 9,740 gms.

dekshi	1240 gms
contents	8500 gms
gross weight	9740 gms

6. For children who have eaten rice/dal before, provide 300 gms (net) of kitchuri per serving on the study day.

7. For children not yet weaned or not yet on a rice diet, blend the kitchuri and strain through a mesh screen. Weigh the blended puree and obtain its net weight. Then add an additional 25% weight of water to make a fluid puree. Again, serve 300 gms of this puree per serving on the study day.

8. Weigh the kitchuri or puree after eating, and record the before and after weights.

9. The final composition and nutrient value of the kitchuri is shown in the table below:

<u>Food</u>	<u>Wt(gms)</u>	<u>No. Gms</u>			
		<u>Calories</u>	<u>Protein</u>	<u>CHO</u>	<u>Fat</u>
rice	1,050	3825	79	844	4
dal (musor)	250	838	62	146	2
pumpkin	750	185	8	49	1
sucrose (sugar)	750	3000	-	750	-
oil	75	675	-	-	75
water	6,500	-	-	-	-

Each 100 gms contains approximately 100 calories and 1.75 grams of protein.

Patient Study No. _____

FEEDING TRIAL STUDY FORM

Date: _____

Village: _____

Household: _____

Patient: _____

VTS No. _____

BREAST FEEDINGS (WHILD WT. GRAMS)

NO.	BEFORE		AFTER		NET WT.
	TIME	CHILD WT.	TIME	CHILD WT.	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
				TOTAL	

FOOD (FOR 2 ITEM FOODS RECORD & WEIGH SEPARATELY)

NO.	TIME	FOOD TYPE	FOOD WT. (GMS).		NET WT.
			BEFORE	AFTER	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

ORALYTE INTAKE (cc's)

8 AM - 4 PM	4 PM - 12 PM	12 PM - 8 AM	NET



कलरा रिसार्च लैबोरेटरी
Cholera Research Laboratory
Memorandum

TO : Nutrition and Diarrhea
Therapy Working Groups

FROM : Lincoln C. Chen /LC

DATE : 23.2.78

SUBJECT : FEEDING PRACTICES AND DIARRHEA

On 16-17 February, Mr. M.R. Khan, Ms. Chakraborty and I undertook a brief survey of mothers of 25 consecutive admissions under age 5 to the Matlab Hospital to obtain preliminary information on feeding practices in response to diarrhea. The inquiry was undertaken to provide background data for a more formal study later. John Briscoe's earlier memo on this subject should be reviewed as background to this memo.

Characteristics: All of the mothers were Muslim excepting one Hindu; 10 were from landless households. The age of the children were concentrated in the 6m-2year group; only 2 were less than 6 months and 2 were 2 years or older. The children under 6 months were fully breastfeeding; half of the 6-11 month group were receiving significant supplemental foods; and only 1 of 10 children over 12 months were not supplemented. There was some variability in individual supplementation patterns however; 1 child over 12 months old had not yet been supplemented, while another child of 6 months was receiving substantial supplemental foods.

Food Practices: No socioeconomic differentials in practices were noted. Contrary to expectation, there was no concensus as to whether diarrhea is a "hot" or "cold" illness. 16 responded "hot", 8 "cold", with 1 no response. Also contrary to expectation, 15 mothers reported increased breastfeeding frequency

during diarrhea; 8 reported decreased (the remaining 2 older children had been completely weaned). In 20 applicable cases, all mothers reported decreased dietary intake among the children. Interestingly, while customary foods were withheld, about half the mothers reported the introduction or enhancement of specific foods in response to diarrhea. These "therapeutic" foods included: (1) glucose water; (2) green coconut water; (3) rice broth with sugar (two); (4) soaked beaten or puffed rice gruel (two); (5) barley water (two); (6) mustard oil; (7) barley water with sugar; (8) bark of mango tree in water; (9) rice supernatant with salt and sugar; (10) hot rice broth with touch of spices.

Other Practices: About two-thirds of the mothers had consulted a local indigeneous practitioner before travelling to the CRL hospital. In many of these cases, various homeopathic, kobiraj and other medicines (tablets, syrups, etc) were prescribed. Interestingly, 15 families had undertaken other therapeutic practices, such as blowing over the child's body while reciting the Koran or hanging thread or amulets around the neck or extremities. Only 2 mothers reported using the kaolin mixture by CRL village workers.

Conclusions: Firm conclusions are not possible from this limited inquiry. Some useful background information however was obtained and certain hypotheses were generated.

(1) A list of commonly used foods during the weaning period was obtained. This should be helpful in later studies.

(2) Inquiry about the "active" properties of these various foods revealed lack of uniformity. Some foods, such as eggs or meat, were universally identified as possessing "hot" action, while mixed responses were obtained on other foods (e.g. milk). In all cases where food mixtures were introduced in response to diarrhea, "cold" foods were given. This occurred even in cases where mothers felt that diarrhea were a "cold" illness. All of this suggests that "beliefs" about various foods may be less important in introducing oral therapy or nutrition education - so long as the therapy or dietary education reinforces and resembles the types of foods ("cold") now being used.

(3) The mixed response to breastfeeding may reflect a mother's behavioural response to a child's desires during diarrhea. An agitated child may be put to the breast more frequently. A thirsty dehydrated child may seek breastfeeding more frequently. Anorexia or vomiting may reduce the demand for breastfeeding. Future research should attempt to dissect out these possibilities.

(4) The uniform reduction of food intake suggests that this is an important area of research. Why were foods withdrawn? Anorexia, vomiting, behaviour of mothers? How can it be discouraged? What is the food tolerance of children with diarrhea? What types of diet is best tolerated? What happens to the diet of the mother?

(5) Equally important would be feeding patterns after diarrhea has ceased. "Catch-up" growth is possible and feeding should be encouraged. Studies on feeding practices during diarrhea should also examine post-diarrhea practices.

(6) The extensive reliance on village-based indigenous healers suggests that more information is needed on this cadre of health providers. They constitute obviously an invaluable resource in implementing any intervention (oral therapy, education, etc.).

(7) Regarding oral therapy, it is encouraging that sugar or gur is a common ingredient of foods customarily utilized to treat diarrhea. Several of the solutions employed, in fact, closely resemble oral fluids. Successful introduction of oral therapy may capitalize on some of these similarities. For example, labon-gur may be recommended in a rice broth; or a packet containing the proper salts may be mixed at home with sugar added.

FEEDING TRIAL STUDY QUESTIONNAIRE

Village: _____

Patient: _____

Household: _____

VTS No.: _____

Date of Birth _____

Date: _____

Age: _____ yrs _____ mos.

Sex: / M / F

Breastfeeding & Diet History

A. Before the child got diarrhea, what was his/her breastfeeding status?

full supplementing; partial none

B. If supplementing or none, what foods do the child customarily eat?

	<u>Yes</u>	<u>No</u>	<u>If yes, age (mos.) first introduced</u>
rice (bhat)	_____	_____	_____
muri	_____	_____	_____
chira	_____	_____	_____
cow's milk	_____	_____	_____
goat's milk	_____	_____	_____
dal	_____	_____	_____
biscuit	_____	_____	_____
kola	_____	_____	_____
"lotta"	_____	_____	_____
roti	_____	_____	_____
dudh bhat	_____	_____	_____
dim	_____	_____	_____
mash	_____	_____	_____
manus	_____	_____	_____
molasses	_____	_____	_____
beans	_____	_____	_____
potato	_____	_____	_____
pumpkin	_____	_____	_____
other vegetables	_____	_____	_____
sweets	_____	_____	_____
sugar or gur	_____	_____	_____
fruits	_____	_____	_____

II. Diarrhea and Diet

A. When your child got diarrhea, did you change the child's diet?

	<u>Increased</u>	<u>Same</u>	<u>Decreased</u>	<u>Stopped</u>
1. breastfeeding	_____	_____	_____	_____
2. rice (bhat)	_____	_____	_____	_____
3. muri	_____	_____	_____	_____
4. chira	_____	_____	_____	_____
5. cow's milk	_____	_____	_____	_____
6. goat's milk	_____	_____	_____	_____
7. dal	_____	_____	_____	_____
8. biscuit	_____	_____	_____	_____
9. kola	_____	_____	_____	_____
10. "lotta"	_____	_____	_____	_____
11. roti	_____	_____	_____	_____
12. dudh bhat	_____	_____	_____	_____
13. dim	_____	_____	_____	_____
14. mash	_____	_____	_____	_____
15. manus	_____	_____	_____	_____
16. molasses	_____	_____	_____	_____
17. beans	_____	_____	_____	_____
18. potato	_____	_____	_____	_____
19. pumpkin	_____	_____	_____	_____
20. other vegetables	_____	_____	_____	_____
21. sweets	_____	_____	_____	_____
22. sugar or gur	_____	_____	_____	_____
23. fruits	_____	_____	_____	_____

III. Beliefs and Attitude

A. Is diarrhea a "hot" or "cold" illness?

hot cold DK or NR

B. Would you give your child "hot" or "cold" foods during diarrh.

hot cold DK or NR

C. Please list some "hot" and "cold" foods for children

Hot

Cold

D. Are there any foods that you would definitely not give to children during diarrhea?

E. Are there any foods that you would give to children during diarr~~hea~~?

IV. Practices and Treatment

A. Did you treat your child for diarrhea before bringing the child to the CRL Hospital?

yes no DK or NR

B. If yes, what did you do?

Practitioner

Treatment

1. _____
2. _____
3. _____
4. _____

SECTION III - BUDGET

A. DETAILED BUDGET

1. PERSONNEL SERVICES

<u>Name/Position</u>	<u>% Effort/yr</u>	<u>Annual Salary</u>	<u>Project Requirements</u>	
			<u>TAKA</u>	<u>DOLLAR</u>
L. Chen	10	US\$ 38,000		3,800
Md. Yunus	10	Tk. 56,420	5,642	
M. Molla	10	94,610	9,461	
Matlab Physician	20	31,580	6,316	
Bruce Hoyle	2 months	-	500*	
FA x 2	50	11,256	11,256	
Female FW	10	11,256	1,126	
Statistical Asstt.	10	26,020	2,602	
		Subtotal:	<u>36,903</u> =====	<u>3,800</u> =====

2. SUPPLIES AND MATERIALS

None

3. EQUIPMENT

None

4. PATIENT HOSPITALIZATION

150 patient days @ Tk. 130/each	19,500
Subtotal:	<u>19,500</u> =====

5. OUTPATIENT CARE

None

6. CRL TRANSPORT

Mileage Dacca-Baushiaghat-Dacca	
400 miles @ Tk. 3/mile	1,200
Speedboat for Dacca-Matlab	
10 hours @ Tk. 105/hr	1,050
Speedboat to bring patients to hosp.	
5 hours @ Tk. 105/hr	525
Subtotal:	<u>2,775</u> =====

* training honorarium

Project Requirements
TAKA DOLLARS

7. TRAVEL AND TRANSPORTATION OF PERSONS

None

8. TRANSPORTATION OF THINGS

None

9. RENT, COMMUNICATIONS, AND UTILITIES

None

10. PRINTING AND REPRODUCTION

Xeroxing
Cyclostyling

500
500

Subtotal:

1,000
=====

11. OTHER CONTRACTUAL SERVICES

None

12. CONSTRUCTION, RENOVATION, ALTERATIONS

None.

B. BUDGET SUMMARY

<u>Category</u>	<u>Year 1</u>	
	<u>Taka</u>	<u>Dollars</u>
1. Personnel	36,903	3,800
2. Supplies	-	-
3. Equipment	-	-
4. Hospitalization	19,500	-
5. Outpatients	-	-
6. CRL Transport	2,775	-
7. Travel Persons	-	-
8. Transportation Things	-	-
9. Rent/Communication	-	-
10. Printing/Reproduction	1,000	-
11. Contractual Service	-	-
12. Construction	-	-
Total:	<u>60,178</u>	<u>3,800</u>
Total \$		<u>7,812</u>

Conversion Rate \$ 1.00 = Tk. 15