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IMPROVING YOUNG CHILD FEEDING DURING DIARRHEA

A GUIDE FOR INVESTIGATORS AND PROGRAM MANAGERS

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PREFACE

While the importance of oral rehydration therapy in diarrhea treatment has been recognized by health workers and diarrhea disease control (CDD) programs, feeding continues to receive less emphasis. Yet feeding is a key element in successful diarrhea treatment.

One reason for this lack of attention is that feeding during diarrhea is confusing--for both mothers and health workers. Doctors' recommendations to mothers are conflicting, ranging from "stop feeding entirely to let the gut rest" to "give this special formula, because your baby cannot tolerate milk." Babies with diarrhea add to their mothers' confusion by refusing to eat, or losing their taste for favorite foods. Mothers and health workers both are perplexed when giving food seems to result in an increase in the diarrhea. Finally, beliefs about giving certain types of food, such as foods classified culturally as being "hot" or "cold," often conflict with medical advice.

Feeding infants and children--even those without diarrhea--is confusing. Nutritional needs change as a child grows. As a child shifts from breast milk to formula, to weaning foods, and then to an adult diet, mothers and health workers must concern themselves about several aspects of the diet. Does it contain enough total calories to support growth? Is it sufficiently nutrient-dense to allow the child's stomach to take in an adequate amount of nutrition if the child is fed on a practical schedule? Does it contain an appropriate balance of carbohydrates, fat, protein, and micronutrients such as vitamins and minerals? These concerns must then be combined with considerations of cost, food availability, time and effort to prepare and cook the food, other demands on the mother's time, and cultural and intrafamily eating patterns.

With so many interacting decisions to be made, it is hardly surprising that weaning and diarrhea diets are often inadequate and malnutrition is so common.

To allay some of this confusion, CDD programs have responded by stressing simple messages in their communications to mothers, such as "continue feeding during diarrhea" and "give extra food during convalescence." But these vague, general messages may be quite ineffective in changing the mother's behavior. Communications research has repeatedly confirmed that specific instructions tailored to the situation are much more likely to be "heard" and acted on. And even if such general messages do result in a change in the mother's practices, they may not improve the child's diet. In Nigeria, for example, it is common to give diarrheic babies a dilute maize-based gruel. "Continue feeding," according to this practice, will result most often in giving the child an inadequate diet.

It is clear that effective messages about feeding during diarrhea must contain specific dietary recommendations based on a range of nutritional and local considerations. To formulate such recommendations, CDD programs must have information about mothers' current feeding practices and determine whether these practices are appropriate, both nutritionally and relative to the child's diarrhea.

Research is needed on what mothers now are doing during their child's diarrhea as well as on their basic weaning practices. The recommendations based on such field studies must be tested in typical homes, to determine if mothers are able, and willing, to follow them. Recommendations that are proven to be feasible and effective must then be translated into communications messages--posters, brochures, and mass media spots--which also must be tested with mothers.

All too often, feeding recommendations and messages are designed by doctors and health educators, sitting around a table in the capital city. The messages that result from this isolated process are sadly ineffective. This manual provides a practical, step-by-step approach to conducting field studies with mothers, and the subsequent analysis and application to message design, that is needed to develop effective feeding recommendations and messages.

Robert S. Northrup
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WHY THIS APPROACH

As first used for health and nutrition education projects some 15 years ago, consumer research had a minimal impact on improving project effectiveness. Consumer research meant conducting a survey among potential beneficiaries to determine their knowledge, attitudes, and practices related to certain issues (a KAP survey).

While the idea of talking to the target groups of education was certainly a good one, the KAP surveys were of limited utility because:

- o the areas of inquiry were determined entirely by the project staff, and
- o the surveys were quantitative and thus did little to illuminate the reasons behind KAPs or to suggest strategies for changing them.

The information obtained helped little in designing effective messages because there was no scope for learning from the people themselves about their potential problems in changing their behavior or for evaluating the strength of current attitudes and practices and the possibility that they could be changed.

The next stage in developing a truly consumer-based education program was to use more qualitative research techniques from anthropology. This approach was more helpful, primarily because of the time spent observing and working with mothers in their own homes. However, the research took a long time, produced a great deal of information that could not be used, presented difficulties for people unskilled in anthropology, and was impossible to replicate for smaller-scale projects or where resources were limited. In addition to these concerns, it was realized that such research did not sufficiently probe with mothers and others their outlook on child raising, their aspirations for their children, and other lifestyle perceptions that would allow health educators, in the manner of commercial advertisers, to touch meaningful chords that would motivate the target audiences.

In striving to distance ourselves further from investigator-determined answers and program planners' assumptions and to have a research protocol that could be implemented relatively rapidly by a variety of research-oriented people, we have developed a systematic methodology that departs from the strong basis in anthropological research by incorporating techniques from other disciplines that streamline and improve the quality of the process.

What is unique about the methodology is its reliance on constant consultation with the intended beneficiaries, using qualitative methods to aid in formulating program strategies.

The approach uses a combination of depth household interviews and focused group discussions, supplemented by actual trials of possible interventions or new practices with representatives of the beneficiary population. In this way, people are not only given a chance to talk about what they want for themselves and their children, but also are provided an opportunity to offer guidance on how they can best improve health and nutrition-related practices.

This formative research methodology has been used successfully to design educational approaches in a variety of nutrition and family planning programs in many countries over the past decade and has been continuously refined in weaning-improvement projects currently underway in five countries.

This guide adapts this proven methodology to the challenge of motivating mothers to continue feeding their young children during and after diarrhea episodes. The importance of this health behavior cannot be overstressed. As David Nalin pointed out at a 1987 symposium on oral rehydration therapy, "Since the majority of patients have mild self-limited diarrhea, prevention of starvation therapy is more important for their management than choice of particular oral solution." Continued feeding, together with oral rehydration therapy, can prevent many child deaths from dehydration.

It is likely that all educational efforts regarding feeding and diarrhea will urge mothers to continue breastfeeding and other feeding during and after their children's episodes of diarrhea. The research process described here, however, provides educational planners with crucial knowledge. They will learn what to say about what to feed, how to feed, and how often; what will motivate mothers to follow the advice; and what mass and interpersonal media will be most effective in transmitting the messages. The behavioral advice is thoroughly tested for feasibility and acceptability. Messages are thoroughly tested for comprehension, credibility, relevance felt by mothers, and psychological power to stimulate action. As a result, the effectiveness of education is enhanced immensely.

OVERVIEW OF METHODOLOGY

This methodology combines market, nutrition, health and anthropological research techniques to document and understand why practices related to feeding during and following a child's episode of diarrhea occur, as well as the attitudes associated with those practices. Both quantitative and qualitative methods are utilized and organized in a manner which yields an understanding of the multiple causes of improper feeding practices and how best to improve them through an educational program. Samples are small and carefully chosen, and interviewing is in-depth. Structured observation is used to confirm the presence of behaviors reported verbally.

Qualitative judgments about practices and perceptions are possible as a result of this intensive study. However, the ability to perform statistical tests and to extrapolate findings to other populations with different characteristics is limited.

This flexible methodology provides a framework for conducting and analyzing research that becomes the basis of an appropriate educational strategy. Program managers will need to adapt the methodology to the particular situations of their programs.

The process may appear complex at first glance. However, when each step is implemented consecutively, with decisions from one step guiding the execution of those that follow, it should be quite manageable. At the same time, since insights through this step-building process are cumulative, it is possible, if desired, to shorten some steps. An illustrative time line for the complete protocol is shown in Chart 1.

The cost of implementing this methodology will naturally vary substantially from country to country. The greatest expenses are for salaries, transportation and daily allowances for field investigators. Because the research is primarily qualitative and focuses on a small sample, automated data processing and other costs that would be incurred for a larger survey with a representative sample are reduced or eliminated.

The time investment required is about five to seven months (including planning and report writing), depending upon the size of the area to be studied, the thoroughness of the investigation, logistical factors, and the quality of field support. Although this effort may at first seem excessive, it is very likely to improve the program's ability to change feeding practices and therefore to have a major impact on the next several years of effort.

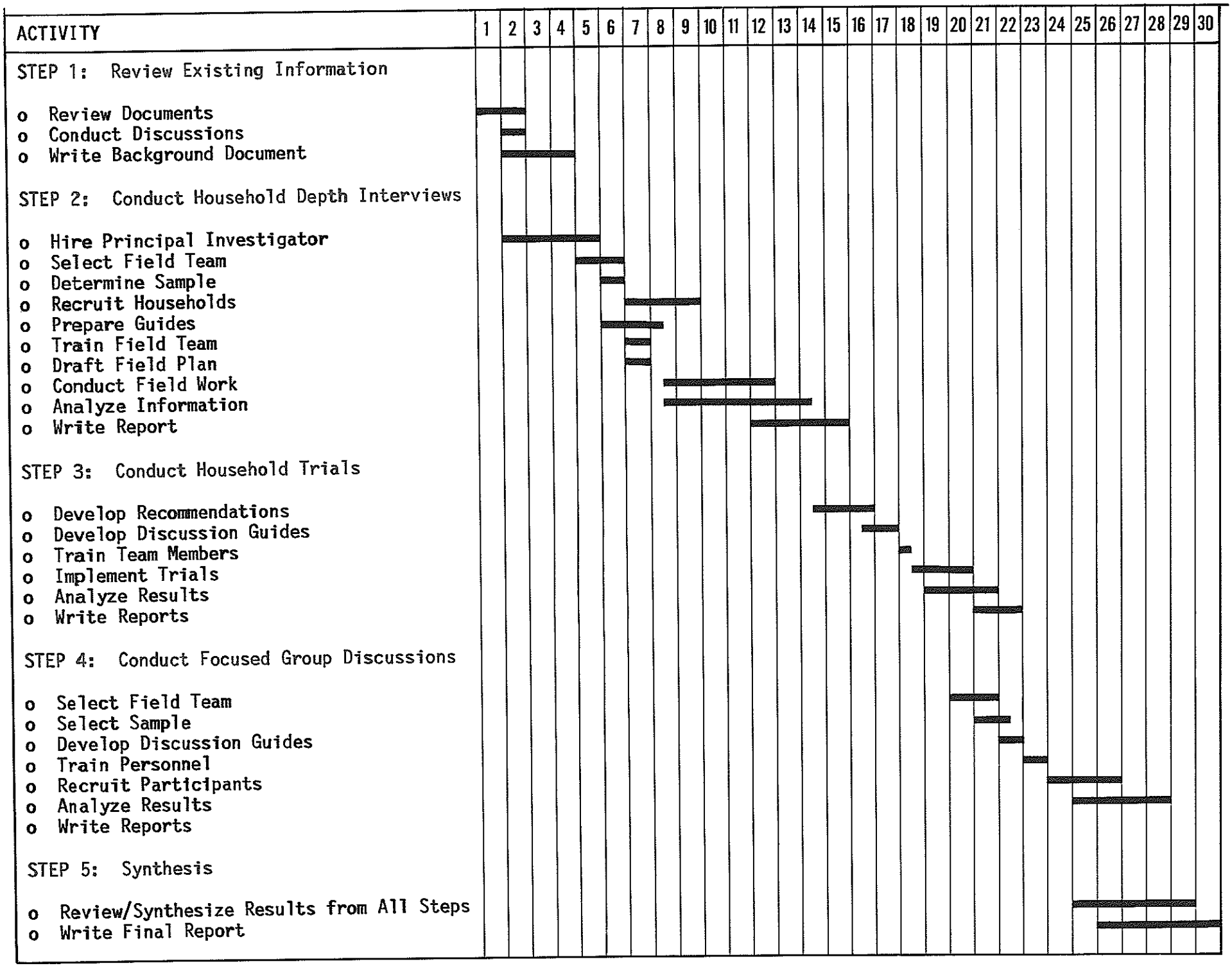
The methodology consists of three phases--problem identification, intervention or concept testing, and analysis and synthesis--and five basic steps:

- o Review of Existing Information
- o Depth Household Interviews and Observations
- o Household Trials
- o Focused Group Discussions
- o Synthesis

Chart 2, Methodology at a Glance, summarizes the purposes and outcomes of each step in the research process.

CHART 1

IMPLEMENTATION SCHEDULE



METHODOLOGY AT A GLANCE

PHASE I: PROBLEM IDENTIFICATION

Purpose: To identify the critical problems impeding the proper feeding of children during and after diarrhea and the resources available to alleviate or solve the problems.

Step 1: Review Existing Information

Purpose:

- To identify key areas and specific target groups for further in-depth investigation during Step 2.
- To provide a basis of comparison with the information collected during field activities.

Outcome:

- A background document that summarizes existing information and points out gaps in information on current feeding practices.

Step 2: Design, Implement, and Analyze In-Depth Household Interviews and Observations

Purpose:

- To gather information on current feeding practices and problems that impede proper nutritional intake during and following diarrheal illness and identify the resources available to solve these problems.
- To formulate specific recommendations to test with families during Step 3.

Outcome:

- Report on field activity findings, including an assessment of the nutritional benefit, neutrality, or harm of current practices.
- Recommendations for behavior changes to improve nutritional intake and health.
- List of possible resistances to behavior change recommendations.
- List of possible ways to motivate specific target groups to accept recommendations.

METHODOLOGY AT A GLANCE

PHASE II: INTERVENTION OR CONCEPT TESTING

Purpose: To understand the population's ability and willingness to change practices and the conditions under which this change could take place.

Step 3: Design, Implement, and Analyze Household Trials of Proposed Behavior Changes

Purpose:

- To determine which practice changes are most feasible have the greatest potential for success, and merit additional testing during Step 4; identify major problems that remain for the adoption of these new practices; and suggest possible modifications to make the changes more acceptable.

Outcome:

- Tabulated results of the field work by target group.
- List of the most feasible behavior modifications and reasons to implement or not implement these changes.

Step 4: Design, Implement, and Analyze Focused Group Discussions

Purpose:

- To test the concepts and behaviors perceived positively and implemented most successfully during household trials with target persons (non-participators in the trials) and individuals who currently provide information on dietary management of diarrhea (those likely to use the educational materials and messages generated from this research).

Outcome:

- Compilation of profiles for each age segment of the target population. Profiles will identify the level of comprehension of each concept, acceptance of the concept and the conditions under which it could be adopted, resistance to adopting the new behavior, and motivational factors associated with suggested behaviors.
- List of recommendations on behaviors, motivational approaches, and resistance points to address in the dietary management of diarrhea intervention.

METHODOLOGY AT A GLANCE

PHASE III: ANALYSIS AND SYNTHESIS

Purpose: To synthesize all the information collected and analyzed during Phases I and II in order to produce a document that will facilitate the formulation of a complete communication strategy.

Step 5: Synthesis

Purpose:

- To synthesize all the results from the research activities and determine their significance for communication strategy formulation.

Outcome:

- Summary report providing relevant background information on the research activity for individuals who will develop the creative strategy and materials for the dietary management of diarrhea intervention. The report will present the main potential practice changes, motivations, and resistances for each age segment and suggest potential media and authority figures.

PHASE I

PROBLEM IDENTIFICATION

This phase of the research encompasses the initial identification and investigation of concepts associated with the care and feeding of infants and young children during and following diarrhea. Existing information on communications is also studied.

STEP 1: REVIEW EXISTING INFORMATION

- Review published and unpublished documents that provide information on child feeding and nutrition and diarrheal illness in the project area(s).
- Conduct discussions with people who are believed to have specific knowledge about feeding practices during and following diarrheal disease.
- Write a project background document that summarizes the available information.

REVIEW DOCUMENTS

Potential resources for information on infant feeding patterns, nutritional status, cultural information and other pertinent topics include university publications, theses, national nutrition surveys, market and price information, food consumption data, qualitative/ethnographic reports, census data, training materials, and media surveys. Sources of information on media use and communications programs may include local market research and advertising agencies, radio and television stations, government information offices, private voluntary organizations, and groups working in nonformal and adult education programs.

The review does not have to be a major undertaking if time and resources are limited. For example, reviewing only information from the last five years or on a specific geographic area(s) is a useful way to limit this phase of the research. However, it should be borne in mind that time and resources invested in the literature review will provide a sound foundation for designing subsequent steps in the research process. This step, if carried out thoroughly, may save the project time and money in the long run.

CONDUCT KEY INFORMANT INTERVIEWS

Interviews with knowledgeable individuals could continue indefinitely. If time and resources are limited, choose four individuals who are considered to be local experts in nutrition and dietary management of diarrheal disease. The types of individuals to interview are nutritionists, Ministry of Health technical personnel, clinical researchers (perhaps from a local medical school), health educators and communicators, and anthropologists or other social scientists.

Key informant interviews should supplement and/or explain the information that is gathered during the literature review. They also are a way to discover "common knowledge" that may not be written down. Interviews should be structured but open-ended. A list of the subject areas to be covered in the background document should be sufficient guidance to focus the discussion.

PREPARE A BACKGROUND DOCUMENT

This document should:

- Describe feeding and child nutrition in the project area(s), including:
  - food availability and consumption;
  - attitudes and beliefs about child feeding; and
  - popular foods and methods of preparation.
- Describe the epidemiology and etiology of diarrheal disease:
  - When does diarrhea occur? What is its seasonal pattern?
  - What are the disease agents?
  - How does diarrhea vary by cause? Age and other characteristics of children affected? Amount of fluid loss? Length of episodes?
- Describe mothers' beliefs, attitudes, and practices regarding childhood diarrhea:
  - What are the cultural definitions and perceptions about diarrhea?
  - How is childhood diarrhea perceived? Is it considered dangerous?
  - What is currently known about treatment alternatives? If there are different types of diarrhea, are there different treatments associated with each?
  - What is known about feeding during and following diarrheal illness?
  - Are there foods that are perceived as "special" or "harmful" that are offered or withheld during diarrhea episodes?
- Identify characteristics of the population that merit special study for developing an educational program to improve child feeding.
  - Are there important ecological, residential (urban/rural), or migration pattern differences?

- Are there important religious and/or ethnic differences?

- What do disaggregated health indicators show about particular populations? Where is diarrhea prevalence highest? Where are the least and most malnourished populations?

o Describe the channels through which the educational program could be delivered:

  - Government health system: numbers and types of trained personnel, job descriptions, community level outreach, and education;

  - Traditional or nonformal health system;

  - Traditional or nonformal information systems such as mothers clubs, literacy programs, folk theatre, etc.;

  - Mass media.

o Examine past efforts to communicate information about diarrheal disease control, prevention, and treatment, including media experience and educational messages about diarrheal disease that are currently in use.

  - What media have been used and with what impact?

  - What educational messages on diarrheal disease are being communicated?

  - What lessons have been learned?

o Identify the gaps in existing knowledge, including broad areas such as the absence of household-based research or information on mothers' perceptions and behaviors. For example, are the answers to the following crucial questions known:

  - Do mothers not offer food when the child has diarrhea, or does the child refuse the food?

  - When do mothers resume a child's regular diet (if they have modified it) following a diarrhea episode?

  - Do mothers alter the frequency of breastfeeding during diarrhea?

EXPERIENCE IN SWAZILAND

REVIEW OF EXISTING INFORMATION TO PROMOTE IMPROVED INFANT AND YOUNG CHILD FEEDING

Organizations and Individuals Involved:

The National Nutrition Council is responsible for the project through a management committee that includes representatives from the Ministries of Health and Agriculture and UNICEF. Two nutritionists from the management committee were assigned to the review. The resulting document was approved by the Council.

Time:

- Collecting documents and interviewing individuals: 1 week
- Reviewing documents: 3 weeks
- Writing document, including review by the Council: 3 weeks

(Note: Time involved does not imply full-time work, but rather several hours per day as part of normal workloads.)

Cost:

Negligible since staff were already employed. In this case, the review was edited and printed, which entailed some cost.

Examples of Insights for Project Development:

- Stunting (low weight-for-age) is common in early childhood due to chronic undernutrition. Factors associated with stunting are well documented.
- The problem is not severe food shortages but rather feeding practices and frequent illness.
- Use of non-human milk is very common, beginning with newborns. A great deal is known about the use and marketing of milk.
- The health services weigh children but conduct little education and have minimal community outreach.
- Health service personnel hold many erroneous ideas about infant feeding. Extensive training is needed.
- The traditional health system is well developed and popular.

- Radio listenership appears to be high and expertise in development communications is growing.

- Gaps include no knowledge of actual feeding practices after the first months of life. There were no observations on child feeding that document dilution of food, quality of food, frequency of feeding, or hygiene. There was scarce information on knowledge and attitudes of families toward children, child rearing, feeding, the future, or Swazi traditions.

Lessons:

- This step was useful in delineating and achieving a consensus on the direction of the project: an educational program aimed at improving infant and young child feeding practices.

- It clarified the need for precise, detailed information on feeding practices and on general perceptions and attitudes.

- It minimized the need for a media habits survey.

- Too much time was spent writing conclusions and in the review process for publication. However, this did not delay using the information in the project. The review process can be expedited if one or two people, who are assigned responsibility for the review, make a presentation to a larger group and then finalize the document, rather than circulating a written document to a large group for individual review.

STEP 2: CONDUCT HOUSEHOLD DEPTH INTERVIEWS AND OBSERVATIONS

- Select the team to plan and carry out the field research. (See Box 1.)
- Determine the sample:
  - Establish no more than four population segments (population groups differentiated according to relevant distinguishing characteristics) for the research. (See Box 2.)
  - For each segment, select the population unit (e.g., community, parish, homestead) to be studied. (See Box 3.)
  - Select 10 to 15 households within each population unit. (See Box 4.)
- Recruit the households. (See Box 5.)
- Prepare question and observation guides. (See Box 6.)
- Train the field team.
- Draft a field plan for dividing the interviews among field team members.
- Conduct the household interviews and observation and key informant interviews.
- Analyze the household interviews and observation results while in the homes and once the field work is completed.
- Write a report on the activity and prepare for Step 3. (See Box 7.)

The household depth interviews and observations entail direct questioning, structured and open observation, and open-ended discussion with mothers, primary child caretakers in their homes, and a few key informants in order to obtain information on current feeding practices, critical problems impeding proper nutritional intake during and following diarrhea, and the resources available to alleviate or solve these problems. These information-gathering techniques permit guided yet flexible discussions. The topics are predefined, but there are no predetermined categories for answers. "Yes" and "no" questions are asked, but the key question is why, so interviewers' notes are often extensive. This flexibility allows the discussion to proceed in directions that may not have been anticipated during interview planning.

When planning this phase, remember what the outcome should be: a description of actual practices that highlights the major problem areas, the possibilities for improving problem practices, and the major resistances and motivating factors that hinder or promote the behavior.

SELECT THE FIELD RESEARCH TEAM

The team should include a leader--a research director (principal investigator) who will be responsible for some of the interviewing but whose primary responsibilities will be supervising and maintaining the course of the research. Additional staff members serve as interviewers or trainers of interviewers. Ideally, all members of the field research team participate in all aspects of the research (training, interviewing, observation, analysis, and report writing). While early recruitment of the research director and another key research person is critical, so they can make the early decisions on sampling and the question guides, interviewers can be hired later in the process.

How the research team is selected depends on local resources and the level of participation desired by program personnel. In some places, the research can be contracted to a research firm or institute selected through a competitive bidding process. In other cases, the research can be partially or completely handled by the program, which may hire the research director and/or the field workers.

Individuals with some training in nutrition or the social sciences are ideal candidates for team members. In addition, members of the field team should have the following important characteristics:

SELECTING FIELD TEAM

- fluency in the local language(s)
- ability to establish rapport with strangers, converse naturally on the areas of interest to the study, and observe astutely and with an open mind
- maturity, ability to handle sometimes difficult situations, and comfort with the issues of child care, child illness, and child feeding
  (While both men and women are potential team candidates, women are usually more at ease when talking with women about these issues.)
- previous field experience
- willingness to stay in the study communities during the research
- ability to analyze a situation, think and act independently, and write adequately

In setting up the team, the program manager or research director should attempt to establish good group dynamics and efficient functioning. Making an effort to foster good team morale is important because field work can be arduous and time consuming. Ideally, investigators should work in teams of two or three members. A small team can move together to each community, each investigator taking responsibility for interviewing respondents with children in a specific age group. Where language varies, team members will have to specialize by language skills instead of by age group.

Administrative responsibilities (e.g., requesting per diem, arranging travel) should be assigned to someone outside the group or divided reasonably among group members. It does not work well to have the research director responsible for administrative arrangements.

DETERMINE THE SAMPLE

Establishing Population Segments. The information gathered during Step 1 provides the basis for segmenting the population for the field research. Procedures for dividing the study population are outlined in Box 2.

To segment the population, consider:

SEGMENTING THE POPULATION

- Areas in terms of geographical factors such as mountains, coast, plains, etc., which often dictate the types of food available.
- Areas that may have different patterns of diarrhea incidence and/or prevalence.
- Other factors such as degree of urbanization, language, or ethnic or religious affiliation, which influence child feeding and diarrheal disease and/or access to channels of education and communications.

The particular population characteristics that are singled out for investigation should be those that are hypothesized to have the greatest effects on child feeding beliefs and behaviors and/or diarrheal disease. For example, typical segments for sampling are often two distinct ecological zones where food consumption patterns are different: highlands and lowlands. In the lowlands, the lifestyle differences between rural and urban residents may be large and diarrheal prevalence statistics may indicate that diarrhea rates are highest in urban areas with recent migrants. This would suggest three sampling segments: lowland rural areas, lowland urban areas with both long-term residents and recent migrants, and highland rural areas.

For most programs, no more than four population segments should be selected, although programs of national scope

may require more segments. Additional subgroupings increase the scope of the qualitative research, and few programs will be able to mount separate educational efforts for more than a few subgroups within a given population. Therefore, selection of the most important groups at the outset of the program is a critical decision that should be made by the program manager and the researchers.

Selecting the Population. Following identification of the important population segments, the next step is to select the population units among which the research will take place, as detailed in Box 3. The most appropriate unit for this research may vary from region to region and country to country. In rural areas of Java (Indonesia), for example, entire villages would be selected; outside Java, where people group themselves differently, the unit of study might be the "dusun" (a sub-village unit). In Ecuador, an entire parish might be the target of research in rural areas, while census tracts might be selected in urban areas. In Swaziland, rural people live in homesteads, so the research boundaries are defined by census enumeration areas.

SELECTING POPULATION UNITS

- Each unit should contain from 35 to 50 children in the age group of the study (discussed in Box 4).
- Each unit should be representative of the population segment in terms of socio-economic status, access to health care and other services, food availability, and other characteristics. To form concepts about what nutritional problems exist and the potential for their resolution, population units must represent families that fall between the extremes (very poor and very rich; extremely isolated or close to a large urban center).
- Select only one population unit for each segment for the household interviews and observations. That is, using the prior example, select one community that represents the highland rural area; one for the lowland rural population; one for the lowland, stable urban population; and another for the lowland recently migrated population. During Phase II, Phase I research findings will be explored in other areas.

Selecting Households. The next task is to determine the number of specific types of households needed within the selected units to ensure that the major age groups and relevant characteristics are adequately surveyed.

SELECTING HOUSEHOLDS

- Determine the age range and sampling frame by age. Be certain that children of a variety of ages within the age range are studied. Since feeding practices and requirements vary with the age of the child, it is important to know what mothers are feeding and are willing to feed during different periods of the child's life.

- Emphasize selecting children who have diarrhea or had diarrhea recently (during the last two weeks), but do not limit the study to these children. Much information that will be collected pertains to child feeding in general. It is important to know how general practices differ from practices followed when the child has diarrhea.

- Some program managers may wish to choose both well and undernourished children for the depth interviews. Although this is not necessary, information on nutritional status is useful during analysis, and it is advisable to obtain child weight when possible.

The appropriate age range for the study must be determined. In general, children during the weaning period, broadly defined as 0-36 months, will be most affected by diarrheal disease, poor feeding practices, and resulting nutritional deficiencies. However, it may be possible to narrow the age range to 0-24 months, 4-24 months, or 4-36 months depending upon when diarrhea and nutritional problems are known to begin and diminish. If it is known that children are exclusively breastfed in the first three months of life and/or diarrheal incidence is rare during this period, then the program manager or research director may decide that it is not necessary to include newborns and young infants in the study.

The sample should include 10 to 15 children from each sample population unit. This usually means from two to four children in each age group from each of the units selected. The total numbers will depend on the availability of time and other resources. Remember that the purpose of this research is to uncover the major feeding problems with a concentration on those occurring during and after diarrhea. The findings are meant to be representative but not to delineate the precise prevalence of a practice or to be statistically interpreted. Be thorough but not overly zealous. A clearly thought-out and well-planned sample design is critical to the success of this activity, but it must be one that can be managed by available personnel using available resources.

During Phase I, the emphasis is on obtaining precise information for children with diarrhea or who had diarrhea in the past two weeks. This may make it difficult to find enough

children, but it is the only way to obtain accurate information. Some children without diarrhea should also be included in order to contrast feeding practices.

An illustrative sampling frame for a study of children in the 4-36 month age range is:

Age (Months)	Current or Recent Diarrhea	Without Diarrhea
4- 8	2	1
9-12	2	1
13-18	2	1
19-24	1	1
25-36	1	1
	8	5

In this study, 13 children from each population unit would be selected to participate in the household depth interviews and observations. This number could be increased to 15 (maximum) if the age period were extended and/or the researchers wanted to include more children in any specific age category. If sampling in a maximum of four population units (locations) were adhered to, the total sample would be 52 children (i.e., 13 x 4).

RECRUIT THE HOUSEHOLDS

Once the household sampling frame has been determined, the actual households must be identified. Guidance is required by the research director or program manager because deviations from the plan may be necessary if enough children with diarrhea are not found or other problems are encountered. In addition, care should be taken to avoid obtaining a biased sample. For example, selecting only houses that are along a road or near the health center would result in a biased sample.

RECRUITING HOUSEHOLDS

- Recruiters should visit all homes in the population unit and complete a recruitment sheet **only** for families with a child in the target age range. (Appendix A contains a sample recruitment sheet.)

- Information on the recruitment sheet should include:

  - child's age (a confirmed birth date, if possible)

  - child's recent illness history, including any diarrhea (use local terms/descriptions)

  - other selection criteria determined by the program manager (birth order, ethnic or religious affiliation, etc.)

  - complete address or location of the home, names of the mother and father, etc.

  - willingness of the family to have someone visit them in the following few weeks to ask questions and observe

- The program manager or research director:

  - sorts the recruitment sheets into appropriate categories (age group, presence of diarrhea, ethnicity, etc.)

  - selects the appropriate number of households (randomly, or according to additional criteria to ensure that all of the age segments are considered) as set forth in the sampling design

  - designates replacement households in the event that some of the families selected cannot participate in the study

- Recruiters also identify three or four people in the community who might be good key informants. These may be:

  - individuals who are currently giving advice on child feeding and/or diarrheal disease treatment (local healers, community health workers, etc.)

  - people who might be sources of information ("change agents") in the educational program (pharmacists, store keepers, etc.)

  - individuals whose opinions and support are required for the success of a program seeking to change current (sometimes traditional) behavior (head of the women's group, a local religious leader, a charismatic leader, etc.)

Recruitment does not necessarily lengthen the research process. Often, it can be done by field workers or local health workers while the question guides are being drafted and tested by the research team.

It is very important to avoid selecting children or families that are extremely atypical due to a social or medical problem. High-risk children should be included in the sample, but they should represent the typical high-risk child in the area.

PREPARE QUESTION AND OBSERVATION GUIDES

The guides usually are composed of specific questions to be asked by the interviewers, guidelines for observation, instructions and format for the 24-hour food recall, and information to identify the respondents (name, address, age and health/illness status of the child). If interviewers are very experienced, a list of topics to explore may be preferable to specific questions.

Question guides minimize problems by structuring notetaking. Ample space is left for comments and remarks that can be incorporated into specific slots on the question guide when the field notes are reviewed after the interview. In Swaziland, for example, interviewers used small notebooks in which they pasted a list of topics and questions about every third page to structure their notes but leave plenty of space for answers, observations, and comments.

If interviewers are in the home for a long period of time (from the time the child awakens to the time s/he goes to bed), the dietary intake can be recorded by observation rather than intake recall. Observed feeding practice information may substitute for the recall information, or it can be used to validate the recall findings.

The topics covered during the key informant interviews may be the same or different from those covered in the household interviews. For example, the informants' general opinions on diarrhea and feeding, what they do for their own children, or their views about what everyone else is doing may be solicited.

Major topic areas for questions include: breastfeeding and infant feeding practices (introduction of food, bottlefeeding, etc.) in general and during and following diarrhea; perceptions of different types of locally available foods; morbidity history (particularly related to diarrheal disease); health-seeking behavior for diarrhea; and sources of information (mass media, family members, health personnel, etc.).

The important aspects of the guide are as follows:

DESIGNING A GUIDE FOR DEPTH INTERVIEWS

- **Direct Questioning:** Several types of questions are formulated, depending on the topic and information desired:
  - **Descriptive:** These questions request an account of something (event, organization, etc.) in its local context using local language. For example, "What actions do you take when your child has diarrhea?"
  - **Structural:** These enable an interpretation of how things (including knowledge) are structured and organized. For example, "What are all the steps in making the soft porridge?"
  - **Contrast:** These ask the difference between one or more objects and events. For example, "What is the difference between a healthy and an unhealthy food?"
  - **Why:** These ask the respondent to explain the reasons for a situation or an action in his/her own terms. For example, "Why do you give your child this food at that age?"
- **Structured Observations**
  - Activities of the mother, particularly with respect to the care and feeding of the target child.
  - Activities and behavior of the child and what actions (if any) they trigger by the mother.
  - Breastfeeding, bottlefeeding, and other infant feeding during the visits.
  - Special medicines or preparations for diarrhea.
  - Food preparation: special child food; family food.
  - Family and child meal time: Who feeds the child? Does s/he have her/his own plate? Special behavior because of illness?
  - Conditions in the home: hygiene (water, garbage); food inventory and storage.

- o Nutritional status determination (optional).

- o Dietary recall: This is a complete recall of all the foods consumed by the child during the previous 24 hours. This information can be recorded on a simple form with columns for time of day, type of food, ingredients, approximate quantity of food (if mixed) or of each ingredient consumed (not merely served).

  - If the interviewer is in the home for only a few hours, ask the caretaker what the child ate during the previous day. Ask what the child ate, starting when the child awoke. Continue by having the caretaker recall various activities which occurred during the previous day and whether the child had food.

  - As each food is mentioned, find out the ingredients, method of preparation (such as boiled or fried), and the approximate amount eaten by the child.

  - Ask about breastfeeding/breastmilk if the child is still nursing.

  - Prompt the caretaker about snacks the child also may have eaten.

The initial draft guide should be pretested and refined several times prior to beginning the field work. The final pretest can be done during interviewer training. (See Appendix B for sample portions of question guides.)

TRAIN THE TEAM

Each field team member should receive training on the purpose, methods, and use of each of the information-gathering techniques to be employed during the field research. The training course requires, on average, about one week. It includes:

- o an overview of the project, its objectives, goals, and implementation schedule

- o a review of infant and child nutrition and the importance of feeding during and following diarrheal illness

- o a complete description of each information-gathering technique (listed in Box 6)

- instructions on correct use of the recruitment forms and practice in recruiting (for recruiters, who are not necessarily the same as the interviewers)

- instruction and practice in techniques for establishing rapport with family members and other informants

- a complete explanation of each question guide and how to record responses to each question

- instruction and practice in conducting open-ended interviews with emphasis on developing good listening and notetaking skills, and on identifying and pursuing conversational "cues" (new and interesting comments that are relevant to understanding current feeding/diarrheal disease control practices, resistance points, and motivations to change)

- instruction and practice in taking anthropometric measurements (optional)

- instructions and practice in prompting dietary recall and completing food recall forms

- instruction and practice to develop observational skills

  This is done using simulation, first by playing any game and asking trainees to explain what behaviors they noticed; then by observing other situations and asking them to pay attention to food-related scenes and to describe the relevant actions. Finally, the trainees are taken to communities and asked to observe and document different activities.

- instruction and practice in using a tape recorder

- pretesting and revision of field instruments

Materials prepared for the week-long training include: a course agenda; a summary of the objectives, methods and desired outcomes of each assessment activity; a tentative field plan for the household depth and key informant interviews; a description of different interview techniques; procedures for completing the 24-hour food recall; a reference document on infant feeding and the importance of feeding during and after diarrheal disease; and instructions on weighing or measuring children (optional). Simple procedures for weighing and measuring children are found in Appendix C.

DRAFT A FIELD PLAN

Implementation of the household depth interviews and key informant inverviews requires preparing a field logistics plan that lists members of each field team (if there is more

than one) and provides a schedule of where and when each team will be working.

A number of factors should be considered in drafting this plan. First, take into account local logistical problems (flights, ferry schedules, market days, local customs and holidays, etc.)

Second, assign household interviews and key informant interviews based upon the number of members on the team. At least two visits to every home are necessary. Investigators can probably make two household visits per day, with time for travel to the homes, rewriting notes, and organization. If the field team is comprised of six members and there are 12 families and three key informants to visit in each community, then the field work will require a maximum of five days per community to complete. If the field team works in pairs, the time will be doubled to two weeks.

It is important to schedule the work to leave ample time for discussion and reflection on the information collected, as well as for organizing field notes and revisiting households when necessary. The research director should review the investigators' notes, make comments, and ask for clarifications. In addition, if the team is working together in one locale, it is advantageous to discuss the progress of the interviewing each night, focusing on the particulars of a given area or a specific age group. It is likely that new, important concepts to investigate will emerge in these discussions.

CONDUCT HOUSEHOLD AND KEY INFORMANT INTERVIEWS

Conducting Key Informant Interviews. Key informant interviews help identify community norms and the opinions of key people concerning these norms. It is advisable to conduct the key informant interviews soon after arriving in a community, because these discussions should aid in the identification of topics to address in the subsequent household interviews and help to clarify issues.

The key informant interview is held in a place where the respondent feels she/he can speak freely and candidly. The informant should select a convenient location and time for the interview. The interview is structured but open-ended. It is relatively short, preferably not longer than an hour in length (in contrast to the longer household interviews).

Key informant interviews, like household depth interviews, are taped, though notetaking may also be extensive. The difficulty in keeping extensive notes while at the same time listening attentively underscores the desirability of having experienced field researchers as interviewers. The key informant interviews should be summarized immediately so that decisions about modifying guides and new lines of inquiry can be made and acted on.

Conducting Household Depth Interviews and Observations. The household depth interview is the key technique for problem identification. Interviews are carried out in each home over the course of several visits which also include structured observation and nutritional and dietary assessment. Observing what normally occurs in the household becomes easier the longer the interviewer spends in the home. It is often difficult, however, to remain in the home for long periods. In this case, a series of shorter, more frequent visits should be planned, ideally covering different times of the day (morning, midday, and late afternoon).

The depth interviews are held in the home or around the housing compound. Specific interview topics, such as food preparation, should be discussed in the kitchen area so that the actual utensils used to prepare and serve the food can be observed. This facilitates conversation and permits the interviewer to compare reported practices and beliefs with actual behavior. Investigators should move around the home with respondents, who may wish to continue their daily chores during the interview. Specific topics, such as dietary and morbidity recalls, require greater concentration on the part of respondents. These should be pursued in the most comfortable environment possible, at a time when the respondent is not distracted by other tasks.

Prior to initiating the interview, it is important to establish some credibility or level of acceptance with the family. Some projects may want to hold a community meeting before field work begins to introduce the interviewers. In other places, it is best if the interviewers make a brief initial household visit by way of introduction. It is important to explain why the information is being collected. It is not always advisable to identify the interviewers by profession, especially if they are doctors or nurses, because this immediately establishes set behavior/response patterns by respondents.

Establishing rapport with respondents is generally not difficult if interviewers are sympathetic and speak the local language. Once rapport is established, it is not difficult to fill time at the house, as the family will not feel they must treat the interviewer like a guest, but will go about their chores, leaving the interviewer to complete notes or to help. Questioning does not have to stick to the guides. If the interviewer is in the house repeatedly or for an extended period, introducing discussion about the neighbors or local problems can divert the conversation from the family but still reveal the respondent's views. Remember, it is fine just to relax. If the mother sits in the shade for a minute to shell peas, sit with her. Let her begin the conversation.

When the interview begins, it is easiest to start with the basic questions listed earlier: name, address, and family composition. After this information is obtained, informal discussion is pursued. The interviewer's role is to guide the conversation by asking different types of questions, probing, and requesting clarifications. During each interview the investigator obtains views and specific facts from the respondent, being

careful to keep these interactions free of suggestions of "correct" or desired responses.

Unlike formal surveys, in which responses are brief, depth interviews encourage clarification on what each person says. Clarification is most useful when it is directed toward understanding the respondent's usage of a term or object rather than the meaning he or she ascribes to it.

Elaboration of a response to reveal its fuller meaning is often achieved through repetition or rephrasing a question. Depth interviewing enables the exploration of new themes and issues as they emerge by asking a question more than once, with a slightly different focus.

If a respondent seems reluctant to converse because s/he does not think s/he has any information to offer, the interviewer must encourage confidence and offer assurance that what s/he does know is germane to the project.

Structured observation is a pre-determined method for obtaining a specific piece of information (food distribution at meal time or food preparation by the mother, for example). Interviewers may also notice something casually (the presence of a food or other products in the home, for example). The inclusion of observation in the field work makes the assessment a flexible activity, which enables the incorporation of new ideas and concerns as they emerge naturally.

ANALYZE THE RESULTS OF THE FIELD ACTIVITY

Key Informant Interviews. The notes taken during the interview are reviewed and analyzed each night so that important issues or insights can be used to modify the question guides. Information from the key informant interviews is summarized by topic and content and discussed among the team members during the course of the field work. All key informant interview results (summaries, tabulations, and insightful verbatim answers) should be analyzed by area and type of informant (for example, compare all pharmacists' views, or the opinions of all midwives). The analysis should also assess the extent to which key informants' observations on common practices accurately reflect what mothers actually say, and the extent to which they influence mothers.

Household Depth Interviews and Observations. The results of the household depth interviews are reviewed daily by the team throughout the course of the field work to identify areas that require clarification or additional study.

Summarize each guide for each family in a standard way, making judgments when necessary about the household practices. (A sample summary sheet is in Appendix B.) Summary sheets can be filled out in the field each night by the investigators or after all the depth interviewing is finished. Completing the summaries immediately is preferable because the information and impressions are still fresh.

Decide how to sort the information (i.e. by locale, by whether the child was sick, recuperating, or not ill on the day of the interview). Then create tally grids for important pieces of information. Tally grids can present one "variable" for all households in the sample, if there are not many, or they can include several "variables" for just one community. (See Appendix D for a sample tally grid.)

Tally grids enable the field team to easily observe patterns and differences between families and areas. For example, feeding practices during the last bout of diarrhea could be analyzed by the age of the child (illustrative categories are 0-4 months, 5-10 months, 11-18 months and older than 18 months) and whether the child is sick (observed behavior) or not sick (reported behavior). If treatment appears to vary by areas, then grids should be structured to facilitate this tabulation.

Examples of the type of data that can be analyzed on tally sheets are:

- o breastfeeding practices by morbidity status and area
- o exclusive breastfeeding for 3 months, breastfeeding frequency at home, and breastfeeding duration
- o ingredients and consistency of weaning food by morbidity status, age, and area
- o mother's idea of the health status of her child compared to the investigator's view
- o a composite score for household hygiene by health status of the child
- o a feeding style score for the household by health status
- o types of diarrhea by area
- o feeding during and following the last bout of diarrhea by area
- o type of treatment given during last bout of diarrhea by area

Draw conclusions on each topic by tallying all of the information on each page and comparing the different cells. Write the conclusions on each tally sheet.

Summarize the feeding history and diet recall information for each child separately, using one page per child. Each of these pages should be coded with the age of the child, the area where the child is from, nutritional status (optional), the child care situation (mother at home, etc.) and whether or not the child was sick on the day of the interview or is considered "sickly." This coding will permit sheets to be shuffled as needed to conduct various analyses.

These may include:

- o breastfeeding patterns by area, nutritional status, illness frequency, and child care patterns
- o transition to solid food -- what food and when introduced, by area and nutritional status
- o feeding frequency on the day of the recall by age, area, and the child's state of health
- o feeding (what foods, how often, how much?) during the child's last bout of diarrhea, by age and area

Each page should contain a diet history for the child from birth to the present, a listing of the foods the child ate on the day of the recall, and an analysis of the diet recall by: breastfeeding frequency; frequency of other liquids; frequency of feeding solid foods; number of foods and amounts given; and, if possible, a rough calculation of calorie and protein adequacy as well as the salt content and osmolarity of foods. (The calculation of calorie and protein adequacy and salt and osmolarity can usually be done by a trained nutritionist, who has tables that list the nutritional content of local foods.) The mother's assessment of how "normal" the recall period was should also be included. (A sample diet sheet is in Appendix D.)

WRITE THE REPORT AND PREPARE FOR CONCEPT TESTING

The final report for the problem identification period should include:

- o an introduction and brief summary of field procedures
- o a description of the situation in the communities studied (this information will be drawn primarily from the recruitment sheets and will cover characteristics of all the households surveyed from which the few sample households were selected)
- o a description of the participating families and key informants
- o a description of the prevalence of diarrhea among study children
  - Are different types of diarrhea recognized?
  - What are the perceived causes?
  - What are the treatments for each and why?
  - How does the child's age affect treatment practices?

- a detailed account of child feeding practices and feeding "style"
  - What are breastfeeding patterns (initiation, frequency, duration, supplementation)?
  - What are weaning patterns (age of introduction of foods, type of food, preparation, mode of feeding, quantity and quality)?
  - Do mothers or other child caretakers have a concept of appropriate feeding practices such as amounts of food for children? (Often, mothers believe a child should not eat a lot because it will make him/her "greedy" or too fat.)
  - Does a child's behavior influence child feeding decisions made by the mother? What behaviors elicit a particular response from a mother? (For example, in Swaziland in homes with twins, the feeding patterns of each twin were often different because the mother felt that the "constitution" of each child was different, and in fact, because the children behaved differently. One child insisted on being breastfed more than the other, for example. Child-determined feeding patterns also have been observed in Weaning Project research in Indonesia and Cameroon.)
- a summary of the deviation from the normal feeding pattern for children who are sick and/or recuperating:
  - Do mothers deliberately withhold food during some or all forms of diarrhea? Why and what is the effect?
  - Do health personnel recommend no food? Are mothers concerned about increasing stool volume or prolonging the diarrhea?
  - Are special food preparations given during diarrhea? Following it? How is the food given? What are the effects of these changes in diet?
  - Is there a concept of recuperation/recuperative feeding among mothers?
  - What are mothers' feeding practices once the diarrhea decreases in volume or improves in consistency, and through the period of convalescence?
- an analysis of the benefit or harm of the general feeding practices and the practices during or following diarrhea. This needs to be assessed

carefully. One should examine mothers' actions objectively, assuming neither that these are always good because they have evolved naturally over generations, or always bad because they do not match the scientifically "ideal" practice. The aim is to learn how to close the gap between scientifically "ideal" behavior and actual behavior, building on current practices to the extent possible.

- o information on media use and sources of information on diarrhea/child feeding and
- o conclusions and recommendations for areas requiring careful study during the household trial activity

At a minimum, the detailed account of child feeding must be completed before the planning of the household trials. It will serve as the basis for deciding the most logical and practical dietary improvements to try with the mother.

Box 7 describes the steps to be followed to determine priorities and the specific practice changes that will form the basis of the intervention trials. This activity can be done prior to finalizing the report of the household interviews. The priorities can subsequently be incorporated into the conclusion and recommendation section of the report.

DETERMINING BEHAVIOR MODIFICATIONS TO TEST IN THE INTERVENTION TRIALS

- o Divide the population by children's age using recognized transitions in practices (e.g., when a child begins to feed itself) and mothers' perceptions of child development (when children are "ready" to do or eat specific things). For example, the segments are often a variation of the following: 0-4 months, 5-9 months, 10-18 months, and 19 months and older.
- o Compile a worksheet (see sample in Appendix E) for each age segment that lays out, in column form, a description of:
  - actual practices by age grouping as discovered in the interviews and observations

    (Practices to include are breastfeeding patterns; use of milk and other fluids; introduction of solid foods; treatment of diarrhea; feeding during diarrhea; and practices during recuperation. Notes should also be kept on how many of the children in each age segment were sick on the day of the interview. Remember to keep in mind whether actual practices are observed or reported.)

- ideal or expected practice for each of the actual practices noted

- reasons or resistances that prevent the population from following the ideal practices and the strength with which they are felt or adhered to

  (For example, the reason mothers may not increase the amount of food offered to children following an illness episode may simply be lack of knowledge. This may be easy to change. On the other hand, mothers may not feed children porridge during diarrhea because they believe it may worsen the diarrhea. This may be a strongly held belief that is difficult to modify.)

- areas where change is possible and the nature of the change

  For example, it may be possible for children to eat more food, not by increasing feeding frequency, but by having the mother offer more food at each meal. However, the best way to improve calorie intake is by improving the food's consistency by decreasing the water content. All practical options that will lead to the desired nutritional benefit should be explored.

o All of the different behavior change options, including motivations, reasons, and benefits that would encourage mothers to change their practices should be listed on paper. This list contains benefits the program planner feels are important and that are meaningful to the mother. For example, the program planner might consider a practice important to keep the child well hydrated and the research might indicate that mothers are worried about their child's weakness during illness. In this case, the benefit or motivation for continuing fluids and foods would be to prevent weakness.

EXPERIENCE IN INDONESIA
HOUSEHOLD DEPTH INTERVIEWS AND OBSERVATIONS FOR THE PROJECT TO IMPROVE WEANING PRACTICES

Organizations and Individuals Involved:

The project is managed by one subdirectorate of the Nutrition Directorate, Ministry of Health. The research was carried out by a principal investigator hired from outside the project, a Ph.D. anthropologist with health project experience. The interviewers were local health personnel recruited specifically for the task. Field supervisors were from the project management group at the national and provincial levels.

Time:

This work was carried out in two very distinct areas of Indonesia. The research plan was elaborate in both areas.

- Preparation and training: 4 weeks.
- Fieldwork: 6 weeks.
- Analysis and report writing: 8 weeks (including a one-month Islamic holiday)

Cost:

Costs totalled approximately $10,000 and included the salary of the principal investigator ($2,000/month), travel from the capital to the field, field workers' salaries, and miscellaneous materials (paper, pens, tape recorders, etc.).

Examples of Insights for Project Development:

- Although mothers were breastfeeding their children for quite long periods, they were not breastfeeding fully beginning with offering the first milk. In addition, they favored one breast, which caused the milk in the other to dry up.
- Mothers had no concept of the quantity of food needed by a child for adequate growth.
- Mothers tended to let their children determine when, what, and how often they ate.
- Calorie and protein intake became extremely low by the time the child was nine months old.
- Children's illness patterns influenced mothers' work patterns, not the reverse. Mothers with sickly or undernourished children tended to stay home.

- While mothers did not withhold breastmilk or food from children with diarrhea because of fear of the child becoming weak, they definitely gave less food to sick children because of their belief that a sick child "doesn't want to eat."

Lessons:

- Simplify. Too much contextual information on the community, food availability, ceremonies, etc. was collected that was not useful to program development.

- Do more data analysis in the field. There were no summary sheets or ways for the field workers to begin to pull their information together. All analysis was left until the end.

- Do the key informant interviews early. The information gleaned from them can save time.

- Do not schedule too many field activities simultaneously if good supervision is required. It is difficult for the principal investigator and supervisors to move around and supervise.

- Supervise well. The principal investigator should accompany interviewers occasionally to offer interviewing advice.

- Structure observations as much as possible to ensure that the same behaviors are observed in the same way.

- Spend longer periods of time with the family to observe in a more relaxed fashion. (In Indonesia, the interviewers visited each house three times, for periods that were long enough to complete the required question and observation guides but not long enough for more relaxed observation and discussion.)

PHASE II

INTERVENTION OR CONCEPT TESTING

During Phase II, intervention testing, the population's ability and willingness to change certain practices is investigated. This is done through actual trials of new practices in the homes of target group mothers (Step 3) and through focused group discussions (Step 4). In contrast to pretesting educational materials for clarity and cultural relevance, this phase tests the feasibility of the advocated behaviors.

The testing of behaviors is conducted with three types of individuals: individuals who participated in the household interviews, individuals not exposed to the research process, and individuals who currently provide advice on the dietary management of diarrhea, to further evaluate the concepts and recommendations. While it is desirable to do both Steps 3 and 4, they should be considered together and the best mix chosen, given program resources. If the two steps are carried out consecutively with no overlap, they should require approximately two months.

These steps are not found in most research methodologies. They are added here because experience has shown that their benefit to program design is worth the additional time and expense. Just as a commercial marketer would not launch a new snack food before a pilot test, we should not formulate and promote new feeding regimes without pilot testing them for mothers' reactions. A great deal is learned during this step about how people will respond to a program's recommendations and about the most important resistances to change.

STEP 3: PLAN AND CONDUCT HOUSEHOLD TRIALS OF PROPOSED BEHAVIOR CHANGES

- o For each age group, develop several realistic recommendations for improving dietary intake during and following diarrheal disease.
- o Develop a guide to assist in the implementation of the trials.
- o Train team members in the implementation of the trials.
- o Conduct the household trials. (See Box 8.)
  - Modify the sample. Generally the trials will take place in the same households interviewed during Phase I. It may be necessary to select additional households within the same population units in order to implement trial behavior changes in households with children who are currently suffering or recuperating from diarrhea.
  - Conduct the trials. Make an initial visit to discuss with the mother specific recommendations that she will agree to try. After the trial hold a follow-up interview to find out how mothers followed the suggested practices, why, and their positive and negative reactions.
- o Analyze the results of the trials.
- o Write a report on the activity to prepare for Step 4.

DEVELOP SPECIFIC BEHAVIOR CHANGE RECOMMENDATIONS

Specific behavior change recommendations are established for each age group, based on the findings from Phase I of the research and the analysis of how to close the gap between real and ideal practices (see Box 7). No more than four change recommendations per age group should be offered to choose from. Even if it seems that there are more than four necessary recommendations to improve feeding practices, try to limit options to those practice changes that have the greatest chance for success.

For example, recommendations might include: (0-4 months) increase breastfeeding frequency during and following diarrhea; (5-8 months) during diarrhea, prepare and feed a modified weaning porridge that is soft but nutrient dense (this could involve the use of malt) or increase the frequency of feeding these children; continue with increased frequency during recuperation but also increase the quantity per meal by two tablespoons per meal; (9-18 months) give the child a special energy-dense food for two weeks following diarrhea (for example, give more peanut paste or foods cooked with oil).

PREPARE THE GUIDE FOR THE INTERVENTION TRIALS

The guide should be designed to enable the field investigator to rapidly determine which practice improvements are most appropriate for a particular mother, to provide the necessary nutritional information to evaluate the change, and to ensure that the suggestions offered are specific and well-suited to each mother. (See Appendix F for sample guide.)

The guide should contain the following:

- An assessment of whether the child has gained weight or remained healthy since the depth interview. If the child is new to the research, find out his/her nutritional status (optional) and recent health history.
- An assessment of any change in feeding practices or the activity level of the child since the depth interview.
- A 24-hour food recall for the child.
- A rapid assessment form based on the assessment of recent health and dietary intake, to aid in selecting the appropriate recommendations, e.g., those for a child with diarrhea, recuperating from diarrhea, or just with dietary shortfalls.
- A "menu" of appropriate recommendations for children at different ages.

- Space to record the recommendations discussed with the mother and her positive and negative reactions to each.

- Space to record the recommendations that the mother agrees to implement and her (and the child's) immediate reaction to it, especially if a demonstration of a new food is involved.

- A place to record, during the follow-up visit, the mother's comments once she has tried the recommendation.

TRAIN THE FIELD TEAM FOR THE INTERVENTION TRIALS

A short refresher training for field team members should be held before the implementation of the household trials. It is important that the same interviewers return. The course should include:

- a review and discussion of the findings from the problem identification phase

- discussion of the ideal versus the actual practices for each target group and the nutrition or health science reason for concern

- discussion of the rationale, procedures, and how to use the discussion guide

- a review and practice conducting a 24-hour food recall

- a review of anthropometric techniques and calculation of nutritional status

- techniques for and practice in motivating respondents to adopt recommendations

IMPLEMENT THE TRIALS

Modifying the Sample. At this stage of the research, the sample of households may need to shift because the behavior change recommendations (mostly for changes during and following bouts of diarrhea) need to be tried by mothers whose children actually have diarrhea or are recuperating.

Upon return to the communities, households participating in the first phase of the research should be revisited to see if they qualify for the trial. Find out if the family and child are still at the house and if the child is or has been ill with diarrhea in the last two weeks. If nutritional status information is collected, weigh the child to see if s/he has gained weight since the last interview. If the child is ill or has not gained weight, the families should qualify. If the child is healthy and

it has been more than two weeks since s/he had diarrhea, the research director should decide whether to include the family. In most cases, several additional families living within the same population unit will have to be recruited to have enough trials with children who actually have diarrhea.

It is easiest to do trials where rapport has been established. If the interviewers have problems in "new" households, they can invite the new mother to the house of a mother from the original sample to listen and observe. It is fine if the number of families in the intervention trials exceeds those in the depth interviews or if they fall short by a few (2-3) children.

Conducting the Trials. The purpose of the intervention trial is to get the target audience's reactions to proposed behavior changes. Negative reactions and unsuccessful adoption are as important as positive reactions and successful adoption. The reasons why a practice was not followed and under what conditions it might have been, as well as any modifications that might have been made in the recommended practice during the trial, are all important research findings.

The trials will probably take less time to complete than the depth interviews, provided that case finding is not too difficult. For the purposes of estimating, interviewers can probably visit two or three families each day (if they are not too dispersed) for the first visit. Three to four days should separate the initial and follow-up visits. Another option for carrying out the trials may be for the interviewer to return to the house each day (rather than after four or more days) to assess the child's condition and response to the advice. If the child's illness is changing in ways that are perceptible to the mother and influence her feeding decisions, then these can be recorded and additional recommendations can be offered.

Although it may seem difficult to ask the mother to change practices, at least in the households where rapport is established, families are usually delighted to see the interviewer return and often view this counseling as a reward for their earlier participation.

CONDUCTING THE TRIALS

It will be necessary to visit the same household at least twice to complete the trial. If the household did not participate in the problem identification phase, then a preparatory visit is needed to get acquainted with the family and child. A modified depth household interview can be conducted. The procedure to follow is described below.

Initial Visit

- Determine the nature of the diarrhea, its frequency and duration, and what the mother has been doing with respect to treatment and feeding of the child. Or, find out how long it has been since the diarrhea stopped and how the child is eating. Assess the situation through questioning and 24-hour recall and select the appropriate behavior modification(s) for the mother to try. (A child with very severe diarrhea that might be life threatening should be referred for medical care and not participate in the trial to improve feeding practices.)

- Discuss each appropriate recommendation with the mother to get her opinions and reactions. Motivate the mother to adopt one or more of the recommended changes if she is resistant to do so, and carefully note what the mother's hesitancies are and how they were or were not overcome. Try to persuade the mother to adopt the behavior change for the next few days.

- If a new infant food or drink will be tried, prepare it with the mother during the visit. If the child should eat more food at each meal, stay with the mother while she tries to do this. If possible, help her to successfully complete the recommendation once before leaving her home.

- Make an agreement with the mother on the specific changes she will try and set up an appointment with her to return in about four days to get her reactions and opinions.

Follow-up Visit(s)

- Repeat the 24-hour food recall and ask about the progress of the illness. Note any changes observed by the mother.

- Discuss whether the mother followed the advice, what happened, and her opinions on the recommendation.

ANALYZE THE TRIAL RESULTS

During the trials, investigators keep summary sheets that contain the child's name, age, morbidity/nutritional status, before and after diet recalls summaries, behaviors discussed and demonstrated and reactions, behaviors mothers agreed to try, and reactions and follow-up.

After the fieldwork is completed, the results for each target group are tabulated from the summary sheets by community and age of the child. In the initial analysis, it is important to note which children are either sick or malnourished to see if those who do not comply with the changes are only the sick children's mothers or if there are other factors. In this analysis, include:

- o recommendations offered
- o changes in practices agreed upon
- o outcome of the agreement (was it kept, modified, or not followed, and why)
- o reactions from the child and mother
- o comments by other people about the recommendations
- o comparison of the two 24-hour food recalls
- o comments from the investigator

Analysis of the tabulated information will enable the research team to:

- o determine the most appropriate segmentation of the target groups (by age of child, locale, etc.) for further research and/or the educational program
- o identify the specific concepts (practice changes) for each segment that were most frequently recommended and most often implemented and/or would impact most on health and nutrition
- o identify the concepts/practices that warrant further discussion (testing)
- o establish who in addition to mothers should be included in Step 4
- o identify other concepts that should be examined further during the focused group discussions because they could not be studied through the household tests (e.g., general notions about how to keep children healthy, hot and cold foods, hard and soft foods, and feeding colostrum)

WRITE THE REPORT ON THE HOUSEHOLD TRIALS

The summary report of the household trials should include:

- A summary of conclusions, for each age segment, on which recommended behavior changes (feeding practices during and following diarrheal illness) are most likely to be accepted and adopted and to have the greatest impact on children's dietary intake. Particular area differences should be noted and any other factors such as patterns of child care that directly affect the adoption of behavior changes should be highlighted.

  As part of the conclusions for each age segment, discuss what did not work and why. For example, during trials in Indonesia that called on mothers to add green leafy vegetables to the children's porridge, it was discovered that mothers were stopping the practice because it was turning their children's stools too green--a condition they associated with illness.

  Adaptations that mothers felt should be made, particularly practices, should be highlighted. For example, during some trials in Indonesia, which called for the mothers to add oil to their children's porridge, we learned the practice needed to be adapted by region. No mother was willing to add drops of oil to her child's food, but some would cook the rice porridge in coconut milk, while others would fry ingredients to mash with the rice porridge.

- A discussion of the necessary conditions for achieving change or overcoming resistance. Perhaps there are people who are critical to decision-making who must sanction changes before others will try them. Or, there may be basic concepts that must be communicated before the specific changes will occur, for example, convincing mothers that diarrhea is not a critical step in child development.

- A list of critical issues to explore during the focused group discussions and the type of people who should participate in these discussions.

EXPERIENCE IN ECUADOR
HOUSEHOLD INTERVENTION TRIALS TO IMPROVE WEANING PRACTICES

Organizations and Individuals Involved:

The project is the responsibility of the Ministry of Health's Department of Promotion and Protection, which also coordinates the government's National Child Survival Program (PREMI). The formative research was assigned to the Ministry's Institute for Research in Social Medicine and Nutrition (ININMS). A senior-level physician and nutrition researcher with qualitative research experience is the research director. She leads a multi-disciplinary research team comprised of university-trained physicans, anthropologists, nutritionists and social workers. Three team members are from the ININMS research staff; the remaining five field investigators are contracted through a personnel agency, which also has responsibility for all project administration.

Time:

Since the goal of the project is to aid in developing a nutrition education strategy for the National Child Survival Program, work is being done on a national level. The sample was selected to represent different ecological and ethnic realities of the country. It includes household depth interviews and intervention trials in 15 communities located in seven provinces. Two rounds of presidential elections were held during the field work period, but neither interrupted field activities.

- o Preparation and training: 3 weeks
- o Fieldwork: 6 weeks
- o Analysis and report writing: 4 weeks

Cost:

Major costs include the salaries of the contracted field workers (the ININMS staff receive no remuneration beyond their regular salary), per diem and transportation (air tickets and gasoline) for all project investigators and a chauffeur (when needed), and materials and supplies (paper, film, selected food items). The administrative agency also charges a fixed fee. The entire protocol of preparation, depth interviews, trials, and focused group discussions cost about $18,000. The trials cost about $4,000.

Examples of Insights for Project Development:

- o Most mothers, even in the poorest areas, were willing and able to make at least small changes in their feeding practices. Many enthusiastically welcomed the recommendations, especially the weaning recipes, because they were interested in finding new ways to vary their children's diets.

- Many mothers were surprised at how much their children actually could consume at any one sitting and throughout the day. During the depth interviews, mothers had very little awareness about food quantity, both in terms of how much a child required as well as how much was eaten in a single day. During the trials, investigators prepared a set recipe, using local ingredients brought to the home. At first many mothers exclaimed that their children could never consume so much at one feeding. Investigators stayed with the mother and actually helped her feed her child. Each time, after a child consumed as much as s/he "wanted," the investigator encouraged the mother to feed more. Usually the children happily continued eating, to the mother's great surprise, drawing attention both to the idea of food quantity and to children's willingness to eat more when encouraged.

- Use of feeding bottles for juices and milk drinks is common throughout the country, except among highland indigeneous mothers. Suspension of bottlefeeding will be very difficult to achieve, especially for mothers of already weaned children because it is used as a means to pacify children and to keep them occupied.

Lessons:

- Try to have the same investigators return to the same families for the household trials. It saves money and time because they know the location of the home and the families and have established rapport. If new families are recruited, assign an investigator who has previously worked in the community. S/he will know families and key informants (and vice versa) and how to get around. This will save time in identifying new eligible participants.

- Do not plan a long gap between the depth interviewing and the intervention trials because conditions may change in the communities and among sample families. In areas where there is a lot of migration and movement, it may be difficult to locate participating families. Also important to consider is the fact that the target children in the study will be older. If there is a long gap between depth interviewing and the trials, provisions should be made to recruit new families with very young children or to carry out focused group discussions among mothers with newborns (0-4 months, for example).

- Carefully plan the field logistics. When a large number of communities spread throughout the country must be visited, budget and transportation problems may end up dictating how the trials are conducted,

particularly the time between trial visits. Although it is ideal to have about four days between visits to allow time for experimentation and maintenance of the proposed behavior changes, this may not always be possible. If timing is a problem, try to structure the fieldwork so that investigators spend more time with families (for example, returning every day to households with children suffering from diarrhea) or work on analysis and report writing in the field.

- Leave a reminder with the mother. In areas where mothers (or at least one family member) are literate, it is nice to leave a written reminder of what the mother has agreed to do. In Ecuador, recommendations were given as "feeding prescriptions" -- written receipts with indications for the agreed-upon behavior changes. For example, "Feed 8 tablespoons of **fuersan** (a home-mixed weaning food) 3 times a day."

STEP 4: PLAN/CONDUCT FOCUSED GROUP DISCUSSIONS

- o Decide who will conduct the groups.
- o Select the sample.
  - Choose the sites for the focused group discussions.
  - Choose the type of participant.
- o Develop the question guides.
- o Train the moderators and notetakers.
- o Recruit the group participants.
- o Conduct the focused group discussions.
- o Analyze the results. (See Box 9.)
- o Write a summary report on this activity.

Focused group sessions are thematic discussions among a small, homogeneous group of potential program beneficiaries or people who influence them. Focused group discussions afford program designers an opportunity to learn directly from their future "clients," in the client's own words, what they think of certain products or why they uphold certain practices, and the benefits they hope to experience. Although not appropriate for documenting actual practices, this is an excellent technique for learning about attitudes and perceptions.

The popularity of focused group discussions has grown dramatically in the past few years, and they now are viewed by many as a quick research technique applicable to a wide variety of situations. While the focused group discussion is an extremely valuable research technique, like other techniques, it must be used correctly. Among other considerations, finding the right people to conduct the groups and recruiting participants carefully are both critical.

Focused group discussions are recommended at this stage in the research to test already defined behavior change recommendations and to obtain "top of the mind" responses to the ideas from people who have not been exposed to the research. The focused group discussions are conducted among mothers (and other child caretakers) who were not involved in the development of the recommendations and individuals who currently provide information on the dietary management of diarrhea and probably would use the educational materials and messages that result from the research.

Focused group discussions are not recommended for concept testing in two circumstances: first, when moderators with

good local language skills, verbal skills, and experience in abstract thinking are not available; and second, when the behavior changes to be tested are few in number, or the population area is small and confidence in the information gathered and the conclusions drawn thus far is high. However, if the project has a large and somewhat diverse target audience, this step is strongly recommended.

DECIDE WHO WILL CONDUCT THE GROUPS

Although focused group discussion procedures can be listed and guidelines given, the best people to conduct focused groups are those with experience and special insights or knowledge of the target population. If possible, this field activity should be contracted to a market research firm or a social science research group skilled at using the technique. If skilled professionals who speak the local language are not available to serve as moderators, the most adept interviewers from the research team that conducted the household interviewing can take on this task. In this case, several practice groups should be run and analyzed under the guidance of a trained moderator.

If the project staff is responsible for carrying out the focused group discussions, three different types of people are needed:

- **recruiters** to locate and invite eligible participants (who may also have participated in the household depth interviews)
- **moderators** to conduct the groups
- **notetakers** (who also may have been members of the household interview team) to list topics discussed and the reactions of the group participants, assist with the transcription, and ensure that the entire discussion is recorded

Some characteristics of a good moderator are described below.

- The moderator should not express an opinion either verbally or through body language (e.g., by shaking the head or frowning), but should remain neutral during discussion.
- An ability to formulate questions and respond articulately and appropriately to the commentary of the group is essential.
- The moderator should be involved with the participants and the subject matter in order to ensure that true feeding practices are being discussed and that participants understand not only what was said but also what was meant. Knowledge of the subject matter will mean that interesting

observations from the participants are not overlooked.

- The moderator must be flexible in the use of the question guide. Lines of inquiry should be committed to memory and then introduced according to the conversation rather than in a preset order.

- The moderator's ability to observe and listen well will ensure that his/her questions and comments are germane to the discussion, thereby stimulating greater participant involvement.

SELECT THE SAMPLE

Choosing the Sites for the Focused Group Discussions. Choose sites for the focused group discussions in areas similar to those where the depth interviews took place, but also include locations in the project area where the lifestyle or living conditions are distinct from those areas that were selected for the household interviews. The same geographical areas may be used, but if there is a minority ethnic or religious group that was not sampled during the household interviews, representatives could be included here.

Although new areas may be added, it is preferable to limit these to no more than two, or the logistics become too complex. A maximum of six sites is sufficient for most programs.

Plans should have some built-in flexibility, because the total number of discussions should depend both on the number of segments identified (sites and types of participants) and the level of satisfaction of the research team regarding the discussions as they take place. If a discussion was dominated by one person or for some reason was unusual, it should be repeated. This will require finding another site with similar characteristics to the first.

Choosing the Type of Participant. Each discussion should include six to eight participants, selected on the basis of their similarity on particular characteristics. The important characteristics to include should be listed, and those most relevant for each site selected and specified in the sampling plan. For example, the desirable group characteristics might be:

1. young mothers with a child under 36 months who has had diarrhea in the past two weeks

2. older (experienced) mothers with a child under 36 months who has had diarrhea in the past two weeks

3. mothers who work outside the home more than six hours a day and have a child under 36 months who has diarrhea

4. mothers-in-law with a daughter-in-law and a child under 36 months in the house

5. fathers of young children

6. community health workers and/or heads of mothers' clubs who have educational responsibilities

7. clinic nurses

The sampling plan could be as follows. In the urban areas, groups of people in categories 1, 2, 3, and 7 would be convened, while in rural areas groups 2, 4, 5, 6 and 7 would be the most relevant. Not every group needs to be covered in every site. For each segment identified (e.g., urban mothers with a child with diarrhea in the last two weeks), try to do at least two groups to verify results. Exercise caution when selecting the segments because the number of groups grows rapidly.

Developing the Question Guides. A generic guide can be developed for all groups, with variations specified for the different types of participants only if needed. Focused group discussion guides are usually just a listing of topics to cover and the type of technique that will be used to stimulate discussion on the topic. The guides do not detail specific questions, and in this way vary from the guides drawn up for the houshold interviews, because the flow of the discussion among participants will determine the order in which topics are introduced.

Examples of topics listed in a guide are:

- the health status of children, how the discussants judge health status, and characteristics of a healthy and unhealthy child (showing pictures of children may stimulate discussion)

- childhood illness and diarrhea in particular (What is done? What is fed? Explore concepts of hot and cold, soft and hard foods.)

- specific behavior changes that were successful in trials (show samples of some foods or of amounts). What do they like/not like about ideas, practices? Who would be the most believable sources of this information?

A sample guide is in Appendix H.

TRAIN MODERATORS AND NOTETAKERS

The moderator who guides the focused group discussion must be trained to be able to:

- introduce the themes to be discussed

- gain the confidence and trust of the participants

- ensure the participation of everyone in the group

- facilitate discussion among participants by drawing out relevant opinions
- control the timing and rhythm of the discussion
- be sensitive to nonverbal communication

The moderator will play a key role during the focused group discussion. The techniques and the routine steps in moderating include:

- Introduction of the participants to the process. The moderator introduces him/herself and the notetaker to the group and explains their roles; asks for the names of all participants and tries to remember them so she/he can call each person by name; explains that the object of the meeting is to get participants' help in designing an educational program about family life; explains that every person's opinions are wanted, so participants should say what they think but speak one at a time; and stresses that there are no right or wrong answers.
- Consulting the question guide for the areas of inquiry and the techniques to use to stimulate discussion.
- Clarifying an answer. After a question has been answered by a participant, the moderator should use that response to ask for clarification or further explanation. For example, "Please tell me what it means when Ibu Sri says she..."
- Substitution. The words of one of the participants should be used to rephrase an original question. However, care should be taken not to change the meaning of the question.
- Polling. This technique will help enliven a discussion or turn the group's attention away from someone who may be dominating the discussion. The moderator asks each participant individually to express an opinion. **Remember:** The object is to have a discussion among participants, **not** an in-depth interview with each participant.
- Contrasting. After polling the participants or during the course of conversation, there may be times when different opinions or practices are mentioned for the same problem or situation. The moderator should diplomatically draw out the differences and ask the group's opinion.
- Asking Why. The focused group discussion is not just another way to do a survey. The moderator's job is to generate a **discussion** that will highlight feeding practices, perceptions, and the reasons for the practices and perceptions.

- Concluding remarks. At the end of the session, the moderator should ask participants what they think about what was discussed and if they have any additional comments. Often, when participants see that the session is over, they begin to speak more frankly than they did during the session.

Although discussions are usually taped, a notetaker must be trained to:

- observe and record the group dynamics and other subtle reactions and interactions that might be of interest for the analysis
- assist the moderator by recording background information on participants
- develop a system for identifying all the participants and attributing their remarks

Training for moderators and notetakers should be designed to:

- introduce and discuss the purpose and objectives of the focused group discussions
- review the results of the previous stages of the research
- review recruitment procedures
- introduce and teach the techniques of moderating and notetaking
- provide practice in coordinating discussions and analyzing results
- supervise practice sessions first in the classroom and then in nearby locales

RECRUIT PARTICIPANTS

Following a procedure similar to that used for the depth household interviews, the participants in the focused group discussions must be recruited. Recruiters go house to house in the selected population unit to find people who meet the criteria. They use recruitment sheets that contain a few extra questions beyond those just to screen for eligibility, e.g., on educational level, number of other children. Questions on illness in general might also be included. (See the recruitment sheet in Appendix G.) Recruiters invite potential participants to join the group discussion, tell them when and where the discussion will be held, and leave a reminder card.

HOLD THE DISCUSSIONS

The group session should be held in a place where the participants will feel comfortable and free to converse candidly. It should be a place that is neutral for the participants and the moderators. For example, it is not a good idea to discuss health-related topics in the health clinic or in the home of the mothers club president. A school or village gathering place would be better.

The group usually lasts one to two hours. It begins with the moderator introducing him/herself and the notetaker. The purpose of the discussion is stated and an explanation of what will take place is offered by the moderator. The moderator explains that there are no right or wrong answers and that the objective is to hear everyone's opinion and discuss ideas and feelings openly. Permission to use the tape recorder is also sought.

The discussion begins with the moderator asking a question or making a statement to stimulate discussion. The moderator participates from time to time to direct the conversation, to involve people who are not talking, or to draw out a difference of opinion or the reasons for certain feelings or practices. Otherwise, the participants talk and question each other.

To facilitate honest responses that reflect deeper feelings than those often expressed for direct questions, projective and other techniques should be considered. For example, a food-sort might be appropriate to stimulate discussion on food classifications, or the group could be asked to complete a story that would reflect decision-making in a crisis. Photos of children can be used to ask about their lives and what makes them healthy or unhealthy.

Serving a snack can break up the discussion if the moderator feels there is too much tension or can be used to conclude the session and encourage informal discussion.

ANALYZE THE RESULTS OF THE DISCUSSIONS

Analysis is not easy and a lot of the meaning is often intuited, but some basic steps can be followed. (See Box 9.)

ANALYZING THE FOCUSED GROUP DISCUSSIONS

- Transcribe the taped discussions. It is best to do this soon after the discussion takes place. Both the moderator and notetaker work on this task.

- Analyze the transcripts for content. Note any relevant facts about the group or the participants. Each topic can be summarized on a separate page. Make summaries that indicate the major points made and where there was consensus or divergence of opinion. List special vocabulary or unusual phrases used. Leave as many direct quotes as possible in the content summary. Remember that this is not a quantitative content analysis. Trends and interesting points that arise in the group should be highlighted.

- Pull together all of the summaries for one group, such as working mothers. Summarize the similarities and differences noted within the working mother category. Are there divergences between rural and urban mothers or do they share general perceptions of their difficulties, rewards, and prospects for improving practices? The objective here is to emphasize the similarities, but also note any important differences among areas studied.

- Finally, analyze different segments to develop a profile of the entire population. Again, similarities are sought and differences are highlighted only when they seem relevant to program design for the population segment or the geographic area. Statements in this population profile are written in the following manner: "Although many families seek health services from doctors and governmental services, there is still a strong influence of the traditional sector. This is least common in semi-urban areas and most common in rural, isolated areas."

WRITE A SUMMARY REPORT ON THE DISCUSSIONS

The summary report of the results from the focused group discussions should include the following:

- a brief description of the methods

- a summary of each topic, differentiating concepts and perceptions by population segment (fathers, working mothers, etc.) and unit (urban, highlands, etc.)

- conclusions that answer the following questions:

- How widespread are the practices that were identified during the problem identification period in other communities?

- How appropriate are the proposed changes that were successful in the trials, and are they likely to be adopted in other communities? How must they be modified?

- Are there important motivational or lifestyle factors that have not been accounted for?

- Are there any additional potential resistances to new practices?

- What do health providers and other likely "change agents" for the educational program think about the recommendations?

- What are the general, underlying lifestyle characteristics of the population that can be used to position a new mixed food for young children with diarrhea? For example, should it be presented as a medicine/tonic or as a food? What do people desire for their children? To be a well respected member of the community? A government worker? Economically independent? Strong? Able to help with farm work?

EXPERIENCE IN SWAZILAND AND INDONESIA
FOCUSED GROUP DISCUSSIONS FOR INFANT AND YOUNG CHILD FEEDING IMPROVEMENT PROJECTS.

Organizations and Individuals Involved:

In Indonesia, a market research firm was contracted and briefed by the Ministry of Health about the assignment. Because of language requirements, in one area the firm had to contract with and train local persons with no moderating experience. The firm was responsible for all steps from planning through report writing.

In Swaziland there was no research agency, so carefully selected individuals from the project team or the Ministries of Agriculture or Health were selected for a focused group discussion team. After training, they practiced, conducted the sessions, analyzed the groups, and wrote the report.

Time:

Indonesia, 2 months; Swaziland, 9 months. (In Swaziland, various problems kept the group from working together, and a month-long holiday intervened as well. Analysis also took a long time.)

Cost:

Indonesia, $6,000; Swaziland, $2,000 (not including salaries, except an administrator's).

Examples of Insights for Project Development:

Indonesia

- Children are viewed as their own persons, capable of expressing wants, likes and dislikes; they thus often dictate feeding behavior.
- In general, families value the peace and quiet of rural life, although certain luxuries of the cities (especially foods) are viewed as desirable.
- The acceptability of colostrum was divided on ethnic lines.
- Mothers were unaware of concepts of mealtime and any particular frequency with which a child should eat, even though in trials mothers would increase frequency.
- Traditional birth attendants were a critical influence in initiating good breastfeeding practices.

Swaziland

- Fathers play a major role in the introduction of bottles and formula milk to young children.
- Traditional beliefs and customs are strong but people still want to appear modern.
- Great importance is placed on being a good citizen and being economically independent.
- Sour foods are generally unacceptable for young children.
- Mothers listen to and respect both nurses and doctors in the clinics.

Lessons:

- Limit the number of groups. More can be added if they are needed. Do the minimum and then decide.
- Don't assume that market research firms know how to work among the populations our programs serve. They need guidance. Watch them conduct a group to see if the moderator appropriately follows cues from the mothers.
- During report writing, ask the market research firm for periodic debriefings.
- If the analysis becomes cumbersome, call in an expert to help.
- Although verbatim transcripts are highly desirable, if they pose too much of a problem, extensive notes will serve the purpose.

PHASE III

ANALYSIS AND SYNTHESIS

The purpose of this phase of analysis is to determine the significance of the results of this research for the development of an educational strategy. All the information collected during the preceding steps should be analyzed and synthesized and then presented in a way that will facilitate strategy development.

STEP 5: PREPARE A FINAL ASSESSMENT SYNTHESIS

- Review the results and conclusions from each of the four preceding steps.
- Draft a report that becomes a brief on the research for program designers.
- Hold a workshop or seminar for program managers and designers.

REVIEW THE FINAL RESULTS OF PRECEDING STEPS

At this stage it is critical to go back to each report (the review of existing information, the household depth interview, household trial and focused group discussion) to review the findings and conclusions and pull the information together. Since learning from the research is cumulative, the conclusions arrived at early may not be reached in later research steps. At this point, it is informative to compare the results of the qualitative work with results obtained from quantitative surveys reviewed in Step 1 to see if these research findings support or conflict with other studies. Although an eye is kept at all times on filling the gaps in the existing literature, it is at this point that it is easiest to assess the contribution of this work to the body of knowledge on child feeding and diarrheal disease control for the country.

In writing the report, it is best to work with a maximum of three people who are extremely familiar with the qualitative research performed. The research director should appoint any other writers. The task at hand is not complicated but it must be done thoroughly and with program design in mind. First, draw up an outline and then review the reports to cull pieces that are relevant to program design for each section of the outline.

WRITE THE FINAL REPORT

In general, it is quicker and easier to write (and later, to read) the final report if findings from the research are listed under a heading and interpreted at the end of each section.

The report, or the summary for program designers should contain the following parts:

- A brief, two- to three-page summary of the research procedure.
- A description of the lifestyle context in which the target audience lives. This can include, for example: general outlook on life, outlook on maternal or child caring roles, aspirations for

children, view of child development, knowledge of health and nutrition concepts, utilization of government and private-sector health care facilities, household composition, income, mothers' work, literacy levels, and access to information, including participation in groups and access to mass media.

- o A description of the current nutrition and health situation and feeding practices. Most of this information will come from the household interviews. It should summarize for each age segment the nutritional status of the children in general and their health status. (Remember, they were selected because they were "diarrhea prone"). It reviews breastfeeding practices, the introduction of foods fed during or after illness, the mothers' feeding style, and other important practices related to child growth and development. Each subsection for the age group should conclude with an interpretation of the information, the extent to which it supports or conflicts with past studies, and what major problems should be tackled in the education. Any other factors that should be emphasized in the educational program or any important authority figures are also noted.

- o A concise description of possible practice changes, motivations and resistances. This information will come primarily from the household trials and the focused group discussions. Again, it is organized by audience segment (the ones being recommended for use in the education program). Each of the behavior changes that the program will recommend by segment are listed and the results of the trials are summarized. (Appendix I contains a sample of these summaries.)

- o A concise recap of all the conclusions from the research. This is a list against which the content of all of the educational materials developed for the program will be judged. (Appendix I contains a sample of these conclusions for a project that addressed general infant feeding problems.)

A Final Note: This report will be the bridge to the program. It should be a document that is easy to refer to. As the creative groups write a strategy and design materials and media plans, the program manager must constantly refer to this research document to be sure that the creative materials conform. A great deal of care and time went into the research, so findings should be adhered to.

EXPERIENCE IN INDONESIA

ANALYSIS, SYNTHESIS AND FINAL REPORT WRITING FOR THE PROJECT TO IMPROVE WEANING PRACTICES

Organizations and Individuals Involved:

This activity was carried out by the project's Central Working Group in the Nutrition Directorate of the Ministry of Health and the Weaning Project staff from Manoff International. A preliminary draft was reviewed by the field teams responsible for activities in each province, and their comments were incorporated accordingly. A national workshop also was held to present the assessment findings to representatives from various government agencies, private voluntary organizations, universities and donor agencies involved in health and nutrition-related programs. The results from this workshop were incorporated into the final assessment summary report and subsequent program strategy.

Time:

This work was carried out after reports from each preceding formative research step were already drafted, so the time required was minimized.

- Review and synthesis of information: 1.5 weeks
- Report writing: 1.5 weeks
- Translation (English and Indonesian): simultaneous with writing
- Production: 2 days
- National workshop: 3 days
- Revisions: 2 days

Costs:

Local costs for the final report were minimal and included only overtime fees for typists, paper, and the production costs. The national workshop costs included travel and per diem for invited participants, rental of the meeting room and facilities, and materials and supplies (paper, pencils, snacks, etc.).

Examples of Insights for Project Development:

- No new information was collected during this step, but its inclusion greatly aided project development. Until the activity was undertaken, the project team did not clearly see how all of the information fit together or could be used for program development. The exercise of synthesizing the information gave

everyone a greater understanding of the formative research process and its benefits, as well as the nature of the weaning problem and how it could be modified.

- Inviting potential users of the educational materials that the project would develop to a workshop to discuss the research results and strategy development was critical. It provided them not only with important child feeding information and an orientation to the research process, but also an opportunity to participate in an activity that contributed to developing the materials themselves. Program managers are often more willing to use educational materials if they are involved in developing them.

Lessons:

- Invite creative people (those that will work on developing the communications strategy and materials) to participate in the research and/or synthesis. Bringing the people who will actually translate the research findings into a workable and compelling intervention strategy into the project early on will ensure that they have a greater understanding of the target populations, the local environment and resources, and the meaning of the research results. It is difficult for everyone to remember to base decisions on the research findings and not their own beliefs and experiences. It is especially important that the program strategy reflects the research, and getting the creative people involved during or following the research is a good way to ensure this.

- Analysis and synthesis should include not just recommendations for the communications strategy but also other interventions that could aid in achieving the program's objectives. The formative research, though focused, will provide many insights into people's knowledge, attitudes, behaviors, and living environment. Even if a project is not able to implement these recommendations, it is helpful to note them at this time so they can be shared with others who could find them useful.

APPENDICES

Appendix A: Sample Household Recruitment Sheet

Appendix B: Sample Household Question Guide for Depth Interviews and Summary Sheet

Appendix C: Sample Procedures for Weighing and Measuring Children

Appendix D: Diet Sheet and Sample Tally Grid

Appendix E: Sample Worksheet for Developing Household Intervention Trials

Appendix F: Sample Guide for Intervention Trials

Appendix G: Recruitment Sheet for Participants in Focused Discussions

Appendix H: Sample Focused Group Discussion Guide

Appendix I: Sample of Recommendation Discussion and Conclusions Section of Final Assessment Report

APPENDIX A
SAMPLE HOUSEHOLD RECRUITMENT SHEET

Province: _____ District: _____

Village: _____ Geography: mountains ____ coast ____plains ____

rural _____ urban ____

Qualifying Information

Mother's Name: _____ Father's Name: _____

Child's Name: _____

1. _____ child 0-24 months Age: ____ (Months) Birthdate: _____

2. Health Status

_____ Ill with diarrhea within the last 2 weeks

_____ Not ill with diarrhea in the last 2 weeks

3. Nutritional Status (optional)

Check available records, child's growth card and/or weigh child.

a. Weight _____ Kg. b. Age at weighing _____ mo.

Well nourished _____ Undernourished _____

Group Eligibility

_____ 0-6 months without diarrhea

_____ 0-6 months with diarrhea

_____ 7-12 months without diarrhea

_____ 7-12 months with diarrhea

_____ 13-24 months without diarrhea

_____ 13-24 months with diarrhea

* Criteria to use will depend on local norms or nutritional surveillance/growth monitoring programs. Other indicators may also be used, such as arm circumference, weight gain/loss, etc.

Willing to Participate? _____ YES _____ NO

Schedule for Future Visits

Visit 1

Date: _____ Day: _____ Time: _____

Visit 2

Date: _____ Day: _____ Time: _____

Visit 3

Date: _____ Day: _____ Time: _____

APPENDIX B
SAMPLE HOUSEHOLD QUESTION GUIDE FOR DEPTH INTERVIEWS AND SUMMARY SHEET

The household depth interviews for the Weaning Project required the following question/observations guides:

Guide 1: Household Size and Composition

Guide 2: Daily Activities of the Mother

Guide 3: Patterns of Food Availability

Guide 4: Breastfeeding and Child Feeding

Guide 5: 24-Hour Food Recall

Guide 6: Child Health, Growth and Illness

Guide 7: Sources of Information; Access and Utilization of Health Services and Mass Media

Guide 8: Feeding Observation Guide

Guide 9: Household Hygiene and Possessions Observation Guide

Guide 10: Food/Meal Preparation Observation Guide

Summary sheets accompany each question/observation guide. These are completed by the investigator for each respondent in the afternoon or evening after the interview has taken place. Completion of summary sheets is the first step in the analysis process. To complete these sheets, the field investigator must either transcribe specific responses or synthesize the information obtained from several question/observation topics. The investigator frequently is asked to note his/her impressions about what s/he learned, heard or saw during the interview.

For example, in Guide 2, the interviewer might be asked to note in the summary sheet his/her perception about the physical difficulty of a mother's daily work and lifestyle, if she feels she has time during the day for leisure or additional activities, or to summarize how a mother manages child care and feeding while she works.

Guide 6 and the summary sheet which follow illustrate the types of information obtained for a weaning practice improvement program and how different pieces of information were synthesized and summarized by the field investigator. This guide was used in Ecuador by field investigators with university-level training in medicine, nutrition, anthropology, and social work. Investigators with less training may require a more structured instrument.

GUIDE 6: HEALTH, GROWTH AND ILLNESS

A. INVESTIGATION OF CURRENT STATE OF HEALTH

6.1 INVESTIGATOR: How did the mother see the physical condition of the child in the last two weeks? (Insist: The child is sickly, and from what/why? What has the mother done in these circumstances?)

_____

_____

6.2 INVESTIGATOR: Does the mother seem worried about her child's condition?

_____

_____

6.3 INVESTIGATOR: What do you see the child's condition to be, in comparison to what the mother has said?

_____

_____

B. INVESTIGATION OF THE CHILD'S GROWTH:

6.4 How does the mother know if her child is growing and why?

_____

_____

6.5 If the mother does not mention the weight of the child in question, ask her: AND HIS/HER WEIGHT?

_____

_____

6.6 Find out how the mother relates weight to eating.

_____

_____

6.7 According to the mother, how is the child in question growing in comparison to her other children (or in comparison to other children if she/he is the first child)?

_____

_____

6.8 Does the mother have a Child Growth Card (CGC)? YES _____ NO _____

6.9 INVESTIGATOR: Look at the CGC.

Is any weight marked? YES _____ NO _____

Has it been long since the last two times the child was weighed? YES _____ NO _____

Is the child gaining weight? YES _____ NO _____

C. MORBIDITY/ILLNESS

6.10 Has the child suffered from any illness recently (during the last two weeks)? YES _____ NO _____

WHAT WERE THEY? (Help the mother define the illness, sound her out about diarrhea.)

THE CAUSE: (The mother's opinion.)

What did the mother do? What did she give the child to eat/drink during and after s/he became ill? Indicate if she continued to breastfeed the child.

ILLNESS (What the mother calls it)	SYMPTOMS	CAUSE	ACTION TAKEN	EATEN/DRUNK DURING/AFTER

6.11 If the mother does not mention that the child has had diarrhea during the last two weeks, ask her if the child has ever had it.

YES _____ NO _____

6.12 (IF YES) The last time, how were the bowel movements?

APPEARANCE: _____

ODOR: _____ COLOR _____

CHILD'S SYMPTOMS: (fever, appetite, etc.)

_____

_____

What did the mother do about the diarrhea?

_____

_____

What did the mother give the child to eat/drink (during and after)? Indicate if she continued to breastfeed.

DURING:_____

AFTER: _____

6.13 Does the mother have specific names for different types of diarrhea? What are their characteristics? How does she treat each type? (treatment, feeding)

_____

_____

6.14 If the mother <u>does not mention</u> that the child has had a <u>respiratory infection</u>, ask her if the child has ever had one and how it was treated. (treatment, feeding)

_____

_____

6.15 Find out if the mother's feeding practices change during her child's illnesses. How? Why? What resistances does the mother have to giving her child food <u>during/after</u> an illness?

DURING: _____

_____

AFTER: _____

_____

6.16 Find out how the mother relates illness to weight, i.e., ask what changes she sees in her child when s/he is sick. (If the mother does not mention weight, ask her: AND THE CHILD'S WEIGHT ?)

_____

_____

GUIDE 6: SUMMARY SHEET

6.1 Actual state of health of the child:

	YES (1)	NO (0)	DK (0)
increase in weight			
active			
eating well			
without diarrhea			
without respiratory infection			
without other infections			

Score: _____ (highest score = 6)

6.2 Growth:

CLASSIFICATION	WELL		UNDERNOURISHED	
	YES	NO	YES	NO
Has CGC				
Was weighed last month (apart from recruitment)				
Believes that weight/ weighing is important				
Mother's perception: her child is growing well compared to children				
Has idea of relation between weight and health				

6.3 Illness and Feeding:

ILLNESS	CHANGE ON PRACTICE	WHY	OTHER COMMENTS

6.4 Feeding and Recovery: _____

_____

6.5 What perception does the mother have of the concept of growth and development of her child, growth in relation to his/her state of health, growth and feeding of the child?

_____

_____

APPENDIX C
SAMPLE PROCEDURES
FOR WEIGHING AND MEASURING CHILDREN

B. PROCEDURES AND PRECAUTIONS BEFORE MEASURING

1. Layout of the Manual

Each step of the measurement procedures in this manual is directed at specific participants, who are named in bold letters at the beginning of each step: e.g. "Measurer", "Assistant", etc.

2. Two Trained People Required

Two trained people are required to measure a child's height and length. The measurer holds the child and takes the measurements. The assistant helps hold the child and records the measurements on the questionnaire. If there is an untrained assistant such as the mother, then the trained measurer should also record the measurements on the questionnaire. One person alone can take the weight or arm circumference of a child and record the results if an assistant is not available.

3. Measuring Board and Scale Placement

Begin to observe possible places where the board can be positioned and the scale hung as soon as you walk towards a sample household. Be selective about where you place the measuring board and scale. It is best to measure outdoors during daylight hours. If it is cold, raining or if too many people congregate and interfere with the measurements, it may be more comfortable to weigh and measure a child indoors. Make sure there is adequate light.

4. Age Assessment

Before you measure, determine the child's age. If the child is less than two years, measure length. If the child is two years of age or older, measure height (see Annex C). If accurate age is not possible to obtain, measure height if the child is equal to or greater than 85 cm.

5. When to Weigh and Measure

Weigh and measure after verbal information has been recorded on the questionnaire. This will allow you to become familiar with the members of the household. DO NOT weigh and measure at the beginning of the interview, e.i. as soon as you enter a household, which would be more of an upsetting intrusion.

6. Weigh and Measure One Child at a Time

If there is more than one eligible child in a household, complete the entire questionnaire, including the weighing and measuring of one child. Then proceed with the next eligible child's questionnaire in the household. DO NOT weigh and measure all the children together. This can easily cause confusion and will create a greater chance for error such as recording one child's measurements on another child's questionnaire. Return measuring equipment to their storage bags immediately after you complete the measurements for each household.

This appendix is excerpted from National Household Survey Capability Program, How to Weigh and Measure Children, Assessing the Nutritional Status of Young Children in Household Surveys (New York, N.Y.: United Nations, 1986).

7. Control the Child

When you weigh and measure, you must control the child. The strength and mobility of even very young children should not be underestimated. Be firm yet gentle with children. Your own sense of calm and self confidence will be felt by the mother and the child.

When a child has contact with any measuring equipment, i.e. on a measuring board, in the weighing pants or with an arm circumference tape, you must hold and control the child so the child will not trip or fall. Never leave a child alone with a piece of equipment. Always have physical contact with the child except when you must let go of a child for a few seconds while taking the weight.

8. Coping With Stress

Since weighing and measuring requires touching and handling children, normal stress levels for this type of survey work are higher than for surveys where only verbal information is collected.

Explain the weighing and measuring procedures to the mother, and to a limited extent, the child, to help minimize possible resistance, fears or discomfort they may feel. You must determine if the child or mother is under so much stress that the weighing and measuring must stop. Remember, young children are often uncooperative; they tend to cry, scream, kick and sometimes bite. If a child is under severe stress and is crying excessively, try to calm the child or return the child to the mother for a moment before proceeding with the weighing and measuring.

Do not weigh or measure a child if:

a. The mother refuses.

b. The child is too sick or too distressed.

c. The child is physically deformed which will interfere with or give an incorrect measurement. To be kind, you may want to measure such a child and make a note of the deformity on the questionnaire.

9. Recording Measurements and Being Careful

Record the measurements in pencil. If you make an error, completely erase the error and rewrite the correct numbers. Keep objects out of your hands and pencils out of your mouth, hair or breast pocket when you weigh and measure so that neither the child nor you will get hurt due to carelessness. When you are not using a pencil, place it in your equipment pack, pencil case or on the survey form. Make sure you do not have long fingernails. Remove interfering rings and watches before you weigh and measure. Do not smoke when you are in a household or when you weigh and measure.

10. Strive for Improvement

You can be an expert measurer if you strive for improvement and follow every step of every procedure the same way every time. The quality and speed of your measurements will improve with practice. You may be working with a partner to form a team. If so, you will be responsible for not only your own work, but also for the quality of work of your team.

You will be required to weigh and measure many children. Do not take these procedures for granted even though they may seem simple and repetitious. It is easy to make errors when you are not careful. Do not omit any steps. Concentrate on what you are doing.

II. NUTRITIONAL STATUS MEASUREMENT SUMMARY PROCEDURES

A. CHILD HEIGHT SUMMARY PROCEDURE (Illustration 1)*

1. Measurer or Assistant: Place the measuring board on a hard flat surface against a wall, table, tree, staircase, etc. Make sure the board is stable.

2. Measurer or Assistant: Ask the mother to remove the child's shoes and unbraid any hair that would interfere with the height measurement. Ask her to walk the child to the board and to kneel in front of the child (if she is not the assistant).

3. Assistant: Place the questionnaire and pencil on the ground (Arrow 1). Kneel with both knees on the right side of the child (Arrow 2).

4. Measurer: Kneel on your right knee only, for maximum mobility, on the child's left side (Arrow 3).

5. Assistant: Place the child's feet flat and together in the centre of and against the back and base of the board. Place your right hand just above the child's ankles on the shins (Arrow 4), your left hand on the child's knees (Arrow 5) and push against the board. Make sure the child's legs are straight and the heels and calves are against the board (Arrows 6 and 7). Tell the measurer when you have completed positioning the feet and legs.

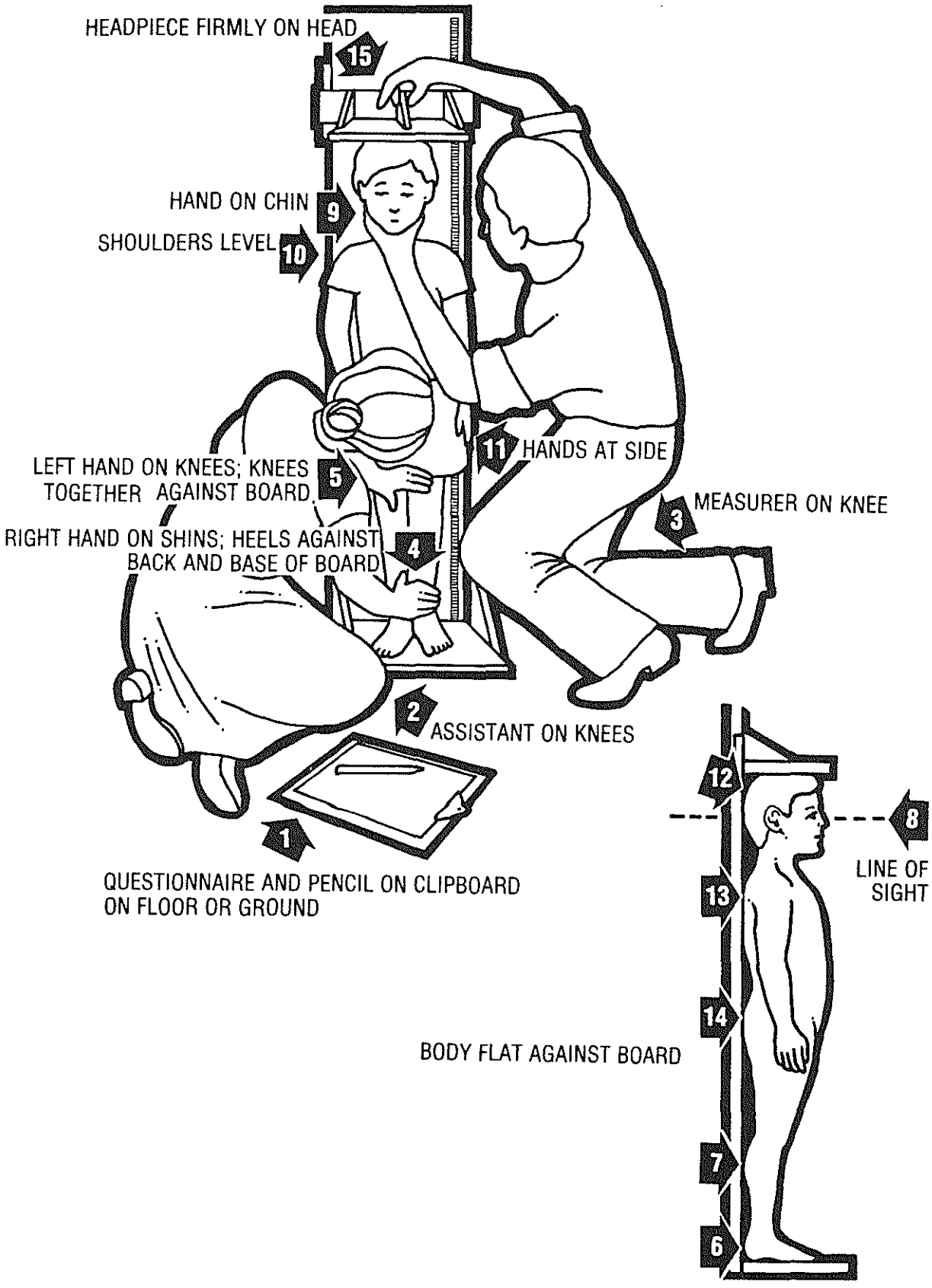
6. Measurer: Tell the child to look straight ahead at the mother if she is in front of the child. Make sure the child's line of sight is level with the ground (Arrow 8). Place your open left hand on the child's chin. Gradually close your hand (Arrow 9). Do not cover the child's mouth or ears. Make sure the shoulders are level (Arrow 10). The hands are at the child's side (Arrow 11), and the head, shoulder blades and buttocks are against the board (Arrow 12, 13, and 14). With your right hand, lower the headpiece on top of the child's head. Make sure you push through the child's hair (Arrow 15).

7. Measurer and Assistant: Check the child's position (Arrows 1-15). Repeat any steps as necessary.

*If the assistant is untrained, e.g. the mother, then the measurer should help the assistant with the height procedure.

Illustration 1

Child Height Measurement



8. Measurer: When the child's position is correct, read and call out the measurement to the nearest 0.1 cm. Remove the headpiece from the child's head, your left hand from the child's chin and support the child during the recording.

9. Assistant: Immediately record the measurement and show it to the measurer.

   NOTE: If the assistant is untrained, the measurer records the height.

10. Measurer: Check the recorded measurement on the questionnaire for accuracy and legibility. Instruct the assistant to erase and correct any errors.

B. CHILD LENGTH SUMMARY PROCEDURE (Illustration 2)*

1. Measurer or Assistant: Place the measuring board on a hard flat surface, i.e. ground, floor or steady table.

2. Assistant: Place the questionnaire and pencil on the ground, floor or table (Arrow 1). Kneel with both knees behind the base of the board, if it is on the ground or floor (Arrow 2).

3. Measurer: Kneel on the right side of the child so that you can hold the footpiece with your right hand (Arrow 3).

4. Measurer and Assistant: With the mother's help, lay the child on the board by doing the following:

   Assistant: Support the back of the child's head with your hand and gradually lower the child on the board.

   Measurer: Support the child at the trunk of the body.

5. Measurer or Assistant: If she is not the assistant, ask the mother to kneel on the opposite side of the board facing the measure to help keep the child calm.

6. Assistant: Cup your hands over the child's ears (Arrow 4). With your arms comfortably straight (Arrow 5), place the child's head against the base of the board so that the child is looking straight up. The child's line of sight should be perpendicular to the ground (Arrow 6). Your head should be straight over the child's head. Look directly into the child's eyes.

7. Measurer: Make sure the child is lying flat and in the center of the board (Arrow 7). Place your left hand on the child's shins (above the ankles) or on the knees (Arrow 8). Press them firmly against the board. With your fight hand, place the footpiece firmly against the child's heels (Arrow 9).

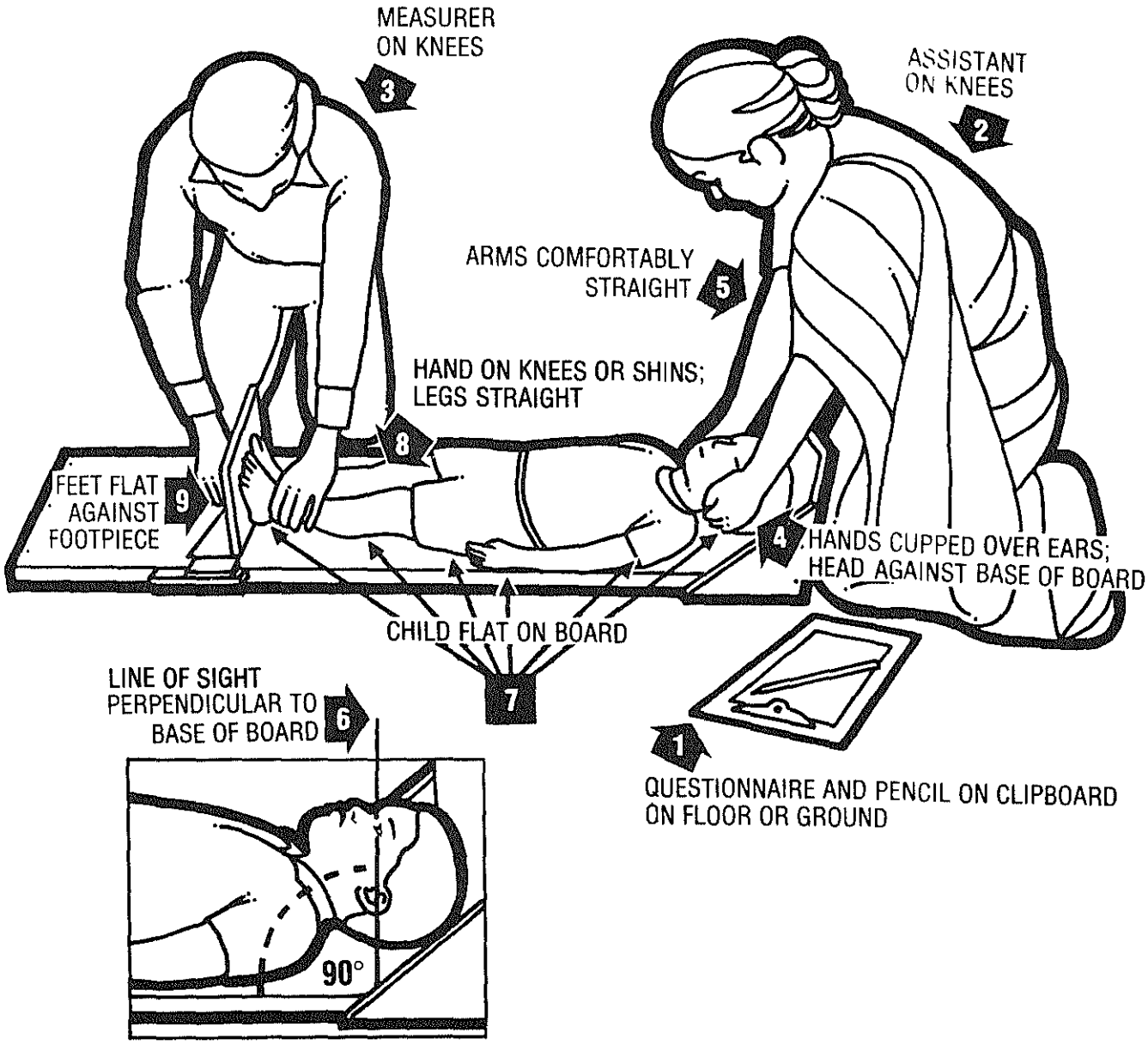
8. Measurer and Assistant: Check the child's position (Arrows 1-9). Repeat any steps as necessary.

9. Measurer: When the child's position is correct, read and call out the measurement to the nearest 0.1 cm. Remove the footpiece, release your left hand from the child's shins or knees and support the child during the recording.

*If the assistant is untrained, e.g. the mother, then the measurer should help the assistant with the length procedure.

Illustration 2

Child Length Measurement



10. Assistant: Immediately release the child's head, record the measurement, and show it to the measurer.

    NOTE: If the assistant is untrained, the measurer records the length on the questionnaire.

11. Measurer: Check the recorded measurement on the questionnaire for accuracy and legibility. Instruct the assistant to erase and correct any errors.

C. CHILD WEIGHT SUMMARY PROCEDURE (Illustration 3)*

1. Measurer or Assistant: Hang the scale form a tree branch, ceiling beam, tripod or pole held by two people. You may need a piece of rope to hang the scale et eye level. Ask the mother to undress the child.

2. Measurer: Attach a pair of the empty weighing pants, infant sling or basket to the hook of the scale and adjust the scale to zero, then remove from the scale.

3. Measurer: Have the mother hold the child. Put your arms through the leg holes of the pants (Arrow 1). Grasp the child's feet and pull the legs through the leg holes (Arrow 2). Make certain the strap of the pants is in front of the child.

4. Measurer: Attach the strap of the pants to the hook of the scale. DO NOT CARRY THE CHILD BY THE STRAP ONLY. Gently lower the child and allow the child to hang freely (Arrow 3).

5. Assistant: Stand behind and to one side of the measurer ready to record the measurement. Have the questionnaire ready (Arrow 4).

6. Measurer and Assistant: Check the child's position. Make sure the child is hanging freely and not touching anything. Repeat any steps as necessary.

7. Measurer: Hold the scale and read the weight to the nearest 0.1 kg (Arrow 5). Call out the measurement when the child is still and the scale needle is stationary. Even children who are very active, which causes the needle to wobble greatly, will become still long enough to take a reading. WAIT FOR THE NEEDLE TO STOP MOVING.

8. Assistant: Immediately record the measurement and show it to the measurer.

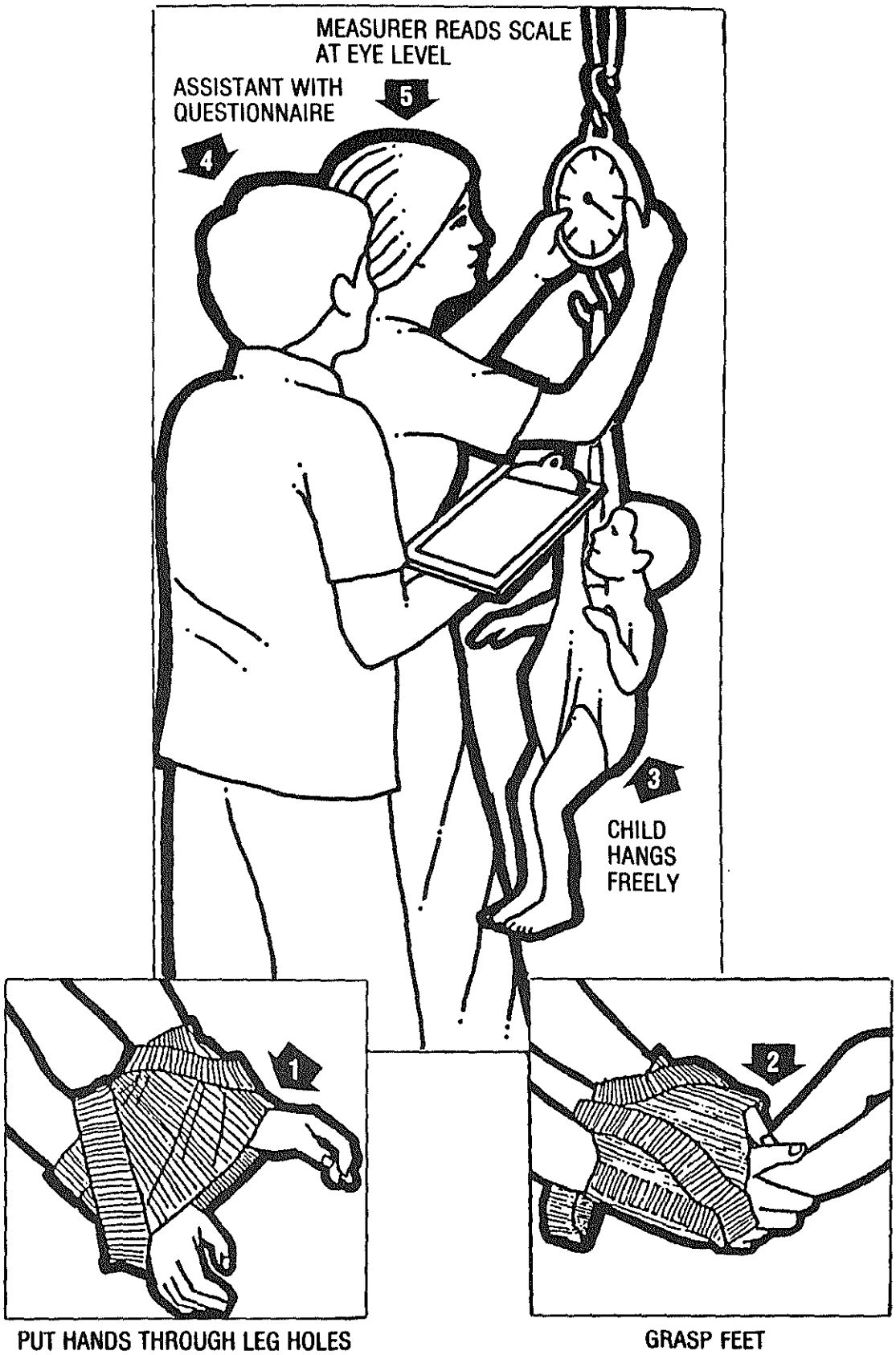
9. Measurer: As the assistant records the measurement, hold the child in one arm and gently lift the child by the body. DO NOT LIFT THE CHILD BY THE STRAP OF THE WEIGHING PANTS. Release the strap from the hook of the scale with your free hand.

10. Measurer: Check the recorded measurement on the questionnaire for accuracy and legibility. Instruct the assistant to erase and correct any errors.

*If the assistant is untrained, e.g. the mother, then weight should be taken by one person only, the trained measurer, who should also record the measurement on the questionnaire.

Illustration 3

Child Weight



APPENDIX D

DIET HISTORY AND CURRENT DIET ANALYSIS FORM

Child: _____ Mother/Principal Caretaker: _____

Age: _____ Current Morbidity Status: _____

Community: _____ Nutritional Status: _____

Diet Analysis:	BF Freq	Freq Liquid Feeds	Freq Solid Feeds	AMT	Variety of Foods	Hygiene	Feeding Style

MONTHS — CHILD IS 11 MONTHS OLD — 1 YR. — 1 1/2 YRS. — 2 YRS.

FOODS (Examples)	BIRTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Colostrum	o																								
Breastmilk	I	-	-	-	-	-	-	-	-	-	-	I													
Other Milk																									
cow											I	-	-	-	-	-	-	-	-	-	-	-	-	-	>
powder				I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
formula																									
Corn Flour Porridge			I	-	-	-	-	I																	
Soft Corn Porridge					I	-	-	-	-	-	-	I													
Packaged Baby Cereal																									
Sour Milk								I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
Boiled Greens									I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
Adult Corn Porridge								I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
Meat Relishes										I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
Bottle																									
Cup			I	-	-	-	-	-	-	-	-	I													
Spoon		I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>
Plate/Bowl									I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>

o (dot represents foods eaten on day of interview)

SAMPLE TALLY GRID

VARIABLE: FREQUENCY OF FEEDING ON DAY OF FOOD RECALL

AGE INCREASES ↓

PROVINCE:	JAWA TIMUR												NUSA TENGGARA BARAT											
VILLAGE:	Duren Sewu				Prodo				Menyarik				Cakra Timur				Selagalas				Bentek			
HEALTH STATUS:	I*		W		I		W		I		W		I		W		I		W		I		W	
01			3	3			2	2			2	3			0	0	1	1					0	0
02			-	-	2	2			2	2			0	0					2	2			3	3
03			3	-			-	-	2	2			3	2			2	2			3	3		
04			3	3	-	2					3	3	3	4					0	0			2	2
05	-	3			3	3					0	0	0	0			3	3					3	3
06	-	2			-	3			3	3					4	4	2	0			4	3		
07	3	3			3	3			3	0			5	4					0	0			2	4
08	3	3			-	2					3	3			4	5			3	2	1	1		
09	3	3					-	3	1	3			2	3			3	3			3	3		
10			3	3			1	3	3	3					5	5	3	0			3	3		
11	3	3			3	3			3	3			5	4			2	3					3	2
12	3	2			3	2			3	3			4	3			2	3			3	3		
13	1	-			-	2			3	3			6	5			3	3			3	3		
14	2	2			3	3					2	3	7	8					3	0	3	3		
15	3	3					3	3	3	3					4	3	5	5					3	3
																					4	4		16
*I = ILL WITH DIARRHEA IN THE LAST 2 WEEKS																								
W = WELL NUMBER IN BOX = TIMES PER DAY																					3	3		17

APPENDIX E
SAMPLE WORKSHEET FOR DEVELOPING HOUSEHOLD INTERVENTION TRIALS (FOR 7-12 MONTH CHILD)

Ideal Practices	Actual Practices	Anticipated Changes
o Breastfeeding is continued on demand.	o Breastfeeding is continued on demand, but feeding from the left breast predominates, particularly in the semi-urban Islamic and rural desa.	o Preparation of a special food (nasi tim) by using rice, a protein, fat, and vitamin A source, which is cooked until soft, at least once daily.
o Both breasts are used regularly.		
o Frequency of feeding should be increased to 4-5 meals daily.	o Frequency of feeding is inadequate (2-3 times daily).	o Feed nasi tim every time the family has a meal and one serving with ripe banana as a snack 2-3 times each day.
o Soft foods should be introduced and gradually varied so that the child is on an adult diet by 1 year of age.	o Nutritional intake of calories, protein, and vitamin A is inadequate for almost all children, despite the availability of appropriate foods in many households.	o If a special food cannot be prepared, have the mother take the family staple as a base and add extra ingredients such as a fat source (coconut milk, oil), a protein (tahu, tempe, beans), and a GLV (spinach, kangkung).
o Diet (meals and snacks) should be balanced in calories, protein, and vitamins.		
o The child should be fed with a clean cup/plate and spoon.	o Soft foods are continued but few children are on an adult diet (nasi biasa, for example) by 1 year.	o Feed the child with a clean plate and spoon at every sitting.
o The child should eat during every family meal and also be given additional snacks.	o The concept of feeding a child more because it needs more food (rather than expresses desire for more food) appears to be absent.	o Increase the portion size of the child's food. For example, give 2 extra tablespoons at each feeding.
o Foods should be freshly prepared and covered when stored.		
o BM and semi-solid foods should be continued during, and increased after, illness.	o The child's diet is monotonous (not deliberately varied) and consists primarily of rice, a protein source (tahu, mung or red beans, tempe), and an occasional green vegetable.	o Give more snacks, including fruit (papaya, for example).

Ideal Practices	Actual Practices	Anticipated Changes
	o Intake and diet are most limited among the Sasak Buddha. o Family staples (rice) are usually prepared twice daily. Only in some households in semi-urban areas is food prepared specially for the weaning -aged child. o Young children do not always eat with the rest of the family during "meals", and those able to sit are sometimes given a bowl of feed and left to eat alone. o Though mothers are conscious of hygiene, foods are not always covered or well protected from contamination when handled and stored, yet there is room for improvement with available resources. o Breastfeeding continues when a child is ill, but other foods are withheld. o Children classified as sick (sick-natured) by their mothers are often not fed much and are said to have no appetite (they cry a lot and do not "want" food).	o Continue BM on demand but add liquids and semi-solids during diarrhea. o By 12 months, the child should be on an adult diet.

APPENDIX F
SAMPLE GUIDE FOR INTERVENTION TRIALS

FIRST INTERVIEW

CHILD IDENTIFICATION (from book and recruitment sheets)

Complete the information below:

Date: _____

Child's Id. Number: _____ Area: _____ Child's Name:_____

Age of child at interview: _____ Age of child now: _____

Nutritional status of child at interview: _____

Nutritional status of child now: _____

CHANGES SINCE DEPTH INTERVIEW

Ask the mother to report on changes she has observed since the depth interview.

1. Any large changes in lifestyle (new family member, fewer family members), better or worse economic times, etc.)

2. Any changes with the reference child? Illness?
   Probe about each incidence of illness:
   What symptoms? Duration? What did mother do? Changes in feeding? Enemas given?

   Changes in activity (walking, crawling, playing)?

   Changes in eating?

   Has the child been growing well?

CONDUCT A 24-HOUR DIET RECALL

HOUR	WHAT	INGREDIENTS	QUANTITY

-- In addition your child is getting

(milk): _____

and (food): _____

Note frequency, quantity and consistency for the mother.

-- Served in a bottle/cup/common plate

-- As you have told me, your child seems to be:

healthy

ill in the past*

frequently ill*

sick today

*Use special trial guide on illness and recuperation

PRACTICE: _____

Discuss the practice using motivations listed on the trials sheet.

1. What is her immediate reaction? Willing to try? Not willing?

   If willing, what convinces her? What does she like? If unwilling, what doesn't she like?

2. Is there another way to motivate her? What do you say?

3. Is there a problem with other family/homestead members disagreeing? Who are they? What do they say? (Talk directly to them if possible.)

4. Are there other circumstances under which she would try the recommendation? What are they? What are the modifications?

ANALYSIS FROM DIET RECALL DONE WITH DEPTH INTERVIEW	ANALYSIS OF 24-HOUR RECALL
Summarize the diet recall done in conjunction with the depth interview.	Summarize the recall you just did.
Breastfeeding frequency:	Breastfeeding frequency:
Feeding frequency:	Feeding frequency:
Amount Given:	Amount Given:
Consistency:	Consistency:
Variety:	Variety:

RELATE YOUR ASSESSMENT OF THE CHILD'S HEALTH AND NUTRITION TO THE MOTHER

-- Your child has/has not been receiving breastmilk.

If receiving, note frequency and any problems with feeding style.

FOLLOW-UP INTERVIEW
(ALL AGES)

Date of Visit: _____ Number of Days Since Last Visit: _____

START INTERVIEW WITH 24-HOUR RECALL

TAKE 24-HOUR RECALL (Child only)

HOUR	WHAT	INGREDIENTS	QUANTITY

ANALYSIS OF 24-HOUR RECALL

Breastfeeding frequency:

Feeding frequency:

Amount given:

Consistency:

Variety:

Referring to Summary Sheet, remind mother of the practices you agreed to. For each recommended practice, ask the following questions:

1. Practice/Recommendation: _____
2. Has the mother tried it? _____ Yes _____ No
3. If no, what are her reasons? Probe.
4. If yes, what did the mother think of it? Did she like it? Dislike it?
5. What did she like about it?
6. What didn't she like about it? Probe to see if mother thinks the recommendation takes too much time, costs too much, etc.
7. Did she modify the recommendation in any way? How?
8. Did other people say anything about the recommended behavior (practice)? What?
9. Will she continue the recommended practice? Why? Why not?
10. Would she recommend the practice? What would she say?

Summary Sheet

Nutri-tional Status	Food Availa-bility Score	Hygiene	Major Problems	Changes Discussed	Reason Accepted/ Rejected	Agreed Upon Trials	Outcome	Reason Accepted Rejected, Changed

APPENDIX G
RECRUITMENT SHEET FOR PARTICIPANTS
IN FOCUSED DISCUSSIONS

Province: _____ District: _____

Village: _____ Geography: mountains ____ coast ____plains ____

rural _____ urban ____

Qualifying Information

Mother's Name: _____ Father's Name: _____

Child's Name: _____

1. _____ child 0-24 months Age: ____ (Months) Birthdate: _____

2. Health Status

_____ Ill with diarrhea within the last 2 weeks

_____ Not ill with diarrhea in the last 2 weeks

3. Nutritional Status (optional)

Check available records, child's growth card and/or weigh child.

a. Weight _____ Kg. b. Age at weighing _____ mo.

Well nourished _____ Undernourished _____

Group Eligibility

_____ 0-6 months without diarrhea

_____ 0-6 months with diarrhea

_____ 7-12 months without diarrhea

_____ 7-12 months with diarrhea

_____ 13-24 months without diarrhea

_____ 13-24 months with diarrhea

* Criteria to use will depend on local norms or nutritional surveillance/growth monitoring programs. Other indicators may also be used, such as arm circumference, weight gain/loss, etc.

Willing to Participate? _____ YES _____ NO

Meeting

Date: _____ Day: _____ Time: _____

Place: _____

Other Information for Eligible Parent

1. Formal schooling (years): _____ Mother: _____ Father:_____

2. Number of other living children in family: _____

3. Number of hours the mother spends outside the home either working or for another reason on a regular basis: _____

4. Does the mother/father participate in any organized village activities?

   YES _____ NO _____

   Which activities: _____

   _____

   _____

APPENDIX H
SAMPLE FOCUSED GROUP DISCUSSION GUIDE

INTRODUCTION

- o Explanation of the need to gather and talk about feelings and opinions about their families and way of life. No right or wrong answers.
- o Self introduction of respondents:
  - where they live
  - whether working
  - number of children
  - age of the youngest child
  - whether the child is being breastfed
- o We would like to focus on this child (youngest).

CHANGES/PROGRESS TAKING PLACE IN THE FIRST FEW YEARS OF LIFE

- o Did you all give birth to your youngest child after nine months of pregnancy?

  If not, in which month was the child born?

  What do you think happened during pregnancy to cause the baby to be born sooner/later than 9 months?

- o In the first few months, what changes occurred in the child?
  - Did any change in weight take place? In what way?
  - Did any change in skills (motor/movement) take place? In what way? In which month did each change take place?
  - Did any change in body growth take place? In what way? In which months?
  - If no change has taken place, what did you do? If no changes in weight occurred? If no change in motor skills occurred? If no change in body growth occurred?
  - What <u>should</u> a mother do if those changes did not occur?

PERCEIVED HEALTH STATUS OF THE CHILD

- What do you feel about the health of the child? (youngest child/children)
- Why do you say the child is healthy/not healthy?
- How does your child compare with your other children at this age?
- Have your relatives or neighbors commented about this child?
- What have they said?
- Do you agree with that?
- Why?

MATERNAL COMPETENCY/SELF PERCEPTION

- Story completion situation:

  A is good mother = what would A do in this situation?

  B is bad mother = what would B do in this situation?

  Or present story and then ask: Was A a good mother? Why?

- If a child is suddenly ill, what would a good mother do? (story completion) What would you do?
- If a child refuses to eat, what would a good mother do? What would you do?
- Where does a good mother seek advice when her child is ill? Why? Where do you go to seek advice?
- Where does a good mother seek advice when her child refuses to eat? Where do you go to seek advice?
- I will state some problems others mothers have faced in feeding their child. Which problems are similar to yours? List problems.
- What other problems do you have?
- Which are the most difficult problems? Why?
- Can anything be done? What have you done?

OTHER'S PERCEPTIONS OF THE MOTHER'S ROLE IN CHILD CARE

- Do other people usually comment on how a mother should care for her child?
- Who usually makes these comments? Family? Relatives? Neighbors? Influential people?
- Do their comments make a mother feel disturbed?
- Whose comments usually affect the mother? Why?
- Do you care about what other people say? Why?
- What would you do if other people commented on how you care for your child?

PARENTHOOD AND FEEDING IN GENERAL

- What advice do grandparents give their children about feeding of the young?
- What advice do parents give their children about feeding of the young?
- What advice should be given to a mother who has her first child?
- Is that advice different from the advice grandparents and parents give them? In what way?

HOPES/ASPIRATIONS FOR CHILDREN

- Now all of you have very young children. Soon they will grow up and do lots of things.
- Do you ever talk about it?
- What would you like them to grow up to be? Why?
- What would you like them to study?
- Would you like them to study a lot?
- Would you like them to stay in this village or go to a town?
- If you had one wish for your children, what would it be?

APPENDIX I
SAMPLE OF RECOMMENDATION DISCUSSION AND
CONCLUSION SECTION OF FINAL ASSESSMENT REPORT

Recommendation 12:

Give the child breastmilk only (0-3 months) or breastmilk and soft weaning food (4-24 months) during diarrhea.

Motivation:

Children who are ill need food to combat their illness. When they have diarrhea, they need something that will "stick" to their stomach to help them get better.

Results of the Trial:

- Eight mothers with babies sick with diarrhea participated in this trial. Of those eight mothers, only one had a child under 3 months. This mother followed the advice and changed from giving breastmilk and porridge to only breastmilk during the child's diarrheal illness.

- The other seven mothers participating in the trial had children between 7 and 21 months of age. Of the seven, two mothers stopped foods and were giving only breastmilk during their child's diarrheal illness but agreed to give a soft rice porridge. On the follow-up visit, one mother had not begun the soft porridge because her child "did not want to eat." The other mother, however, liked the food and was able to increase her child's caloric intake substantially despite continued illness.

- Four of the five mothers with children in their second year of life were already giving foods in addition to breastmilk during diarrheal illness. The exception was for a severely undernourished child. All five mothers agreed to give soft foods or to increase the quantity of foods they were giving.

- On the return visit, four of the five children were no longer suffering from diarrhea. The child that was still sick was the severely undernourished one. Her mother tried feeding her small amounts of rice, but the child would not eat much.

- Among the four children who had recovered, most had substantially improved calorie and protein intakes. One mother only increased feeding frequency, while the others increased frequency, portion size and diet variety following their child's illness. Their children were receiving over 100 percent of their calorie and protein requirements on the second trial visit.

Excerpted from Weaning Practices Assessment for East Java and West Nusa Tenggara Indonesia, A Summary of Findings. A Report by the PMPA ASI Central Working Group, Directorate of Nutrition, Ministry of Health, and Manoff International, Inc., December 1986, pp. 85-87.

From the Discussions:

- Most women who participated in the discussions but not the trials are in agreement with the idea of continuing to feed their children during diarrhea. They express that giving breastmilk to the youngest children, and breastmilk and some food to slightly older children, would speed the curative process.

  Many mothers with children under 3 months say that if their child wanted, they would also give him/her food.

- Some say that drinking more liquids would lead to more urination, which would allow the "problem" to leave the body more quickly.

- Some Javanese mothers say that the food and breastmilk would cool the "hot stomach."

- In East Java, mothers also say that giving some food would help maintain the child's strength and prevent what women identify as the most serious physical problem of diarrhea: weakness.

- In NBT, mothers feel that giving food and breastmilk would prevent death from diarrhea.

- It appears that mothers see the child's refusal of both breastmilk and food as a sign to seek additional help for the child. Generally, mothers say they take their children to the health center and/or to a dukun to receive jamu. If the child is being breastfed, the mother will often drink jamu.

- Mothers say that their children often have less appetite when they are sick, so it is difficult to feed them sufficient quantities of food. The idea of feeding a child more frequently seems to make sense to the mothers.

- Few specific foods are mentioned as being particularly appropriate for the sick child, although boiled sweet potato and boiled banana, along with extra strong tea, are mentioned by the Sasak mothers.

  Generally, for children with diarrhea: Mothers with children of all ages see the benefits of giving foods to a child when s/he is sick to avoid weakness and a worsened state of health. Not all mothers follow this practice, but most are willing to try. Resistance is greatest from mothers of children under one year, who are fearful of the possible negative consequences of adding foods. Mothers of older children have less resistance to actually increasing intake during and after illness, probably because they already continue giving some food and there is less fear, in general, about food causing illness.

  Messages to improve feeding practices during illness should stress the benefits of the practice ("avoiding weakness") and address the concern that feeding is harmful for younger children.

CONCLUSIONS

- Almost every mother who participated in the household trials was able to do something to improve her child's nutrient intake. Low income and a scarcity of resources was not a reason given by many mothers for not trying to do something. Rather, mothers who would not change their current practices all had young children who were sick and wouldn't eat, or just didn't want the additional or special food (but they said they tried.) All of the mothers with children over 12 months (the majority of the children participating in the trials) did at least one thing to improve their child's diet.

- The most successful recommendations and concepts from these trials appear to be:

  1. to give colostrum to the newborn and to place the infant on the breast within hours of the birth;

  2. to breastfeed the child more frequently from birth and decrease the number of small feedings in the first months of life;

  3. to eat more food and drink more liquids while nursing;

  4. to breastfeed from both breasts at each breastfeeding;

  5. at four months, to begin the child on a food that is "complete" and is either mashed from the family foods or cooked separately using several ingredients; rice, green vegetables, a protein and fat source;

  6. to prepare a special mixed rice dish for children from 7 to 9 or 10 months of age or to mix already cooked family foods together;

  7. to feed the 7 to 10 month-old child four times a day--three meals and a snack;

  8. to feed children older than 10 to 11 months four meals a day and a snack;

  9. to be sure that every time the child between 10 and 24 months eats, s/he eats a larger portion than usual;

  10. to give the child between 10 and 24 months more different foods in his/her daily diet and to try to give at least two foods the family has but normally does not offer the child;

  11. to give children between 4 and 24 months a soft food when they are ill with diarrhea;

  12. to feed children recovering from illness more food than they are accustomed to receiving.

Excerpted from Weaning Practices Assessment for East Java and West Nusa Tenggara, Indonesia -- A Summary of Findings, Directorate of Nutrition, Ministry of Health, and Manoff International, Inc., 1986, pp. 90-93.

- Other concepts that appear to be important because of their influence on infant feeding practices are:

  1. The lack of self confidence mothers have in their ability to improve their children's lives. This lack of self confidence influences the early introduction of foods, the small portions given to older children, the lack of variety of foods given and the feeding of sick children. Mothers should be encouraged to feel that they do know what is best for their child: the child should not always dictate what s/he will eat and when.

  2. The concern mothers have for pleasing their children and their family. Mothers want to be sure their children are "satisfied." This seems to motivate much of what they do. For example, they offer food to the young baby so s/he will be satisfied, and they won't force an anorexic child to eat because it will displease the child. This concern and the mother's lack of self confidence interact to influence some of the same practices. The link should be established between a mother's ability to please her family, her knowledge of child care concepts, and her self confidence to do what is correct.

  3. The aspirations mothers and fathers have for their children. Differences between the aspirations expressed by mothers of well and undernourished children indicate that offering some vision of the future (without raising aspirations falsely) goals are more material and physical while in Balinese NBT and in Java, goals will include more abstract ideals like happiness and satisfaction. Projections for the future should not focus on urban lifestyles, but rather on an improved rural life.

  4. The concern mothers have for the economic and time costs of new practices. It appears that although there are real financial and time constraints, often the financial and time burdens are more perceived than real, leading to negative initial reactions to suggestions. Appeals for changes in practices need to address these two constraints honestly and directly.

  5. The need for mothers to be gone from the home over long periods of time. Feeding suggestions for what mothers can do in this situation on both a daily and occasional basis would be useful for urban and rural mothers.

  6. The desirable balance between the child's physical and psychological development. The effort to achieve this balance influences the quantity and types of food offered to a child, especially in Java, where parents do not want "fat" children or children who are accustomed to "good" foods and therefore may be greedy. The balance of these concepts is subtle and need not be brought forward in a direct manner. This may be an area where fathers can be appealed to, since in some regions it appears that the mother is responsible for the child's physical development while the father is responsible for character development.

7. The mix of traditional and modern concepts about child care and use of health services. The appeal of the traditional practices and customs for the mother should be transferred to the "new" or modified practices advocated by the project.

8. The absence of information on childcare and nutrition. It is clear that existing information is not reaching the majority of the families. New methods will need to be used. What is indicated is use of a mix of available media including radio, shopkeepers, religious gatherings, and women's meetings. Fathers also need to be reached with specially selected information in a manner that will appeal to them and in an appropriate forum.

9. The lack of clear definitions of health, growth, and adequate food quantity and the relationship between these. Even mothers with more "modern" concepts of health and childcare, as well as those participating in health and nutrition programs, could not discuss these concepts clearly in relation to their children. If mothers had more objective indicators for evaluating these concepts for their children, this alone could improve practices enormously.