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DESIGNING BY DIALOGUE
A Program Planners' Guide to Consultative
Research
for Improving Young Child Feeding

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Prepared for the Health and Human Resources Analysis (HHRAA) Project
by

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Finally, special thanks must also be extended to the many families and field workers involved in the programs cited throughout the manual. Their insights and experience with the approach and methods described were essential to the development of this work.

GLOSSARY

Checking research: a final, optional step in the consultative research process. Methods such as focus group discussions or interviews are used to check the earlier results with a sample that has not yet participated in the research. Checking research also may be used to check the reactions of program personnel to the recommendations resulting from the study.

Consultative research: the research process described in this manual. It is a type of formative research that uses several quick, interactive information-gathering methods with mothers and other key people who are likely to be beneficiaries or participants in a program. During consultative research, important scientific information and key cultural and personal concerns are examined, and changes in behavior are negotiated. The goal of consultative research is to identify feasible, acceptable, and effective strategies to improve health-related behaviors, with program beneficiaries playing an active role in the process.

Exploratory research: an early step in the research process used to identify problems, solutions, and other information needed to prepare for trials of improved practices. The exploratory methods described in this manual are in-depth interviews, observations, recipe trials, and focus group discussions.

Focus group discussion (FGD): a discussion among a small number of participants (6–8) guided by a skilled moderator. The word focus is used because the discussion topic usually is narrow and the participants are expected to have similar characteristics. This method relies on group dynamics and the moderator to discover insights related to the research question.

Formative research: a general term describing investigations conducted for program design and planning. Methods may be quantitative or qualitative; those described in this manual are mostly qualitative.

In-depth individual interview: a one-on-one discussion between a respondent and an interviewer. The interviewer probes extensively to gain insights into explanations and stories provided by the respondent. In-depth interviews can uncover details on complex subjects or reveal insights that might not be stated in the presence of peers.

Negotiation: a process of dialogue between a counselor and mother during which the mother agrees to try one or more specific practices for a specified period of time. The new, negotiated practice may not achieve optimum or ideal nutrition, but it will be a nutritional improvement (compared with usual or customary practices).

Observation: a method used in consultative research. In *open* observation the investigator looks at the surroundings and the actions taking place and notes relevant points. In *structured* observation the object of the observation is detailed carefully, and the investigator notes exactly how, how often, or how much a behavior is practiced or a specific recipe is prepared.

Population segment: divisions of the population that reflect major ecological (i.e., coastal, northern, or highland areas) or demographic (i.e., ethnic, religious, or degree of urbanization) differences that are expected to affect important feeding-related attitudes and practices. Different program activities or messages may be needed for different population segments.

Population unit: a type or size of community from which a sample of respondents is drawn, usually the smallest sampling unit.

Qualitative methods: research methods based on anthropological, psychological, and market research techniques that use open-ended, unstructured question guides rather than structured questionnaires to probe the rationales and detailed reasons for current norms and practices. In-depth interviews and focus group discussions are examples of qualitative methods. Qualitative data usually consist of words or text rather than numbers, and data analysis involves summarizing by theme rather than a statistical analysis. Qualitative methods usually are conducted with small samples.

Quantitative methods: research methods such as surveys that use structured questionnaires or measurements to quantify conditions and estimate prevalences. Data collection usually is based on random sampling, and analysis involves statistical tests. In this manual, nutritional assessments are likely to be the only quantitative method used.

Tailoring the counseling: designing a diverse set of recommendations that can be used in settings with families of varying levels of resources and among counseling recipients with children of different ages and health conditions. When counseling is tailored, counselors suggest technically effective practice improvements that are relevant to a specific mother, motivating her and discussing how she can overcome constraints, and negotiating practices that she agrees she can and will do.

Tailoring the research design: choosing only the methods and sample required to meet program needs and fill in gaps in existing information.

Trials of Improved Practices (TIPs): the core method in consultative research. Feeding recommendations are tested in homes by discussing possible improved practices, negotiating specific practice changes, and following up to record the mothers' and children's experiences with and reactions to the new practices. This method is also referred to as household trials.

Triangulation: using two or more methods to investigate similar issues to get a more complete, accurate picture than one method alone provides.

INTRODUCTION

Purpose of the Manual

The purpose of this manual is to give you tools to design, carry out, and analyze the results of formative, consultative research and to use them to design effective programs to improve infant and young child feeding¹. This approach is based on evidence that community nutrition programs are more effective in changing child feeding practices and improving nutrition when program planners pay close attention to the voices of the families who will participate in the program. This is a step-by-step guide on how to:

- define the key problems in child feeding practices;
- identify simple and effective actions within the household that will improve child feeding;
- test these recommended practices in homes to determine which are the most practical and culturally acceptable ones; and
- develop an effective strategy to promote these improved child feeding practices among the population.

The research methods described in this manual are adapted from anthropology, market research and nutrition. They are primarily qualitative methods that have been combined to create a flexible, practical approach to focus on programmatic issues. The methods use open-ended questioning, discussions, trials, and observation to gather in-depth, descriptive information on what people say, believe, do, and want to do. The results are usually descriptions, not numbers. People are asked to tell their stories and describe their feelings rather than give short answers to structured questions.

Mixed with the qualitative information are a few quantitative methods such as dietary assessment, structured observation, and some aspects of trials of practices and recipes. These quantitative methods help the researcher and participants assess the significance of the qualitative information.

A valuable method described in the manual is the Trials of Improved Practices (TIPs). TIPs is used to test every new feeding practice with mothers and children, to make sure they are willing

¹This manual outlines a consultative approach to formative research that is the culmination of more than 15 years of experience working with infant and young child feeding programs. The methods described were first tried in a project in Indonesia (1979–81) and later refined and reported in a manual developed under The Weaning Project (1985–89). The approach was adapted for use in diarrheal disease control programs, as outlined in the manual, *Improving Young Child Feeding During Diarrhea: A Guide for Investigators and Program Managers* (Griffiths et al., 1988).

and able to try it, and like it enough to continue. People are given the chance to explore how they can take action themselves to improve their children's health and nutrition.

Audience

This manual will be most useful to people who are planning large-scale programs to improve young child nutrition. It may also be useful for people doing applied research to help program planners, working in nutrition communications, or training nutrition counselors. Users should include a team with expertise in nutrition, research, and communications. Prior experience with *qualitative* research is not required or assumed.

This manual covers breastfeeding and complementary feeding practices. The methods are the same as those outlined in *A guide to qualitative research for improving breastfeeding practices* (Favin, M. and C. Baume, 1996), and persons working in breastfeeding promotion programs are strongly encouraged to consult this manual for additional information and program examples.

Organization of the Manual

The manual covers the research process from design to analysis and interpretation. For each phase of the research we have provided:

- task boxes listing all the important steps,
- step-by-step guidelines,
- worksheets for planning,
- program examples, and
- samples of research tools such as question guides.

The manual consists of 10 chapters that describe the different phases of the research process and offer suggestions for using the process. Following is a brief chapter-by-chapter synopsis:

Background

- Chapter 1 provides an overview of this approach and the different ways it can be used.
- Chapter 2 summarizes current technical and program experience from child feeding programs, providing useful background information for a research and program design team.

Phase 1: Reviewing Existing Information and Designing the Research

- Chapter 3 describes the first step of the consultative research process, a review of existing information found in written reports and gleaned from interviews with local experts.

Guidelines and worksheets are included to help organize the information collected and identify gaps that need to be investigated.

- Chapter 4 discusses research design and planning. A decision guide and worksheets help in designing a research plan tailored to the needs and resources of your program.

Phase 2: Formative Research Methods

Phase 2 provides detailed instructions on formative research methods. The following chapters describe the tasks involved in preparing for, conducting, and analyzing the results of the field work.

- Chapter 5 describes exploratory methods.
- Chapter 6 describes the core consultative research method, Trials of Improved Practices (TIPs).
- Chapter 7 discusses the use of checking research.

Phase 3: Building a Bridge from Research to Action

Phase 3 emphasizes using research results to design and implement effective child feeding programs.

- Chapter 8 provides ideas on synthesis, interpretation, and presentation of the results of the entire research process.
- Chapter 9 describes the application of these results to strategic program planning, especially for nutrition communication.

Training

The final section covers use of this process in a training setting to prepare workers for their job of educating families about child nutrition.

- Chapter 10 focuses on the use of Trials of Improved Practices (TIPS) as a tool to develop effective and empathetic counseling skills among personnel.

Throughout the manual program examples from numerous countries illustrate how the approach can be applied. Samples of research materials are included in the attachments. We are extremely grateful to those who have shared what they learned from their field experience and allowed us to use excerpts of their work. Attachment 1 summarizes the programs that are used as examples. The reports and publications from these programs are listed in the Bibliography.

Attachment 1: Background on the Program Examples Used in the Manual

Country/Organizations	Scope and Objectives of Project or Program
The Weaning Project:	
Swaziland (1986–89) Swazi National Nutrition Council; Ministry of Agriculture and Cooperatives; The Manoff Group; UNICEF; USAID	To develop a national strategy with emphasis on a communication and training program to improve child feeding and food hygiene practices.
Cameroon (1986–89) CARE/Cameroon; The Center for Nutrition of the Institute for Medicinal and Plant Research; Ministry of Health; Department of Community Development; The Manoff Group; USAID	To plan and implement a child feeding communication component, under the CARE Northern Wells and Health Education Project in the Extreme North Province (ENP) of Cameroon.
Ghana (1988–89) Nutrition Division of the Ministry of Health; The Manoff Group; USAID	To develop a national strategy with emphasis on the educational messages and materials required to improve child feeding practices and train health and community workers in promoting improved practices.
Indonesia (1985–89) Nutrition Directorate, Ministry of Health; National Family Planning Bureau; The Manoff Group; USAID	To formulate, implement, and evaluate province-specific educational strategies for improving weaning practices in East Java and West Nusa Tenggara provinces and provide a method for other provinces to carry out the same process.
Ecuador (1987–89) Program: MOH Department of Promotion and Protection; National Child Survival Program (PREMI); The Manoff Group; USAID Research: MOH Institute for Research in Social Medicine and Nutrition (ININMS)	To develop a national communication program on child feeding as part of the national child survival program.

Country/Organizations	Scope and Objectives of Project or Program
Other Projects:	
The Gambia (1992) The Gambia Food and Nutrition Association (GAFNA); The PRITECH Project; USAID	To develop national nutrition education messages and recommendations for young child feeding during diarrheal episodes.
Senegal (1992–93) Ministry of Health (SANAS); Organization for Food and Nutrition Research in Africa (ORANA); Local Health Providers and Mothers; The PRITECH Project; Cornell University; USAID.	To develop a set of counseling cards to be used as communication tools by community nutrition counselors and nurses to improve child feeding practices for healthy children and children with diarrheal illness.
Tanzania (1994) The World Health Organization; The Manoff Group; Tanzanian Food and Nutrition Centre (TFNC); Centre for Educational Development for Health, Arusha (CEDHA)	To adapt global nutrition counseling recommendations and training modules to the Arusha region of Tanzania, and to test a method for use in adapting the recommendations in other countries.
Niger (1990–92) Niger National Diarrhea Control Project, Ministry of Health; The PRITECH Project; USAID	To develop strategies for improving the diets of young children and to reduce the nutritional impact of diarrheal diseases.
Nigeria (1995) Centre for Health, Population and Nutrition (private research firm); Wellstart International; The Manoff Group; USAID	To develop plans for communications and training programs to improve young child feeding in two states.
Pakistan (1990–92) The National Breastfeeding Promotion Program National Breastfeeding Steering Committee; UNICEF; The Manoff Group; and the PRITECH Project, USAID	To develop a national breastfeeding promotion strategy and communication program to improve exclusive breastfeeding rates.
Peru (1986–88) Institute for Nutrition Research (IIN); The Dietary Management of Diarrhea Project (DMD); Johns Hopkins University; Academy for Educational Development; USAID	To develop and promote a recipe, based on local ingredients, for a weaning food appropriate for feeding young children during and after diarrhea.
Peru (1989–92) Institute for Nutrition Research (IIN); The World Health Organization	To plan, implement, and evaluate a community-based intervention to improve infant and young child feeding practices.

BACKGROUND

CHAPTER 1: OVERVIEW OF THE APPROACH

Why Consultative Research?

The consultative research described in this manual offers a systematic approach for working with families to identify household child feeding and caring practices that affect child nutrition, and to find practical ways to improve these practices. Trials of improved practices (TIPs) are the core method for designing by dialogue in the consultative research approach.

The consultative research approach offers:

- **In-depth understanding of child feeding practices.** Qualitative methods are used to understand what and how children are fed and the reasons behind these practices.
- **Adaptation of feeding recommendations to specific situations.** Trials of improved practices (TIPs) are used to test acceptability and feasibility of new practices. Families participate in identifying ways that feeding practices can be improved and sustained over time.
- **Understanding of the motivations and constraints to change behavior.** Information is collected on what motivates mothers and other caregivers to try a new practice and what obstacles prevent its acceptance.
- **Flexibility.** The research process is a set of methods that are used in different combinations, depending on the information needed to design the program. The manual explains how to tailor research to meet program needs and resources.
- **Quick and inexpensive field research.** If the research is planned carefully to collect only essential information, this approach can be completed relatively rapidly.
- **A bridge between the nutrition program and the family and community.** Effective nutrition programs must be based on the needs and values of the participants, as well as on nutritional science. In consultative research, the dual goals of improved nutrition and families' needs for convenient, affordable ways to nourish their children are examined and balanced.

- **Training in nutrition counseling.** Practicing the methods described in the manual to learn what women are thinking, feeling, and doing about child feeding will train potential counselors and educators in essential **skills** such as listening, probing, and negotiating. Using these methods also promotes **attitudes** such as willingness to learn from mothers, empathy for their situations and constraints, and **understanding** of practical changes to recommend. Perhaps most important, this process has been found to **motivate** health personnel to take a sincere interest in learning appropriate ways to work with mothers and other caregivers to resolve feeding problems.

Many programs conduct a baseline survey before beginning program activities so that changes in the prevalence of attitudes and practices can be measured later to evaluate program effectiveness. The research described here will not replace a baseline survey, but experience has shown that conducting qualitative research prior to a survey provides the information needed to develop a streamlined survey instrument that focuses on a few key issues. The result is a more precise and less time-consuming survey interview that pinpoints the practices the program is designed to change and simplifies the evaluation process.

To date, consultative research has been carried out in Africa (Cameroon, The Gambia, Ghana, Madagascar, Mali, Niger, Nigeria, Senegal, Swaziland, Tanzania, and Zambia), Asia (Bangladesh, Indonesia, Pakistan, the Philippines, and Thailand), and Latin America (Bolivia, Brazil, Ecuador, El Salvador, Guatemala, Honduras, and Peru) in projects funded by USAID, the World Health Organization, The World Bank, UNICEF, and national governments. The methods described in this manual can be adapted easily to other public health and development applications that seek to promote behavior change at the household level.

What are Trials of Improved Practices (TIPs)?

Trials of improved practices (TIPs) are the core method of the consultative research approach. This method, also known as household trials, involves a series of visits to selected homes to test new behaviors to improve child nutrition. The basic process is:

1. An initial home visit to gather background information and interview the mother (or other primary caregiver) about the diet of her young child.
2. Analysis of the dietary and feeding practice data to identify problems with the child's diet and usual feeding practices.
3. Preparation for counseling by identifying a short list of recommended behavior changes that would help to address the specific problems and that would likely be feasible for the mother. An assessment and counseling guide is used to identify appropriate recommendations.
4. A counseling visit with the mother to present several options for improving her child's feeding, to record her reactions to the options, and to negotiate with her to choose one or more options that she is willing to try during the following week.
5. A follow-up visit to find out whether the mother tried the new practice(s), what happened when she did, whether she is willing to continue the practice, and why or why not.

Analysis of the TIPs results include summaries on common feeding problems, identification of the most acceptable recommendations to improve child feeding, ways that mothers modify the recommendations, and their motivations and constraints related to trying these new practices and behaviors. All of this information is then used to develop nutrition messages and to plan a program's communications strategy.

TIPs have been tested and refined in many situations, including programs to improve breastfeeding and complementary feeding practices, food hygiene, micronutrient malnutrition, management of diarrhea and acute respiratory infections, and maternal health. Results have been used to design successful program strategies and educational materials. The use of TIPs is also suggested for developing locally appropriate nutrition messages for the integrated management of childhood illness (IMCI). TIPs also may be used with participatory and rapid appraisal studies (PRA).

Tailoring the Approach

Consultative research is tailored and flexible. *Tailoring* refers to designing a research plan specific to the program and country contexts. The overall framework given in Box 1.1 lists research phases and possible methods. The examples and guidelines provided in each chapter help to tailor the best and simplest package of methods to fit the needs of a particular program. Many different options are described throughout the manual, and for this reason, the manual is large.

Several important issues should be kept in mind during the process of tailoring the research design.

- It is essential to set clear and realistic **program objectives** to guide decisions on the research. This is discussed under Phase 1.
- Qualitative research tends to occur in cycles of asking questions, gathering information, and then noticing new questions that arise and collecting additional information. In this way, **the respondents influence the direction of inquiry**, and it is not completely controlled by the investigator. This means that it will be difficult to plan the whole process in detail at the start. Stay flexible and use early results to guide the design of later phases, addressing new and important issues that come up.
- Collect only information that will be used. Many interesting questions can be asked about child feeding, but time and resources are likely to be limited. Give priority to the issues that will affect the **effectiveness and relevance of the program**. Because several methods collect similar information, it is not advisable to include them all.
- Almost any program aimed at improving child feeding will include messages that ask mothers or other family members to change their behavior. Such **recommendations must be tested**, and for this reason, TIPs are considered to be an *essential* step that cannot be skipped.

Box 1.1: METHODOLOGY AT A GLANCE

PHASE 1	Reviewing Existing Information and Designing the Research
Reviewing existing information	To gather and summarize available information. To identify key child feeding problems and possible household actions to solve the problems. To identify remaining research questions.
Designing the research	To select and tailor research components to meet the objectives and answer the research questions. To plan the logistics of implementing the research.
PHASE 2	Formative Research Methods
Exploratory research <i>(in-depth interviews and observations, recipe trials, focus groups)</i>	To learn about current feeding practices and problems, as well as related beliefs and attitudes. To obtain advice from families on ways to solve feeding problems. To obtain opinions from other influential people.
Trials of Improved Practices (TIPs)	To assess feeding practices and provide tailored recommendations. To test mothers' and children's responses to new feeding practices. To learn about motivations and constraints to improving child feeding practices.
Checking research <i>(focus groups, key informant interviews)</i>	To check the response of a broader or different sample to the recommendations or messages. To check the response of decision makers or program implementors to the recommendations.
PHASE 3	Building a Bridge from Research to Action
Analysis and presentation	To integrate all the information collected and analyzed during Phases 1 and 2 into one document. To interpret the findings and make recommendations on how to use the results. To share and discuss the results.
Using results for programming	To apply research results to program planning. To develop the program strategy and communications plan.

The goal of tailoring is to design the simplest research plan possible, selecting the best mix of methods to answer the research questions. Although every program should cover all three phases shown in Box 1.1, many decisions concerning the content and the design of each phase, as discussed in Chapter 4, must be taken. Examples of research designs used in several countries are included in Box 1.2 to illustrate how the approach may vary in different settings.

How to Use this Manual

The material in this manual is presented in the order required to plan, conduct, and analyze the results of consultative research to design programs to improve child feeding. For teams interested in using consultative research for program planning, it is ideal to start with the overview of child feeding in Chapter 2 and read through the end of Chapter 9. However, given the amount of material, some alternatives can be suggested for those who may not need the entire manual.

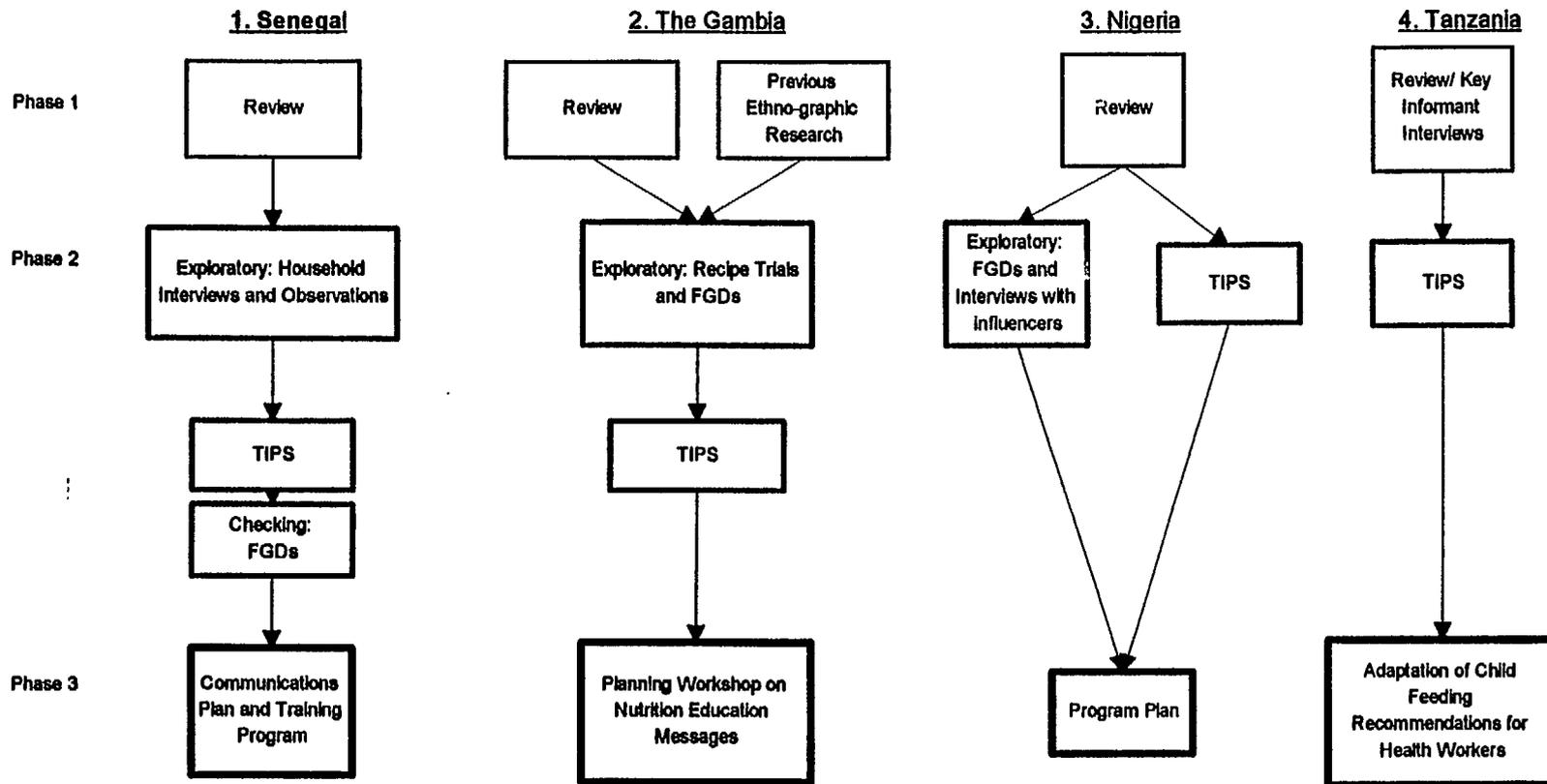
For example, if you are trying to decide whether to use this approach and don't know much about TIPs, read through Chapter 6 to get more information and examples of how the method is applied. If you are thinking about using TIPs for training nutrition counselors, also read Chapter 10. Once you are ready to begin, read Chapter 3 and conduct the review of existing information.

Chapter 4 outlines the many decisions that must be taken when developing a research plan. If you are working in an ongoing program, many of these decisions may already be made. In this case, just skim through this chapter to identify the issues that apply to your situation.

Once you develop a research plan, focus on the methods described in Chapters 5, 6, and 7. Check the task boxes at the beginning of each chapter to get an overview of the steps involved for each method. Reading Chapters 8 and 9 ahead of time will give you an idea of where you are headed, but a detailed reading can wait until after data collection.

Chapter 10 explains how to use TIPs to train nutrition counselors. Read this chapter carefully if you are planning to use the manual to develop in-service or pre-service training courses. Box 1.3 summarizes the most relevant chapters for various types of training.

BOX 1.2: FLOWCHARTS OF FORMATIVE RESEARCH DESIGN FROM FOUR PROJECTS



Factors affecting research design

An in-depth study of child feeding practices during diarrhea, to design a nutrition education program.

- Little existing information was available, so the full set of methods was used.

A study to develop recommendations for child feeding.

- Ethnographic study had already been conducted, so no need for in-depth interviews
- Conducted recipe trials to develop ways to enrich the traditional porridge

A study to develop communication plans to promote breastfeeding and improved child feeding

- Many previous studies on child feeding practices provided information for design of TIPS
- Interviews and FGDs were conducted with people who influence mothers

Adaptation of global feeding recommendations by identification of appropriate local foods

- Limited scope of work and use of pre-existing recommendations meant that no exploratory or checking research was needed

Box 1.3: USING THE MANUAL FOR TRAINING DIFFERENT CATEGORIES OF PARTICIPANTS

Training Participants:	Chapters to Cover:
Field research staff <i>(issues related to their training raised in Chapters 5, 6, and 7)</i>	Chapter 2 for background on child feeding Chapter 4 for understanding research logistics Chapters 5, 6, 7 for specific descriptions of research methods
Nutrition counselors <i>(community- or clinic-based personnel emphasized in Chapter 10)</i>	Chapter 2 plus background reading for understanding of child nutrition, common problems and solutions, and the negotiation approach to counseling Chapter 6 on the TIPs method Chapter 10 for information on training program staff to use the TIPs method
Program managers or supervisors	Chapter 2 for background on child feeding program experiences and issues Chapter 6 for a specific description of TIPs Chapter 8 and 9 for ideas on how to apply research findings Chapter 10 for information on training program staff to use the TIPs method
Research managers or community nutrition students <i>(in schools of nutrition, public health, agriculture, or related disciplines)</i>	The entire manual can be used for a course covering the importance of child feeding practices, the need for formative research, use of the specific methods, and use of the results for program planning

CHAPTER 2: CURRENT EXPERIENCE FROM CHILD FEEDING PROGRAMS

Programs to Improve Child Nutrition

Nutrition is an interdisciplinary field, and efforts to prevent child undernutrition take many forms. A conceptual framework developed by UNICEF and adopted by the International Conference on Nutrition classifies the many factors contributing to undernutrition as immediate, underlying, or basic causes.

The two **immediate** causes of undernutrition are:

- inadequate dietary intake, and
- childhood disease.

The **underlying** causes of these problems are:

- insufficient food available to the family (household food security),
- inadequate care of women and children, and
- insufficient health services and an unhealthy environment.

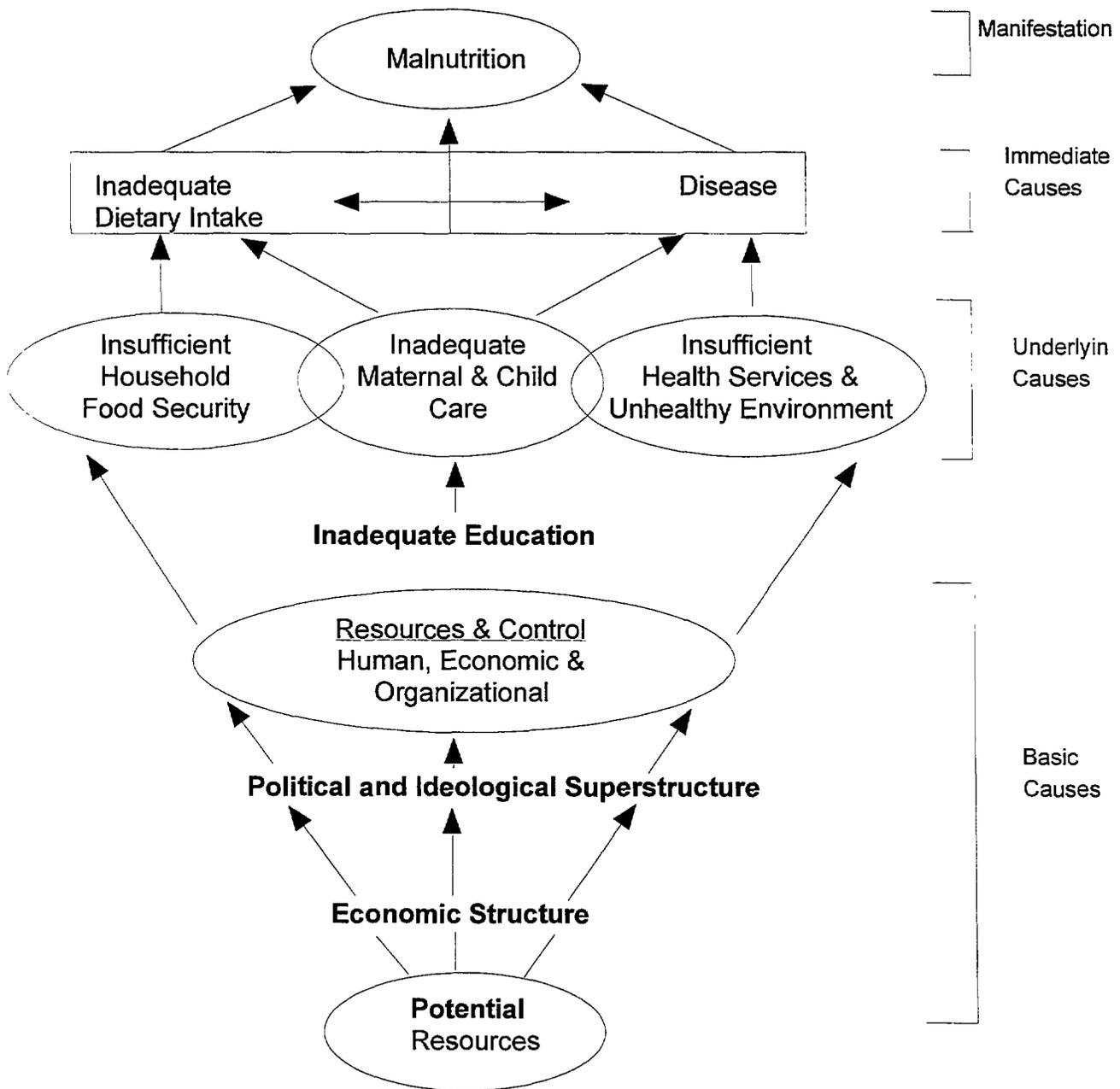
All of these factors are influenced by **basic** causes such as shortcomings in education, political and economic structures, and the availability and control of resources.

Efforts to improve nutrition can involve a wide range of activities, such as improving health services, strengthening women's control of household resources and decision-making, making policies to increase food production, or introducing micronutrient fortification. The approach described in this manual can be used to address any of the causes shown in Figure 2.1.

Child feeding practices are influenced by household food security and access to health services and sanitation as well as in many **caregiving** behaviors. The key caregiving behaviors addressed in this manual include:

- preparation and serving of food to children;
- food hygiene practices;
- home health care and feeding during illness; and
- parent-child interactions and the role of feeding in the socialization of the child.

FIGURE 2.1: CAUSES OF MALNUTRITION



UNICEF, Food, Health and Care: The UNICEF Vision and Strategy for a World Free from Hunger and Malnutrition. UNICEF: New York, 1992.

Many of the constraints to improving child feeding practices arise from inadequate attention to the needs and roles of women, resulting in inadequate care for pregnant and lactating women, lack of education, poor self-confidence, low economic status and a work load that allows little time for modifying practices to improve nutrition. To be effective, programs to improve child feeding may have to address a range of factors affecting the caregiving environment and dynamics of the household.

Unfortunately, the fact that child nutrition is affected by so many factors has led to the perception that programs to improve child feeding are always complicated. This is not necessarily true. No program can deal with all the contributing factors at once. The key is to focus on the strategies most likely to be positively received at the household level and to show an impact on child nutrition.

Experience has shown that child feeding practices can be changed, with positive effects on nutritional status. The challenge is to identify the key practices and to motivate sustained improvements in them. The strength of the consultative research approach is that it develops and tests recommendations in the same household settings where the new behaviors need to be practiced. Thus it can help program managers (1) see the extent to which underlying and basic causes of undernutrition hinder families from improving their practices, and therefore (2) determine the extent to which program inputs in addition to counseling to improve practices are required.

Effective Communication on Child Feeding

Effective communication is an essential part of any program to improve young child nutrition. Programs to improve household food security have found that increases in food availability do not result in improvements in young child nutritional status unless focused efforts to improve nutritional practices are also included. Likewise, the impact programs to manage diarrhea and respiratory infections, or to supplement women and children with vitamin A and iron, are enhanced greatly when combined with communication to change related behaviors and practices. In these contexts, effective communication enhances the impact of program resources by motivating behavior changes that maximize use of those resources.

In other programs, communication is used alone (i.e., without provision of food or health services) to encourage families and communities to make better use of their own resources for improved nutrition. These programs recognize that, despite economic and other constraints, many families can make small changes in caring behavior (including feeding practices) and in allocation of family resources that can be effective in improving child nutrition. These programs are sustainable because they enable people to optimize their own resources for improved nutrition.

Programs to improve child feeding practices by optimizing the use of existing community and family resources have shown that:

- Provision of clear and compelling information about the benefits to mothers and their children of small modifications of existing nutrition-related practices is necessary and often sufficient to motivate families to try such changes.

- The proportion of the population that is unable to improve practices because of resource or other constraints is usually small. Research can help identify these groups so they can be targeted for additional assistance.
- It is very difficult to predict people's responses to any single recommendation or educational message. Involving program beneficiaries is important to ensure that nutrition recommendations are appropriate and feasible, messages are clear and motivating, and communicators are credible and effective.
- Counseling through negotiation is an important process. When formulating program messages, negotiation with numerous families identifies the best practices possible in a given context—not necessarily the optimal practices. Furthermore, this type of counseling results in better interactions between health workers and their clientele. Health workers listen and learn more from mothers, and mothers have more faith in the advice they receive because they have had the chance to express themselves and feel that their child's particular situation has been taken into account. In both cases nutritional negotiation results in a higher chance of action to improve feeding practices at the household level.

Because negotiation is critical for success, changing child feeding practices requires some element of **interpersonal communication or counseling** to adjust advice to individual situations, motivate household action, and provide follow-up support to sustain the new behaviors.

However, the advice must be based on a technically sound analysis of common and significant child feeding problems and must suggest solutions that actually will result in improved nutrient intakes. The remainder of this chapter addresses these issues, covering current knowledge and experience on child feeding and listing important issues that need to be understood before developing the research or program strategies.

Child Feeding Programs: Lessons Learned

Applying lessons learned in the field leads to more effective programs and helps researchers identify the key issues that need to be addressed during consultative research and program planning. The following points summarize conclusions drawn from reviews of efforts to improve child feeding practices in Africa and other parts of the world (Griffiths, 1993; Piwoz, 1994; Herman, 1994).

1. Formative research has shown that **age-specific feeding problems** are similar in most countries, despite individual and regional variation in foods given. Being aware of the particular problem for an age group helps focus the research and the program actions.
2. Programs should emphasize **improving child feeding practices** rather than emphasizing only the foods consumed by young children.
3. Feeding a child who is sick or anorexic is a major problem requiring different solutions from improved feeding of the well child. Do not omit this aspect.

4. The recommended improved practices should be acceptable *and*, if followed, should have a positive nutritional impact. (Likely impact and acceptability are assessed carefully during consultative research.)
5. **Motivations** for feeding practices must be understood before behavior can be changed. In most cultures feeding has meanings and purposes beyond simply nourishing the body: practices may be related to social organization, religious belief, and family dynamics. Promoting improved practices should include reference to the important motivations reported by families with young children.
6. Common **constraints** that may limit willingness or ability to change behavior must be handled. Programs must be realistic about what can be accomplished if, for example, economic constraints are great or mothers feel they have no time to do more.
7. The influence of family members and knowledgeable community members on child feeding practices should be assessed. These individuals should be considered in the research and the program.
8. **Methods of counseling and communication** are as important as the messages conveyed, so attention must be paid to facilitating development of counseling skills and time to apply them. Formative research also needs to assess the knowledge, motivations, and constraints of service providers.

Common Child Feeding Problems: An Overview

Although feeding practices vary greatly among locations, and even from child to child, the common practices that contribute to inadequate child nutrition depend largely on the age of the child. Box 2.1 summarizes the common feeding problems found in different cultural settings. These are presented alongside the generally agreed-upon ideal practices for those age groups.

This summary is meant to guide the assessment of young children's diets. The problems are not always specific to these age groups alone; there will be overlap with other age groups, and there will be additional or different problems, depending on the local context. Use research to check and modify the summary for your situation.

**BOX 2.1: IDEAL FEEDING PRACTICES AND COMMON FEEDING PROBLEMS
BY AGE GROUP OR ILLNESS STATUS**

Age	Ideal Practices	Common Feeding Problems
0 up to 6 months	Exclusive breastfeeding; on-demand and frequently, day and night.	<ul style="list-style-type: none"> ■ Delayed initiation of breastfeeding. Giving prelacteal feeds in place of colostrum. ■ Feeding water, milk, or other liquids, usually by bottle (to accustom the child). ■ Premature introduction of complementary foods because the mother feels her milk is not enough to nourish the baby.
6 up to 9 months	<p>Continued breastfeeding on demand.</p> <p>Gradual introduction of soft, nutritious complementary foods.</p> <p>Total of approximately 280 kcal per day from complementary foods¹.</p>	<ul style="list-style-type: none"> ■ Dilute or watery foods with low nutrient density. ■ Delay in introducing complementary foods.
9 up to 12 months	<p>Continued breastfeeding.</p> <p>Increasing variety of foods, including mashed family foods, fruits and vegetables.</p> <p>Total of approximately 450 kcal per day from complementary foods.</p>	<ul style="list-style-type: none"> ■ Low frequency of feeding. ■ Low nutrient density: starchy or dilute foods continued. ■ Lack of variety.
12 to 24 months	<p>Family meals, plus snacks or special foods between meals.</p> <p>Total of approximately 750 kcal per day from complementary foods.</p> <p>Continued breastfeeding.</p>	<ul style="list-style-type: none"> ■ Inadequate amounts consumed per meal (small servings, lack of supervision, lack of appetite). ■ Lack of variety (lack of protein and/or micronutrients). ■ Low frequency of feeding.
7 to 24 months	Careful monitoring of child's intake; encouragement and assistance with feeding to ensure adequate intake.	<ul style="list-style-type: none"> ■ Child's refusal or lack of interest in eating. ■ Lack of persistence or coaxing of a child with poor appetite (however, forced feeding is practiced in some countries). ■ Quantity consumed is unknown; child is not given own serving of food.
Sick Child	Continue or increase frequency of breastfeeding. Continue feeding regular foods or switch to soft foods. Provide special foods or more food for several days once child feels better.	<ul style="list-style-type: none"> ■ Breastfeeding and feeding dramatically reduced or stopped (however, forced feeding is practiced in some countries). ■ Period of convalescence not recognized.

¹ These daily recommendations for energy from complementary foods are based on the International Dietary Energy Consultative Group's estimates (presented in Brown, Dewey, and Allen, 1996). If users prefer the more conservative estimates published by FAO/WHO/UNU (1985), then use 400, 520, and 850 kcal/day for ages 6 up to 9, 9 up to 12, and 12 to 24 months, respectively. See Appendix C for further details.

*Early infancy (from birth to about six months of age) the focus is on achieving **exclusive breastfeeding** with **adequate frequency**. (Some countries have policies suggesting exclusive breastfeeding for four to six months.) Early supplementation is the most common problem, with water being introduced almost universally and other supplements varying by culture. Issues such as breastfeeding style, cultural and familial support, maternal diet, sense of self-worth, and how to overcome breastfeeding problems are also important.*

In Swaziland, for example, most mothers had good breastfeeding techniques, but almost all introduced other milks by the end of the first month of life. The problem was not breastfeeding per se but its supplementation.

Babies from six months through eight months should be in a transition to complementary feeding, which is the process of introducing the first soft foods into the child's diet to complement, not replace, breast milk. During this period the key problem is the **energy and nutrient density** of the foods being introduced.

Energy density refers to the richness of a food, in terms of the energy or number of kilocalories (kcal) per 100 grams of food. Nutrient density refers to the quality of the food in terms of its protein, vitamin, and mineral content. Nutrient density is usually expressed per 100 kilocalories. Perhaps feeling that the first foods should resemble breast milk, mothers usually give foods that are too dilute, liquids with a lot of water and little food. Other important issues during this transitional period are use of utensils, not a bottle, and hygiene during food preparation and handling.

Among Nigerian mothers, liquid foods are favored for this age group and there is a tendency to add so much water to an infant's food that the energy density is less than half that of breast milk, leading to chronic undernutrition.

Delayed introduction of complementary feeding is also a problem in some cultures, where foods are not given until eight months or later.

*For children from nine to 11 months **frequency of feeding** becomes an important concern once the child has become accustomed to new foods and is beginning to need more food to supplement breastfeeding. Because most staple foods are bulky, children need to eat more frequently than the standard two to three times per day of the adult. Additional problems during this period are the continuation of liquid feeds (low energy and nutrient density) and a **lack of variety** resulting in a diet deficient in protein, iron, vitamin A, and other micronutrients.*

Young children in Cameroon at around a year of age receive boule, a bulky staple made from millet or sorghum, served with very little of the more nutritious sauce, making it hard for them to eat enough in a day to meet their nutrient needs.

*In the second year of life these concerns persist as the need for nutrients continues to grow, and many children breastfeed less frequently. **Increasing total food intake** is the greatest challenge because of the usually small quantities of solid food consumed at a meal. The paradox is that the child needs to be a part of family meals to receive the widest **variety** of foods possible, but still*

requires special attention to ensure **adequate amounts** of food at each feeding and more **frequent feeds**, such as fruit or enriched porridge between meals. Other key issues to examine at this age are attitudes, practices, and constraints to feeding a child who is sick or anorexic; consumption of snack foods; and local ways that mothers and caregivers can measure and quantify food consumption.

In Senegal children of this age eat from the family pot but are not always supervised closely by their mothers, so they have to struggle with other siblings to get their fair share.

During childhood illness, reduced food intake contributes significantly to poor growth and malnutrition in young children. The problem is that there is often no understanding of the need to feed sick children frequently and resistance from the children themselves. Also, the concept that following illness young children need more food to recover usually is absent. Here health workers and families may share beliefs about the need to reduce food intake or avoid certain foods during and following acute illness.

*Throughout the first two years, an additional common problem is **lack of supervision** of children's meals and **lack of persistence** in encouraging children to eat enough of the appropriate foods, especially when appetite is poor. A child may have a poor appetite because of illness, undernutrition, or the monotony of the diet; may fill up quickly when consuming dilute or bulky foods; or have a greater interest in playing than eating. Many mothers have passive feeding styles, leaving decisions about how often, how much, and what to eat up to the child. This passivity may reflect other issues, such as a lack of maternal self-confidence, cultural perceptions about the roles of women in initiating action and making decisions, a belief that children will demand as much as they need, or a lack of time and energy to devote to coaxing a fussy child to eat.*

Possible Solutions to Child Feeding Problems

For a solution or behavior change to be effective in improving child nutrition, it must either increase a child's intake of nutrients or reduce the occurrence or severity of disease (see Figure 2.1). There are four main ways to improve nutrient intake by young children.

1. Increase breastfeeding frequency.
2. Increase the amount of complementary foods consumed in a serving by:
 - giving larger servings and
 - encouraging the child to eat the whole serving and
3. Increase the frequency of complementary feeding by:
 - giving extra meals and
 - giving nutritious snacks between meals.

Mothers are willing to try to:

- Increase frequency of breastfeeding and decrease other foods and liquids for infants under six months.
- Prepare and offer an enriched complementary food as a first food.
- Feed the child more often.
- Feed the child from their own plates.
- Increase the quantity of solid food consumed in meals.
- Vary the child's diet adding foods from the family diet.
- Continue feeding solid food during diarrhea.
- Feed more solid food or special, high-energy foods during recovery from illness.

4. Increase the energy and nutrient density of foods by:
- reducing the amount of water or feeding a more solid food,
 - adding a high-energy source such as fat or sugar,
 - adding foods rich in protein or other essential micronutrients, and
 - using amylase or germinated (malted) grains to reduce viscosity (thickness) of solid foods.

Ways to reduce the occurrence and severity of disease include:

- increasing breastfeeding,
- improving food hygiene, and
- preventing micronutrient deficiencies (e.g., vitamin A, zinc).

These are general **types** of feeding behaviors that a program might target. These behaviors need to be translated into **specific practices** that families can implement using **specific foods** or preparations that can be added to a child's diet with *appropriate amounts and frequency of feedings* specified according to current meal patterns and nutrient density of the foods being provided. A review of program experience found that mothers are willing to try a variety of practices, listed in the box above.

Constraints to Improving Child Feeding Practices

The many constraints or issues that reduce the likelihood of families adopting better child feeding behaviors can be classified as environmental or attitudinal constraints (Griffiths, 1993). Environmental factors include the unavailability or seasonal variation in the availability of certain foods, the need to work outside the home, a scarcity of cooking fuel, or misinformation about child feeding given by health care professionals.

Attitudes that prevent improvements in child feeding are numerous. They will vary by culture, but certain issues are common:

- perceived insufficient quantity or quality of breast milk;
- perceived inability of child to swallow or digest particular foods/preparations;

- lack of maternal self-confidence or feelings of powerlessness in the face of resistance from the child;
- perception of time constraints for food preparation and feeding;
- traditional rules for food distribution within the family; and
- fear of spoiling the child with too much food or special foods.

Attitudinal resistances can be complex. Considerable probing may be required to gain insight on such issues, because the environmental or resource constraints are likely to be mentioned first. Strongly held perceptions and beliefs should be sought in creative ways because they are often taken for granted by families and therefore not easy to articulate.

Any constraint, environmental or attitudinal, needs to be approached directly, not ignored. New schemes to address environmental constraints should be sought. Counseling and communication to improve feeding practices should acknowledge the existing constraints without judging them, and then present ways of overcoming the constraints.

The general belief that a child can determine how much to eat can be countered by explaining that just as children must be taught to follow cultural rules or practices, they also must be taught to eat. Or, mothers' resistance to specific foods (beans, green leaves) that are seen as indigestible for children may be lessened by information on appropriate food preparation techniques—i.e., when the food is de-hulled, chopped finely, or well-cooked. To overcome mothers' concern with giving a young child hotly spiced food from the family pot, it may be suggested that the mother remove a portion for the child before adding the chillies.

Motivations for Improving Child Feeding Practices

No one changes established behavior patterns without a good reason. The strongest and most universal motivation for improving child feeding practices is, of course, parents' desire to do what is best for their children. But motivations are complex, with a basis in psychology, belief, and emotion, not just knowledge in scientific facts.

In focus group discussions conducted in Nigeria, mothers and fathers knew that breast milk was nutritious and prevented disease, but reported that the strongest motivation for breastfeeding was the creation of a bond of love between mother and child.

Because motivation is critical to effective communication strategies and messages, formative research must not neglect these issues. Motivation may involve personal beliefs about benefits or personal aspirations, or it may reflect the influence of others who are important sources of information or support (see box on the following page).

For example, a belief that milk formula is modern and good for babies may motivate fathers to purchase powdered milk after the birth of a child. That motivation might be redirected by promoting the idea that providing special food to breastfeeding mothers and helping them to breastfeed exclusively is a better way to welcome a newborn.

The removal of a constraint can be a motivator that should not be overlooked. For example, if clinic personnel now treat mothers more empathetically, use that information to boost attendance. Motivating concepts, words, and images vary from individual to individual, but qualitative research will help to highlight the motivations common to a particular group.

Care must be taken not to impose scientifically based so-called advantages as motivating messages, because this can easily backfire.

Detailed lists of additional issues related to key child feeding practices are enumerated (Box 2.2–2.5) in the next section.

Key Issues for Child Feeding Programs

In summary, child feeding programs need to be based on an understanding of:

1. the practices that make the greatest contribution to feeding problems,
2. acceptable alternatives for resolving the problems,
3. major constraints to change, and
4. strongest motivating factors/influences.

Possible motivations:

- Hopes and dreams for the child.
- The idea that a healthy, well-nourished child will do better in school.
- Parents' images of themselves and their roles in caring for the child.
- Less crying from a satisfied child.
- Less illness and related costs.

Influences:

- Fathers' role in assisting with feeding.
- Convenience of easy-to-prepare foods from a nearby food vendor.
- Fashionable, working women shown breastfeeding or using traditional foods.

This understanding should come from the research process described here. Issues that have emerged from previous research are listed by topic in four boxes as suggestions for you.

- breastfeeding (Box 2.2);
- the transitions to complementary feeding and the family diet (Box 2.3);
- persistence in feeding, lack of appetite, illness, and food hygiene (Box 2.4); and
- communication issues and influences (Box 2.5).

BOX 2.2: KEY ISSUES RELATED TO BREASTFEEDING

Key Practices	Key Beliefs and Attitudes
<p>Initiation:</p> <ul style="list-style-type: none"> ■ timing of initiation ■ feeding or discarding colostrum ■ use of pre-lacteal feeds ■ keeping mother and baby together 	<ul style="list-style-type: none"> ■ concept of milk letdown, milk coming in ■ perceptions of colostrum ■ need for ritual feeds, cleansing ■ need for maternal rest, supervision of newborn
<p>Breastfeeding style:</p> <ul style="list-style-type: none"> ■ frequency of feeding ■ feeding on demand/cues for feeding ■ length of time/who terminates feed ■ alternating use of each breast ■ night feeding ■ if and how child is carried with mother 	<ul style="list-style-type: none"> ■ image of breastfeeding ■ perceived benefits to child, mother ■ perceived disadvantages for child, mother ■ feelings associated with breastfeeding in public ■ perceived adequacy of breast milk and ways to improve supply
<p>Water supplementation:</p> <ul style="list-style-type: none"> ■ when and how often water is given ■ mode of feeding 	<ul style="list-style-type: none"> ■ why water is necessary ■ understanding of contamination risk
<p>Early supplementation:</p> <ul style="list-style-type: none"> ■ what is given (milk, formula, juice, cereal)? ■ when introduced? ■ how often/how much? ■ how (by bottle?) and by whom? 	<ul style="list-style-type: none"> ■ perceptions that breast milk alone is not enough, for the child and why ■ why supplements are necessary ■ perceived benefits of specific foods ■ desire to follow traditional practices ■ perception of work load
<p>Maternal diet/care:</p> <ul style="list-style-type: none"> ■ amount of food, relative to usual ■ types of foods ■ amount of fluid ■ support in home 	<ul style="list-style-type: none"> ■ perceived needs of lactating mother ■ taboos and reasons for taboos ■ beliefs about relationship of diet to quantity and quality of breast milk ■ feelings of stress
<p>Breastfeeding problems:</p> <ul style="list-style-type: none"> ■ common problems reported and their impact on breastfeeding ■ sources of assistance/solutions ■ external constraints/working outside the home 	<ul style="list-style-type: none"> ■ social support ■ perceived ease/difficulty of breastfeeding ■ perception of insufficient milk related to breast size, diet, confidence, etc. ■ cultural expectations of women ■ reasons for not breastfeeding

**BOX 2.3: KEY ISSUES RELATED TO THE TRANSITION TO
COMPLEMENTARY FEEDING AND TO THE FAMILY DIET**

Key practices	Key Beliefs and Attitudes
<p>Continued breastfeeding:</p> <ul style="list-style-type: none"> ■ duration ■ frequency 	<ul style="list-style-type: none"> ■ belief that breastfeeding can be reduced when foods are given ■ advantages and disadvantages of continuing to breastfeed
<p>Introduction of complementary foods:</p> <ul style="list-style-type: none"> ■ timing ■ types of foods given or avoided ■ given before or after breastfeeding 	<ul style="list-style-type: none"> ■ milestones or cues for introduction ■ rituals for introducing foods ■ beliefs about what foods are and are not acceptable and why
<p>Introduction of family foods:</p> <ul style="list-style-type: none"> ■ timing ■ types of foods given or avoided ■ ways of introducing (tastes from mother's plate, etc.) 	<ul style="list-style-type: none"> ■ milestones or cues for introduction ■ what can and cannot be given and why ■ perceived benefits of particular foods, concept of nutritious or nutritional value
<p>Feeding style:</p> <ul style="list-style-type: none"> ■ cup and spoon, bottle, or by hand ■ communal vs. individual servings ■ special preparations for children ■ who feeds food (mother, other adult, sibling, etc.)? ■ children's meal patterns vs. adult meal patterns 	<ul style="list-style-type: none"> ■ traditional feeding styles ■ perceived time constraints on feeding ■ ease of feeding liquids ■ desire for an independent child
<p>Quality of food:</p> <ul style="list-style-type: none"> ■ who prepares food and how ■ thickness and dilution ■ energy-density ■ special preparations for infants ■ variety: protein, micronutrients ■ use of fermentation, malting 	<ul style="list-style-type: none"> ■ perception of child's ability to swallow and digest foods ■ food taboos for children ■ attitudes about distribution of nutritious or desired foods within the family ■ perceived elite foods, light or heavy foods, hot and cold foods, etc.
<p>Quantity of food:</p> <ul style="list-style-type: none"> ■ frequency of meals and snacks ■ amount of serving/amount consumed ■ constraints (time, food security, etc.) and solutions or strategies ■ food distribution (amounts) within the family 	<ul style="list-style-type: none"> ■ perceived indicators that child's hunger is satisfied ■ socialization of child to accept amount given and not to ask for more ■ perceptions of desirable physical characteristics in a child ■ perceived food availability ■ perceived amount child needs ■ normal meal pattern

BOX 2.4: ADDITIONAL ISSUES RELATED TO CHILD FEEDING

Key Practices	Key Beliefs and Attitudes
<p>Encouragement of feeding:</p> <ul style="list-style-type: none"> ■ supervision of feeding, separate servings ■ methods of coaxing, encouraging ■ force feeding ■ decision-making about child feeding (timing, amount) 	<ul style="list-style-type: none"> ■ willingness to be patient and persistent ■ mothers' self esteem or passivity ■ perceptions of control: should child or mother initiate and terminate feeding? ■ perceptions of fullness or satisfaction ■ perceptions of time available to coax or help child eat
<p>Feeding during illness:</p> <ul style="list-style-type: none"> ■ continuing or stopping breastfeeding ■ changes in amount or frequency of feeding other foods ■ foods avoided or changes in food preparation ■ changes due to withholding or child refusal ■ advice of health care providers ■ coaxing and encouraging 	<ul style="list-style-type: none"> ■ belief that breast milk can cause or worsen an illness ■ if and why some foods perceived to worsen or cause illness ■ degree of concern about lack of appetite and weight loss ■ perception of child appetite
<p>Convalescence:</p> <ul style="list-style-type: none"> ■ change in amount or frequency of food or breast milk ■ control: who initiates changes? ■ methods of coaxing 	<ul style="list-style-type: none"> ■ concept of period of convalescence ■ concept of need for extra feeding during convalescence ■ cues that child is regaining health ■ concept of diet contributing to health
<p>Food hygiene:</p> <ul style="list-style-type: none"> ■ type of utensils (bottle vs. cup) ■ place where child eats ■ washing of hands, utensils ■ food storage methods and usual duration of storage, particularly of cooked foods ■ frequency of food preparation ■ water sources and storage 	<ul style="list-style-type: none"> ■ knowledge of relationship between contaminated food or water and illness ■ perception of time and resources needed for hygienic behavior

BOX 2.5: ISSUES RELATED TO COMMUNICATION STRATEGIES AND MESSAGES

Individuals/Influences	Practices and Beliefs
Family members	<ul style="list-style-type: none"> ■ relationships of family members ■ relationship of family to community ■ roles of fathers, mothers-in-law in child care, feeding ■ hopes for children's futures ■ images of a healthy child ■ perceptions of parental roles ■ trust in people who could provide information on nutrition ■ acceptance of societal norms ■ ways of seeking health care
Health service providers (traditional and modern) Community agents (agricultural extension, teachers, etc.)	<ul style="list-style-type: none"> ■ knowledge of appropriate child feeding ■ beliefs and attitudes about local families and their child feeding practices ■ counseling and health education skills ■ motivations and constraints to providing nutrition counseling ■ status in the community
Mass media	<ul style="list-style-type: none"> ■ types of media and coverage ■ proportion of men and women reached in different areas ■ health education programs and messages ■ popular programs ■ authority of medium
Food vendors Shop or stall owners	<ul style="list-style-type: none"> ■ products available ■ knowledge and attitudes about child feeding ■ willingness to promote improved feeding
Previous health and nutrition communication programs	<ul style="list-style-type: none"> ■ messages and materials ■ techniques/strategies ■ target population/coverage ■ successes and lessons learned

PHASE I: REVIEWING EXISTING INFORMATION AND DESIGNING THE RESEARCH

This phase involves identification of key concepts and questions to be investigated and design of your research.

The first step is to review the program objectives and existing information on infant and child feeding, communications, and other issues relevant to these objectives. The outcome of the review will be a summary of what is known and what information gaps exist. Chapter 3 covers this step.

The review and summary guide the process of designing a research plan: selecting the most appropriate approach, sample, and methods needed to answer the key questions. Design and planning issues are discussed in Chapter 4.

Objectives of Phase I

- *To determine the size and nature of the child feeding problem in relation to overall child health and nutrition situation.*
- *To review existing relevant information.*
- *To identify gaps in the information and plan ways to fill these gaps.*
- *To design a research plan that focuses on priority topics and participants.*
- *To plan the most efficient way to use available time, staff, and resources.*
- *To plan logistics of implementing research.*

CHAPTER 3: REVIEW OF EXISTING INFORMATION

In most countries a variety of information on child nutrition and feeding practices is available. In addition, information can be obtained directly by interviewing experts. Using a wide range of sources provides a range of information for decisions related to research.

All programs should begin with a review of existing information. Taking advantage of lessons learned in other child feeding programs can be extremely valuable and save time and money. It is important to keep the review focused on research questions that are relevant to program implementation.

Activities related to the review are summarized in the Task Box.

Objectives of the Review

To prepare a brief background document that:

1. identifies key nutrition and feeding problems, where they occur, why they occur, and what information gaps exist;
2. provides a basis of comparison with the information that will be collected during field activities; and
3. elaborates a set of recommendations about the program focus and specifically about the research design and analysis.

TASK BOX FOR REVIEW OF EXISTING INFORMATION	
Preparation Tasks	
Define objectives.	Who is the program for, what will it try to achieve, what outcomes are expected?
List relevant topics.	Nutrition problems, feeding practices, dietary intakes, beliefs, motivations, constraints, program and/or communication program experience.
Identify sources of information.	Surveys; qualitative and quantitative studies; national and regional data; local experts; program documents.
Implementation Tasks	
Obtain and review materials.	Review published and unpublished documents that provide information on nutrition and child feeding in the program areas.
Conduct key informant interviews.	Conduct discussions with people who are believed to have special knowledge about these topics.
Analysis and Documentation Tasks	
Summarize the findings.	Group all that is known on each particular issue or question.
Fill in child feeding Worksheet 3.1 and 3.2.	Note what is known about practices, problems, motivations, and constraints in the appropriate column, by age group.
Write a problem identification document.	Include summaries of existing information, gaps identified in the worksheets, guidelines on what issues the formative research needs to address.

Preparing for the Review

Define the Overall Program Objectives and Scope

The overall program objectives will determine the topics reviewed and, therefore, the documents reviewed and the kinds of individuals to be interviewed. It is important at this point to specify program objectives. The objectives may reflect political and funding constraints as well as public health priorities. Consider the following questions and examples when developing or clarifying objectives:

Who will the program reach?

The Weaning Project in Swaziland focused on children age 0 to 23 months. In Northern Cameroon children up to 36 months were included in the program because problems associated with the transition from breastfeeding to other foods continued into the third year of life. In the Gambia and Senegal, children with diarrhea were the key targets because the programs' objectives were to lower complications from diarrhea. In almost all of these programs the families to be reached were low income.

What issues or practices will be the focus?

Child feeding practices include a large number of topics, as illustrated by the lists of issues in Chapter 2. Depending on the program, certain issues such as dietary management of childhood illness, micronutrient consumption, or increased consumption of special complementary foods may be of specific interest.

Where will the program operate?

This is related to the *who* question and usually is defined geographically, often by a region or ecological zone. However, it also can be defined by need—i.e., a national program in the highest-need municipalities.

How are feeding practices likely to be addressed?

Although answering this question is one of the main purposes of the research, it is often possible to say something at the research planning stage about the *types of actions* that are likely to be within the scope of the program. For example:

- Is the program broad enough to handle a variety of activities (e.g., income generation, health care), or is it focused primarily on nutrition education or food security?
- Will the program be implemented through the health service delivery system or will it be community-based?
- Will promotion of home gardening and other agricultural interventions be considered? Will training be provided to health workers or to traditional practitioners?

List Relevant Topics for the Review

Some general topics are listed below. A more detailed list is provided in the section on writing the background document. Making a topic list will help to sort the information and ensure that sources for each topic area are identified.

Topics for review of existing information

- prevalence and patterns of undernutrition
- likely causes of undernutrition (such as inadequacies of food security, care, environmental conditions, or health)
- which demographic characteristics (i.e., ethnic group, rural or urban residence, region) are likely to have the strongest effect on child nutritional status and on feeding practices
- current child feeding practices and problems
- reasons for current practices and possible constraints and motivations for changing behavior
- individuals, services, and media that may influence child feeding
- locally available and affordable foods and their nutritional value
- experience and effectiveness of previous programs to improve child nutrition

Identify Sources of Information

Sources of child feeding and nutrition information include:

- government, donor, and non-governmental organization reports on the nutritional situation and nutrition programs;
- university publications and dissertations;
- nutrition surveys;
- market surveys and price information;
- food consumption data;

- ethnographic reports; and
- census data.

International and national organizations that fund nutrition and food-related research may be able to provide relevant reports or access to their libraries. The Demographic and Health Surveys (DHS) are good sources of up-to-date demographic information, and usually include data on child nutritional status and a variety of feeding practices. National nutrition surveys have been conducted in many countries, or nutrition and feeding data may have been collected as part of other large surveys. Regional surveys also may be useful. Qualitative or anthropological studies may provide detailed information on child-rearing or dietary practices.

Sources of information on health services, health service use, communications programs, and media may include:

- formative or evaluation research from other health programs,
- health facility surveys,
- private voluntary organizations,
- local market research and advertising agencies,
- radio and television stations and media surveys,
- government information offices and health education divisions, and
- groups working in non-formal and adult education programs.

If sources of information on infant feeding patterns and other important topics are difficult to find, contact local experts in community nutrition, maternal and child health, anthropology, and agriculture. These experts can be interviewed and asked about available studies and reports.

Conducting the Review

Obtain and Review Materials

Prepare a list of the documents to be reviewed and add to this list as other documents are identified. It saves time to get complete and correct reference information at the start (i.e., title, author, volume, date, where the document was obtained). One effective way to broaden the search is to look at the references cited by the documents that are being reviewed. Each document (or its relevant sections) should be read and notes taken on the key points *related to the topics of interest*.

It is helpful to record notes on each topic on *separate* sheets of paper so that these can be sorted and grouped in different ways for analysis. This is especially if more than one person conducts the review. Review the worksheets and the report outline included in later sections of this chapter for ideas on how to organize review notes.

Conduct Key Informant Interviews

Interview knowledgeable individuals to supplement and explain the information that is gathered during the literature review. Key informants also can report on “common knowledge”—i.e., issues and practices that may not be written down. If time and resources are limited, choose four individuals who are local experts in child feeding and nutrition.

Types of individuals to interview include:

- nutritionists,
- ministry of health technical personnel,
- health educators and communicators,
- home economists,
- pediatricians or other medical practitioners,
- personnel working for non-governmental organizations, or
- anthropologists or other social scientists.

Key informant interviews should be structured but open-ended. To focus the discussion, prepare a list of the subject areas to be covered in the background document. Keep detailed notes of the interviews, or tape-record them (with permission) and write notes later.

It is also possible to conduct discussions with small groups.

In Tanzania, prior to the design of the research, a group of experts at the Tanzanian Food and Nutrition Centre were called together to discuss child feeding issues. The group included specialists in breastfeeding promotion, nutrition education, and food science. Valuable information was gained, and it was especially helpful to see that there was general agreement on some points and a range of opinion on others.

More detail on methods for conducting interviews and group discussions is included in Chapters 5 and 7.

Interviews in Tanzania helped to identify:

- major ethnic groups to include,
- unpublished reports on nutrition programs and small studies,
- traditional feeding practices such as the use of fermented milk,
- local organizations with expertise in health and nutrition education, and
- government policy and norms.

Analyzing and Writing up the Review

Summarize by Theme or Question

The review is most useful if it is well-organized and brief. Organize notes or summary sheets into piles for each topic of interest, highlighting the points that are widely agreed upon, those that are controversial, and those about which little is known. Note the patterns or general trends and any significant exceptions to these patterns.

The information from written reports and interviews can be combined, but it is important to indicate the source of findings, because one key informant's opinion may carry less weight than the results of a national survey. Generally, opinions expressed by key informants are very useful to suggest issues, foods, and practices to ask about in the research, but should not be taken as fact without checking other sources.

The same techniques described for analysis of qualitative data in Chapters 5–8 are used to analyze the findings of the literature review and key informant interviews. The basic approach is to:

- read through notes taken on the documents and interviews;
- use codes, colors, or comments in the margins to mark sections related to key themes and to highlight important points;
- keep a list of the important themes, adding new ones as they are identified;
- sort pages or excerpts of pages into piles of information related to each theme; and
- draft the report by summarizing the main points under each theme.

Fill in the Child Feeding Matrices

A primary objective of the review is to pull together what is known about child feeding practices and the influences on those practices. Worksheets 3.1 and 3.2 are designed to help to summarize these issues.

- Complete separate worksheets for each age group, using multiple copies of the blank worksheets found in Appendix A. Choose the age groups to reflect the stages of child feeding in the local culture or use standard intervals such as 0–5 months, 6–8, 9–11, 12–17, and 18–23 or some variation of this pattern. The age classifications for various practices usually overlap because the studies reviewed often use different groupings to describe their results.
- Each worksheet also has a space to indicate the ideal feeding practice. Refer to the information in Chapter 2, and to national policies and norms on child feeding. Recommendations such as those in *Facts for Life* (UNICEF, 1995) also may be helpful.

- It is usually not possible to fill in *all* the spaces on these worksheets from the review. Filling in the worksheets summarizes existing information and helps to show where there is a *lack of knowledge* and a need for further study. Often, motivations and constraints to improved practices (on Worksheet 3.2) are unknown before trials of improved practices are conducted.

List the feeding practices by age group on Worksheet 3.1. Compare this list of practices to the ideal practices and classify each practice as having a harmful, helpful, or unknown impact on child nutrition. From the information reviewed, try to indicate which practices are problematic and likely targets for improvement through the program.

Worksheet 3.1: Classification of Current Practices

Age Group: 6-9 (Fill in one or more sheets for each age group.)

Ideal Feeding Practices: Continued breastfeeding. Introduction of soft, nutritious foods (2-3 times per day)

CURRENT FEEDING PRACTICES	CLASSIFICATION			HOW COMMON? AMONG WHAT GROUPS?
	HELPFUL	HARMFUL	DON'T KNOW	
Majority: Giving sorghum or maize-based pap 4-5 times per day <hr/> Minority: remote rural areas still primarily breastfeeding - pap 1-2 times per day	high/adequate frequency <hr/>	<hr/>	<hr/> probably not frequent enough but dilution makes it nutritionally inferior to breast milk	throughout the country, almost all children this age eat pap <hr/> maize in South, sorghum in North <hr/> only remote, "traditional" villages
Over-dilute, watery pap is common. Usually no added ingredients		not nutrient-dense		very common in rural areas and low income urban more educated mothers may add milk, egg, or sugar

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Using Worksheet 3.2, list the key feeding problems (the harmful practices identified in Worksheet 3.1) and the factors that influence these practices. In column 2, "Motivations for Current Practices," include families' beliefs about why a feeding practice is good or necessary and the people or other influences that support it. Motivations are not what is scientifically correct or what *you* believe.

Compare actual practices to ideal practices. Draft recommendations that can improve child feeding and nutrition, and note these suggestions or what needs more investigation to complete in column 4. For more information on ideal practices, see Chapter 2 and the list of references on child feeding.

Examples of motivations for current practices:

- "We have always started giving maize porridge at this age."
- "Force-feeding saves me time."
- "I gave herbal infusions after birth to cleanse my baby's digestive tract."
- "My baby feels thirsty—that's why I always give a bottle of water."
- "The health worker told us to stop solid foods during diarrhea."

Examples of constraints to improving practices:

- "If I make the porridge thicker the child will not be able to swallow it."
- "A child who is fed eggs will become a thief."
- "My mother-in-law will not allow me to feed greens to a small baby!"
- "Relish ingredients are too expensive—I cannot give extra to this child."
- "How can I breastfeed more often when I am at work all day?"

Appendix B includes examples of recommendations used in other programs.

From the information gathered during the review, also try to identify the constraints on families' ability to improve child feeding practices, and list them in column 3. These may involve external constraints, such as limited resources, or internal attitudes and beliefs against the new behavior. More detail on these constraints will be added after testing the recommendations.

Use the same age groups as in Worksheet 3.1. If practices vary widely among ethnic groups, geographic areas, or rural/urban residence, separate sheets can be completed for these population groups. If there is not a lot of information available, Worksheets 3.1 and 3.2 can be combined into one form.

Worksheet 3.2: Key information for Assessment and Counseling Guide for TIPS

(Fill in one sheet for each age group. Add sheets for any population groups with major differences.)

Age Group: 6-9 **Population Group:** rural Yoruba (regional, ethnic, religious groups)

Ideal Feeding Practices: Continued breastfeeding on demand. First foods are soft (not liquid) but nutrient-rich.

CURRENT FEEDING PROBLEMS	BELIEFS, PRACTICES, AND INFLUENCES:		RECOMMENDATIONS
	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	
pap is watery	<ul style="list-style-type: none"> - white, liquid pap looks like breastmilk - can feed child quickly 	<ul style="list-style-type: none"> - child can't swallow thick pap - takes too long to spoon-feed (mothers are very busy) 	<ul style="list-style-type: none"> - thin pap with a small amount of breastmilk instead of water - gradually making the pap thicker each day
many mothers do not add anything to enrich pap	<ul style="list-style-type: none"> - inexpensive, available - belief that plain pap is nutritious 	<ul style="list-style-type: none"> - extra ingredients mean more cost and time to prepare - beans, sugar cause diarrhea if not well-cooked 	<ul style="list-style-type: none"> - enrich pap with ingredients that are available in the home such as cooked and finely ground soy beans, peanuts, banana, etc.

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Prepare a Problem Identification Document

Write a brief report summarizing existing information, pointing out gaps, and making recommendations for research. Include the completed worksheets and any other tables that were prepared to summarize the information. This document should cover the following issues.

Describe child nutrition problems:

- Where are the children most malnourished? In what age groups? In what population groups?
- What types of undernutrition occur (chronic, acute, micronutrient)?
- What are the most important causes of undernutrition (illness, food availability, inappropriate practices, etc.)?

Identify other important health or environmental problems:

- What illnesses are most common among young children?
- Are there difficulties with water supply and sanitation? What are they?

Describe child feeding practices (see Boxes 2.2–2.5 for details):

- What are the patterns and practices of breastfeeding (initiation, the first months, later after foods are introduced)?
- When are other foods introduced? What foods?
- How are foods for children prepared? Are commercial foods popular for young children? If so, which ones?
- How are young children fed? By whom?
- How many meals are children fed? Do they get snacks?
- What locally available and affordable ingredients could be added to children's diets to improve nutrition?
- What happens to feeding during a childhood illness?

Describe mothers' and other family members' beliefs and attitudes regarding child feeding, nutrition, and health:

- What are the reasons for current practices?
- How strong are the beliefs and attitudes? Which will be most difficult to change?
- What could motivate changes in behavior?
- What beliefs or external constraints could prevent improvements in feeding practices?
- What are prevailing attitudes about children (by gender if important) and parenting?
- Whom do mothers trust for advice on child feeding? Who makes decisions in the household on child feeding?
- What role do community groups and institutional programs play?

Identify the population groups that should be the focus of research and programs to improve child feeding:

- What groups seem to differ greatly in feeding practices?

- Are there important differences in rural and urban practices?
- Are there important religious and/or ethnic differences?
- Do practices vary by region or climate (i.e., coastal, desert, forest)?

Describe the channels through which services and educational programs could be delivered:

- What services are provided by the government health system? By private or traditional health systems?
- What types of trained personnel are available?
- What are their responsibilities?
- What staff and mechanisms exist for community-level outreach and education?
- What traditional or non-formal information systems, such as mothers clubs, literacy programs, or folk theater, could be used?
- What is the coverage and potential effectiveness of mass media?

Describe health care providers' knowledge, attitudes, and skills related to counseling on child feeding and nutrition:

- Are government workers prepared to provide counseling?
- Are there traditional or non-formal practitioners who could provide counseling?
- What misconceptions about child nutrition and feeding are common among health care providers?

Examine past and current efforts to improve nutrition or communicate information about infant and child feeding and health:

- What media have been used and with what impact?
- What educational messages are being communicated?
- What lessons have been learned?

Identify the gaps in existing knowledge, including specific practices/beliefs or broad subject areas and types of data.

Broad examples:

- an absence of household-based research on actual feeding behaviors,
- a lack of qualitative information on mothers' beliefs and attitudes, or
- a tendency for most research to cover only one of the major ethnic groups.

Specific examples:

- a lack of information on whether and how mothers encourage or coax a child to eat,
- poor understanding of the reasons for very low rates of exclusive breastfeeding when most mothers claim breast milk alone is enough, or
- unknown energy density of first foods given because the amount of dilution has not been measured.

Insights gained from the review of literature conducted in Swaziland:

- *Stunting is common from an early age, due to chronic undernutrition.*
- *Feeding practices and frequent illness (not severe food shortages) are the main causes of poor growth.*
- *Breastfeeding practices are documented and there is a group active in breastfeeding support, but there is little information about how problems are resolved.*
- *Use of non-human milk is very common, beginning with newborns. A great deal is known about the use and marketing of milk.*
- *Little is known about precise practices related to the introduction of foods, nutrient density, and how feeding practices can be improved.*
- *The health services weigh children but conduct little education and conduct minimal community outreach.*
- *Health service personnel have many false ideas about infant feeding. They need to be interviewed in more detail to plan training sessions.*
- *The traditional health system is well developed and popular but its role in child feeding advice is unknown.*
- *Many people listen to radio programs and there is local expertise and experience in developing educational radio programs.*

When the questions or key issues listed above cannot be answered or described, this represents a gap in the existing information. Once the review has identified the key issues and gaps, design a research plan that is efficient and practical. As noted earlier, a thorough, well-focused review of existing knowledge and a set of clear objectives are the most important tools to guide the process of research design.

CHAPTER 4: DESIGN AND PLANNING OF THE RESEARCH

Planning research involves a series of decisions. The process is one of specifying the research questions, appropriate groups to sample, and most practical methods for collecting the needed information. The review document has already summarized what is and is not known, which helps to make decisions about key research questions and the sample.

This chapter lists the main decisions that must be made and suggests ways to design a research plan to fill in the information gaps. Then it discusses the logistical issues related to implementation of the research plan. The main tasks for this stage are listed in the box below. They are listed in somewhat chronological order, although many of the tasks are interrelated and their order may vary.

TASK BOX FOR PLANNING THE RESEARCH	
Preparation Tasks	
Define the research objectives and questions.	<ul style="list-style-type: none"> ■ based on review document ■ reflecting program objectives
Select the core research team.	<ul style="list-style-type: none"> ■ research director ■ field supervisors
Decision Guide for Research Design	
Specify the research components in addition to Trials of Improved Practices (TIPs).	<ul style="list-style-type: none"> ■ is exploratory research needed? ■ is checking research needed?
Choose population segments and types of population units.	<ul style="list-style-type: none"> ■ regions to be covered ■ population groups (ethnic, language, rural/urban, etc.)
Choose categories of participants.	<ul style="list-style-type: none"> ■ mothers and primary caregivers ■ other family members ■ health care providers ■ other influential people
Choose age groups of children to be included.	<ul style="list-style-type: none"> ■ overall age range of children ■ age groups to reflect feeding practices
Choose specific research methods.	<ul style="list-style-type: none"> ■ if exploratory or checking research is needed, what type?

Select sites (population units) within each segment.	<ul style="list-style-type: none"> ■ number of sites ■ criteria for sites
Develop the research plan.	<ul style="list-style-type: none"> ■ fill in Worksheets # 4.2 and 4.3
Logistics for Fieldwork	
Plan field personnel and supervision needs.	<ul style="list-style-type: none"> ■ number needed per site/method ■ quality control ■ plan transport and accommodation
Schedule training and fieldwork.	<ul style="list-style-type: none"> ■ time needed for each step
Estimate cost requirement.	<ul style="list-style-type: none"> ■ budget
Select the field team.	<ul style="list-style-type: none"> ■ criteria for field workers ■ train a few more than required
Train the field team.	<ul style="list-style-type: none"> ■ general training issues

Preparation Tasks

Define the Research Objectives and Questions

To design the most efficient research plan, begin by defining your key research objectives, based on the background review and overall aims of the program. Then, for each research objective, specify the detailed questions that need to be answered. The research questions are likely to resemble those listed at the end of Chapter 3—i.e. the questions that could not be answered by the review of existing information.

Research objectives and specific questions identified as priorities in Swaziland were:

- 1. To learn about the balance of traditional and modern concepts influencing decision making on child feeding.**
 - *How does Swazi tradition influence decisions and why?*
 - *How does the concept of "modern" influence decisions and why?*
 - *Who influences different decisions?*

- 2. To investigate the relationships among the concepts of health, growth, and food.**
 - *What is the image of a healthy child?*
 - *What are families' perceptions about growth?*
 - *In what ways are foods seen to be connected with child health?*

- 3. To gather detailed information on feeding practices of children under two years of age.**
 - *How is food prepared for young children? How much are foods diluted? Why?*
 - *What breastfeeding problems or doubts are of concern to mothers and how are they resolved?*
 - *What are the usual serving sizes and frequency of feeding, by age?*
 - *How do women's work patterns affect child feeding?*

- 4. To learn about health workers' knowledge of, attitudes toward, and influence with mothers concerning child feeding.**

Select the Core Research Team

The **core research team** refers to a small group of people who will be responsible for planning, supervising, and analyzing the research. The core team should include:

- **a research director** whose primary responsibilities will be planning, supervising staff, following the research plan and protocols during implementation, and analyzing the research results;
- **a nutritionist** who will help develop nutritionally sound recommendations and analyze dietary information; and
- **other experts** on the methods or topics of the research, who will assist as needed.

The field team, consisting of field supervisors and interviewers, can be hired later, as discussed at the end of this chapter.

Ideally, all members of the core research team participate in all aspects of the research (training, interviewing, observation, analysis, and report writing). Early recruitment of the technical resource persons is critical so they can be involved in decisions on research design, sampling, and question guides. If the research is limited so that just one or two persons function as field supervisors, it is beneficial to hire them early so they can participate in planning.

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

Individuals with some training in nutrition and/or the social sciences are ideal candidates for team membership. The team should include at least one person who is knowledgeable and experienced in community nutrition programs. The core team should be capable of using all of the research methods that are planned, willing to stay for extended periods in the communities, and able to participate until the research is completed. Ideally, some members of the team will also be involved in implementing the program that follows from the research.

Box 4.1 lists skills and experience that will be important elements of the core research team, although no one person needs to have all of the qualifications. Expertise that is lacking can be obtained by consulting with local experts, such as communications specialists or anthropologists.

BOX 4.1: SKILLS AND EXPERIENCE NEEDED ON THE CORE RESEARCH TEAM

- Respect for the perspective of potential program participants and willingness to learn from the participants are essential attitudes of all team members.
- Experience with qualitative research and data analysis.
- Program experience and an orientation toward community development.
- Technical expertise in nutrition and child health.
- Management skills: financial, logistical, personnel.
- Writing skills.
- Willingness and time available to provide close and supportive supervision of field activities.
- Democratic style: willingness to listen to the interviewers and learn about the results of the field work.
- Familiarity with local languages and cultures.

Decision Guide for Research Design

This manual describes a range of qualitative methods for studying different aspects of child feeding. *It is not expected that every program will make use of all of them.* As explained in Chapter 1, we have tried to develop a flexible approach that allows the research team to tailor the most efficient research design for its needs. The choice of methods, participants, and sites for the research will depend on the research questions you have identified.

Choose the Research Methods

Use the decision guide in Box 4.2 to guide your selection of research methods. It is important to remain flexible, recognizing that the plan can be adjusted as information is collected.

The core method of this manual is trials of improved practices (TIPs)—step 3 in box 4.2—which can stand alone or be combined with exploratory and/or checking research methods.

TIPs are used to test the response of mothers and children to new feeding practices that are potential program recommendations.

Box 4.2: BASIC DECISION GUIDE FOR SELECTING RESEARCH METHODS

1.	Review existing information and design research:	
	<ul style="list-style-type: none"> ■ Is sufficient information available to design household trials and develop feeding recommendations for testing? 	<p>If yes, proceed to #3.</p> <p>If no, proceed to #2.</p>
2.	Conduct one or more of the following types of exploratory research if information is needed on:	
	<ul style="list-style-type: none"> ■ Mothers' beliefs, motivations, and constraints related to child feeding practices. 	Conduct in-depth interviews with mothers. (p. 5.2)
	<ul style="list-style-type: none"> ■ Actual feeding behavior (frequency consistency and type of food, amount, interaction with child, etc.) especially if you believe reported details may not be accurate. 	Conduct observations in conjunction with interviews. (p. 5.2)
	<ul style="list-style-type: none"> ■ Palatability, acceptance, quantities served, consistency, time for preparation, and ease of teaching new or modified existing recipes to improve children's nutrient intake. 	Conduct recipe trials . (p. 5.20)
	<ul style="list-style-type: none"> ■ Health care providers' motivation and ability to provide effective counseling on child feeding. 	Conduct in-depth interviews or focus group discussions (FGDs) with health workers. (p. 7.2)
	<ul style="list-style-type: none"> ■ Images and perceptions related to child health and feeding. 	Conduct FGDs (along with other techniques) with mothers and/or other family members
3.	Based on results of Steps 1 and 2, develop a guide with recommended behaviors to be tested.	Conduct trials of improved practices (TIPs) . (p. 6.1)
4.	Based on results of Step 3, refine the program plan and messages. Conduct one or more types of checking research if needed:	
	To check responses among people not exposed to the household trials and obtain immediate reactions to recommendations and motivations for behavior change.	Conduct FGDs with mothers in other communities of the same population segments.
	To check acceptability of the actions and messages among program personnel, implementors, or key influential people.	Conduct key informant interviews or FGDs with relevant people. (p. 7.2)
5.	Analyze results, develop strategy, and move toward program implementation.	

Some programs may have access to enough existing information on child feeding to allow them to develop a set of recommendations for testing right away. In such cases, the research will begin with step 3, the TIPs. Other conditions that may permit restricting the research only to TIPs include narrowly focused objectives; a well-defined and small program area; well-trained staff with nutrition counseling experience; time and resource constraints; or use of the method as a training technique only (as discussed in Chapter 10).

However, in many cases, additional information will be needed to draft an initial set of recommendations. Therefore, the first step in designing the research is to decide *if* additional methods are needed, then *which* methods are most appropriate.

■ **Is exploratory research needed?**

Exploratory research is used before TIPs to identify important feeding problems and solutions, and to gather additional information that may be needed for program strategy development.

Exploratory research is needed if:

1. more information about current feeding practices and attitudes is required to develop feeding practice recommendations for testing or
2. the views of fathers, grandmothers, health workers, or other people who influence the primary child care giver are required. This issue is discussed in more detail under research participants.

Box 4.3 can be used to guide decisions on exploratory research.

Box 4.3: DECIDING ON THE NEED FOR EXPLORATORY RESEARCH

	If yes:	If no:
<ul style="list-style-type: none"> ■ Can you complete Worksheet 3.1 for the relevant age groups? ■ Can you fill in columns 1 and 4 of Worksheet 3.2? (information on motivations and constraints can be gathered with TIPs) ■ Can you complete Worksheet 6.1 (assessment and counseling guide) for the relevant age groups? 	<ul style="list-style-type: none"> ■ Go to Worksheet 3.2. ■ Go to Worksheet 6.1 in Appendix A; a completed example is included in Chapter 6. ■ Go to Chapter 6: you are ready to design TIPs. 	<p>Identify what information is missing and use box 4.2 to decide which exploratory methods to use.</p>

■ **If yes, what methods for exploratory research are needed?**

This decision depends on the research questions. The methods covered in this manual include:

- in-depth interviews,
- observations,
- recipe trials, and
- focus group discussions (FGDs).

Look back to the decision guide in Box 4.2; it lists the most appropriate methods for exploring different research questions. Choose the methods best suited to the gaps or questions identified during the review of existing information.

■ **Is checking research needed?**

It may be necessary to follow up the TIPs with checking research to confirm the findings in other population groups or with participants who have not been involved in earlier steps of the research. Checking research is important if:

- You plan to have repeated, intensive contact with a small sample for interviews and trials, because responses may start to be biased by involvement in the research. It would be advisable to check final recommendations with people who have not already participated in the research.
- You want to obtain feedback from program staff or policy-makers to the recommendations after testing them with mothers.

■ **If yes, what methods are needed for checking research?**

This question is difficult to answer before the research begins, and your plan may need to be adjusted on the basis of findings in the field. The checking techniques covered in this manual are focus group discussions and interviews. The choice between them is based on the type of participants and the topics to be discussed. Convening a focus group discussion with a group of mothers or fathers may be a convenient and effective way to get their reactions to some nutrition messages. However, if health workers' input is needed, interviews may be more appropriate because the workers are scattered in various locations. Attitudes toward most child feeding topics are usually discussed freely in a group setting; however, the privacy afforded by interviews might be necessary to get honest opinions on sensitive issues.

Examples of research designs from some African programs are found in Box 1.2. Details on specific research methods are provided in Chapters 5 through 7.

It is important to remember that the research plan depends on the program objectives, available resources, and research questions. There are trade-offs of time and cost with each method. Tailor the plan and include only the essential methods and topics.

Guidelines for Selecting the Sample

Selecting the sample for consultative research requires the following steps: choosing population segments; identifying appropriate sampling units within these segments; choosing categories of participants; choosing the age groupings for children of participants; selecting sites; and developing the research plan. These steps are described below.

Choose Population Segments

A population segment is a group of people defined by characteristics that affect the topic of interest, young child feeding. The specific characteristics used to define segments are those that are expected to reflect significant differences in child feeding practices and related beliefs.

The following questions guide decisions about selecting population segments:

- **Where are the problems greatest and who is most likely to benefit from the program?** (Worksheet 4.1, Part A)
- **What groups (categorized by geographic area, rural vs. urban residence, ethnicity, religion, etc.) are the focus of the research?** (Worksheet 4.1, Part B)

In some settings, the priority groups already may be partially defined by political, funding, or other factors. In these cases, focus on the most appropriate segments within the designated groups.

In other cases, segments must be selected from a large and varied population. The information gathered during the review provides the basis for segmenting the population for the field research.

To select population segments, begin by completing Part A of Worksheet 4.1 to summarize where nutrition problems occur.

Examples of population segments

Nigeria (4 segments)

1. Yoruba people (south-central), urban
2. Yoruba people rural
3. Hausa people (north), urban
4. Hausa people, rural

Tanzania (3 segments)

Arusha region only (north, highland)

1. Meru people, rural:
2. Masai people, rural
3. Mixed ethnicity, urban

Ghana (5 segments)

National scope:

1. North, near main town
2. Forest, farming, remote
3. Forest, farming, near main road
4. Coastal, fishing village
5. Coastal, peri-urban area

Swaziland (4 segments)

National scope:

1. Rural, accessible
2. Rural, remote
3. Urban, peri-urban poor
4. Urban, company town

BOX 4.4: CRITERIA FOR SELECTING POPULATION SEGMENTS

- Scope of the program.
- Areas with high prevalence of undernutrition.
- Geographic or ecological areas: mountains, highlands, coast, plains, drylands, or other zones that affect the types of food available and work-related practices that can affect time and other resources available for child feeding.
- Factors such as degree of urbanization, language, ethnic or religious affiliation, which influence maternal roles, child feeding practices, and/or access to channels of education and communications.

Fill in Part B of Worksheet 4.1 using the information available and sound judgment. Examples of population segments used in several programs are shown in the box on page 4.11.

For most programs, no more than four population segments should be selected, although programs of national scope may require more segments. Create segments *only* when groups differ so much that different activities, messages, and/or communication strategies are required to reach them. Choosing *too many segments* increases the complexity, duration, and cost of the research. Do not collect detailed information on more groups than the program itself can target with tailored actions.

For example, typical segments are two distinct ecological zones where diets are different, such as highlands and lowlands. In the lowlands the lifestyle differences between rural and urban residents may be large, and undernutrition may be widespread in urban areas with recent migrants. This scenario suggests three sampling segments: lowland rural areas, lowland urban areas with long-term residents and recent migrants, and highland rural areas.

Choose Population Units

- **What type of community or defined cluster of dwellings is typical of each segment?**

The next step is to select the type of population units to include in the research. A population unit is a community or cluster of people. Each unit should contain 35 to 50 children in the age group of the study (e.g., 0–24 months) to provide a large enough population for recruiting households.

- In rural areas people usually live in villages or in separate homesteads or compounds that include extended-family members. A village is a population unit, but a compound is too small. A defined area with many compounds could be a population unit.
- In urban areas there are often zones of different social class, ethnicity, or degree of urbanization. A shanty town is an example of a population unit in an urban area. If urban zones are large, choose smaller neighborhoods within them.

Fill in Part C of Worksheet 4.1. Actual sites will be selected later. Selection of sites is easiest if well-recognized boundaries of the units are selected, such as standard units reported in census or local government listings.

Choose Categories of Participants

- **Who does and/or influences child feeding?**
- **Whose input is needed to answer the research questions?**

TIPs are conducted with mothers or primary caregivers of young children. The age range of children to be included in TIPs is discussed below. It also is useful to sample mothers who vary by other characteristics that may affect feeding practices or willingness to accept recommendations. For example:

- maternal age, or parity and past experience with mothering;
- work status: within or outside of the household; or
- maternal educational level.

For methods other than TIPs, it is also useful to sample people other than mothers and primary caregivers who have a direct or indirect influence on child feeding. Those who may influence mothers, either through their professional roles or through personal relationships, include the following groups:

- *Fathers* rarely prepare food, but may have major control over food distribution in the family and the mother's mobility outside the home or community. They may play an important role in cultivation of food crops and raising animals and may purchase some or

all of the family food. Fathers often influence mothers' food selection, preparation, and feeding practices, particularly when the child is ill.

- *Mothers-in-law* and *mothers' mothers* may have significant control over family practices and decisions.
- *Policy makers* need to understand the health impact of undernutrition and program interventions if they are to be expected to provide essential resources for programs.
- *Health workers* may be a primary source of information and support on child feeding issues and are often the ones who will carry out a new program.
- *Community groups and leaders* and *other development workers* can support a variety of program interventions.
- *Storekeepers* and *street vendors* promote and sell foods and may be considered a source of information on child feeding.

Fill in Part D of Worksheet 4.1.

Not all participants will be included in each research method, but if a group's influence is important and needs to be strengthened or altered, it should be included in the program strategy. This means that it is important to include them in at least one step of the research, to learn their opinions, motivations, and resistances. Determining **whom** to talk to helps guide the decision about which methods to use, as shown in Box 4.2.

Choose Age Groupings of Children

- **What age groupings reflect transitions in feeding practices?**
- **What age groups have nutritional problems?**

Choose the appropriate age groupings for children on the basis of what is known about infant feeding patterns and the patterns and prevalence of undernutrition by age.

Suggested age groupings are:

- Zero to less than six months (when exclusive breastfeeding is recommended);
- Six to less than nine months (a period of high risk for infection and malnutrition, when infants begin to need complementary foods);
- Nine to less than 12 months (when children are introduced to a greater variety of foods);
- 12 to less than 18 months (when children are able to walk and often are considered ready for a transition to the family diet);



- 18 to less than 24 months (when children need even greater quantities of nutrient-dense foods because breastfeeding is decreasing); and
- 24–36 months (when nutrient needs and morbidity may be high, but children often are left to feed themselves with minimal adult supervision).

The age groups may be divided differently to reflect culturally relevant practices. For example, if there is a local ceremony at 10 months to mark a milestone in children’s lives, this may be a more appropriate break point than the nine months cut-off suggested above.

It may be possible to narrow the overall age range or reduce the number of groups, depending on the local situation and the scope of the program. For example:

- If the prevalence of undernutrition is no longer increasing in the third year of life, no major transitions in child feeding occur during this period, and rates of illness are not changing, it is not necessary to include children over two years.
- If other research indicates that feeding practices do not vary much between the first and second half of the second year of life, those two age groups can be combined to form one group.

Choose the age groupings that are most appropriate to the research questions and the local culture, and fill in Part E of Worksheet 4.1. These age groups guide the *sampling* of households.¹

Develop the Research Plan

Decisions on whom to talk to (Worksheet 4.1) are now combined with decisions on the kind of research required (i.e., exploratory, TIPS, and/or checking). With this information, it is possible to draft a research plan frame that outlines the types of participants to select for each research phase. Examples of research plans for exploratory research and TIPS are provided in Worksheets 4.2 and 4.3, and blank worksheets are in Appendix A.

If the research plan includes **exploratory research**, fill in Worksheet 4.2 using your notes on Worksheet 4.1.

- Write the selected population segments and units in the top row.
- List the types of units under each segment.
- In the first column list the categories of people who will be interviewed or included in groups. General headings are provided, but this does not mean that all of these types of people must be included. For example, the exploratory research may be done only with fathers and health workers because there is enough information on mothers’ practices to go directly to TIPS.

¹ The results may be analyzed by grouping the children differently, if new information emerges to indicate that other age cut-off points are more informative.

- In the second column fill in the method selected. There will be blank spaces in the plan because not all types of participants or methods are included in every segment.

For TIPs fill in Worksheet 4.3, using notes from Worksheet 4.1.

- Write the population segments and units across the top of the blank research plan.
- List the age groups selected for the trials in the first column.
- If there are any additional selection criteria, write the age group more than once and specify the other criteria in the second column. For example, a study may include well-nourished and undernourished children in each age group. In this case, the age 0–5 months is specified on the first two lines of column 1, and well-nourished and undernourished are specified on lines 1 and 2, respectively, of column 2.

Choose the Research Sites

Next, identify the actual sites where the research will be conducted, based on the population segments and types of units chosen earlier. Select the specific villages, neighborhoods, or zones that are included, using the guidelines in Box 4.5.

BOX 4.5: SELECTING RESEARCH SITES

- Selection takes place at several levels.
- The sites should be representative of the program area in terms of socio-economic status, access to health care and other services, food availability, and other characteristics that are likely to affect the recommendations or the way the program will be delivered.
- Select two or three sites that are representative of each population segment.
- If necessary, the findings in these sites can be confirmed in other sites, using some of the checking methods discussed in Phase 2.

If a listing of suitable population units (such as cities, census zones, etc.) is available, sites may be selected randomly. But, because qualitative research includes a small number of sites and a small sample, purposive sampling is often best for this research.

Purposive sampling means choosing a site on purpose because it has characteristics representative of the population that a program aims to serve (see Box 4.5). It does *not* mean choosing a site just because it is convenient for the research team. If you do not have enough information to select sites based on specific characteristics, it is better to select sites randomly. Visiting potential sites to assess their suitability is very useful at this stage. Site selection is an important step; choosing inappropriate sites can bias the research findings.

Choose the Sample Size

The sample size is the number of people or households selected to participate in the research. There are no definitive rules for calculating sample sizes in qualitative research, but including at least two or three individuals per participant category in each population unit is recommended. For TIPs, the sample should include 10 to 15 children from each site, or two to three children in each age group per site. If there is another characteristic of particular interest, such as whether children are growing well or are ill, the sample size is increased.

Using these estimates, determine the number of participants needed within each site to ensure that the major age groups and relevant characteristics are covered adequately. General points about sampling are noted in Box 4.6.

BOX 4.6: NOTES ON THE SAMPLE SIZE

- Although research sites may be selected purposively, individuals in those sites should be selected randomly.
- A purposive sample is chosen to represent the characteristics of interest in the research and program. Because the sample is not random, it is not representative in the statistical sense. It is not valid to apply statistical tests to results based on a purposive sample.
- Decisions about sample size must be taken in light of time and budgetary constraints.
- Because there is no statistical process for calculating the sample size, during the research the team may decide *not to interview* the entire sample, if interviews after a certain point stop yielding new and useful information.
- Alternatively, the team may decide to *add interviews* of a certain type of respondent on the basis of early findings.

On Worksheets 4.2 and 4.3 fill in the planned sample sizes in each cell—i.e., the numbers of respondents to include for each category and each population segment.

It is not necessary to prepare a detailed research plan for the checking methods at this point because the types of participants, sites, and methods will depend on the findings of the TIPs. A draft framework that lists the anticipated topics for checking research may be helpful.

Finally, add up the sample sizes for each column in the research plan and examine the total sample size for TIPs. Evaluate whether the design and sample sizes are feasible within the time and resources available. If reductions in the number of sites or types of participants are required, it is better to make these revisions at the beginning of the process to minimize the impact of collecting information from fewer participants. Try to streamline the research plan by considering the rationale for each method, topic, and population segment and eliminating methods, topics, or segments that are not essential to program design and implementation.

Worksheet 4.2: Sample Research Plan for Exploratory Research

Participants	Methods	Population Segments			
		A. Highland, urban	B. Highland, rural	C. Lowland, urban	D. Lowland, rural
		Population Units 1. low income neighborhood 2.	Population Units 1. local government area (scattered homesteads) 2.	Population Units 1. shanty town 2. low income neighborhood	Population Units 1. villages 2.
Mothers:					
working at home	recipe trials	1 group	2 groups	1 group	2 groups
working outside home	interviews	10	not applicable	10	not applicable
Other family members:					
fathers	FGDs	2 groups	2 groups	1 (thought to be similar)	1
mothers-in-law	FGDs	not applicable	2	not applicable	2
Health care providers:					
health workers	interviews	5	(none available)	5	3
TBAs	interviews		3		3
Other influential community members:					
Totals:					

70

Worksheet 4.3: Sample Research Plan for Trials of Improved Practices (TIPs)

Participants		Population Segments				
Mothers of children aged (months)	Other criteria	A. Highland, urban	B. Highland, rural	C. Lowland, urban		D. Lowland, rural
		1. low-income neighborhood 2.	1. government area 2.	1. shanty town 2. low income neighborhood	1. village 2.	
0 to 4		2	2	2	2	2
5 to 8						
5 to 8	well-nourished	1	1	1	1	1
5 to 8	undernourished	2	2	2	2	2
9 to <12	well-nourished	2	2	2	2	2
9 to <12	undernourished	2	2	2	2	2
12 to 17	well-nourished	2	2	2	2	2
12 to 17	undernourished	2	2	2	2	2
18 to 24	well-nourished	1	1	1	1	1
18 to 24	undernourished	1	1	1	1	1
Totals		15	15	15	15	15

Planning the Logistics of the Project

The objective of this section is to facilitate planning for the resources and arrangements needed to conduct the research. Thinking about these issues now allows more efficient implementation of the fieldwork.

Plan Field Personnel and Supervision Needs

The number of staff needed depends on:

1. the number of interviews, discussions, and TIPs to be implemented and
2. the amount of time available for completion of the study.
 - If time is short and the sample is large, it is advisable to have several teams working simultaneously, thereby increasing the number of staff needed for data collection and for supervision.
 - The accessibility and distance between sites affects the plan: if sites are very far apart, it may make sense to send separate teams to different sites rather than have one team travel long distances between sites.
 - The various research methods also require different staff numbers and qualifications and different amounts of time to complete.

All of these decisions have salary, accommodation, and transport implications.

Field supervision is critical to the effective performance of the team.

- It is essential that someone be responsible for logistical issues such as transport, scheduling, and making sure that staff have what they need to conduct the research.
- At the same time, oversight of sample selection and careful review of the data collected is an important determinant of data quality.
- Daily supervision is necessary to catch errors or incompleteness of data, so that field workers can revisit households or individuals to correct any problems.
- If teams are working in widely separated sites, additional supervisors are needed.

The research director should make frequent unannounced visits to observe field activities and examine a sample of data forms. The director occasionally should accompany interviewers to understand their work and offer suggestions for improvement. It is also helpful if the director or supervisor validates each interviewer's work early in the research process. This entails revisiting homes where interviews were done and confirming the information obtained. For this type of work, it is important to train supervisors to be supportive rather than critical in dealing with

problems and inconsistencies. It is better to have staff feel free to ask questions and raise issues than to have them cover up mistakes out of fear of disapproval or criticism.

Schedule Training and Field Work

To facilitate coordination of activities, draw up an implementation plan that shows the planned dates for initiation and completion of all stages of the research, including training, travel time, sample selection, data collection, and analysis. Time requirements vary widely, but some estimates of the number of interviews or group discussions that can be done by a person each day based on previous experience are in Box 4.7.

Estimates for the total time per phase based on past experiences are in Box 4.8.

BOX 4.7: TIME ESTIMATES FOR VARIOUS RESEARCH METHODS

Method	Number per day
1. Household depth interviews with observation	1–2 by each interviewer
2. Recipe trials	1 using a 3-person team
3. Trials of improved practices (TIPs)	2 by each interviewer for the first visit 3 by each interviewer for each follow-up visit
4. Key informant interviews	4 by each interviewer
5. Focus group discussions	2 using a 3-person team
6. Recruitment (average for all methods)	1 day per method
7. Preliminary analysis in the field (average for all methods)	allow one-half day for every 2 days in the field

These estimates are recommended as guidelines to assist in calculating the number of field interviews and time required to conduct the research. In locations where populations are very dispersed, it may not be possible to conduct more than one or two interviews or trials per day and time estimates should be increased accordingly.

In some cases an activity cannot begin until a preceding step has been completed; in other cases overlap is possible, which shortens the overall schedule. It is wise to avoid scheduling too many field activities simultaneously because this makes supervision more difficult.

BOX 4.8: TIME ESTIMATES FOR DIFFERENT RESEARCH STEPS

Step	Time	Comments
1. Literature review	1–3 weeks	Depends on number of people and amount of literature.
2. Research design	1 week	
3. Logistics/personnel	1–2 weeks	Depends on procedures and availability of people. If contract is with a company, contracting procedures may take longer.
4. <i>Exploratory:</i> Training Fieldwork Analysis	1 week 3 weeks 2 weeks	Will vary depending on sample size.
5. <i>TIPs:</i> Planning Fieldwork Analysis	1 week 3 weeks 2 weeks	Will vary depending on sample size.
6. <i>Checking:</i> Planning Fieldwork Analysis	3 days 1–2 weeks 1 week	Will vary depending on sample size.
7. Final report and recommendations	2 weeks	
TOTAL for the full process, including exploratory research: about 6 months TOTAL if it is possible to move directly from the background review to TIPs: 3–4 months		

Use the implementation plan to calculate transport and accommodation needs and to make arrangements in advance. It is recommended that the field staff (interviewers and field supervisors) stay overnight in or near the research sites, at least during the work week. Returning to their home location on a daily basis greatly increases the amount of time spent traveling. Interviewers need to be available to meet participants at their convenience, perhaps in the early morning or in the evening. Living together as a team also provides opportunities for frequent debriefing, retraining, and initial analyses of the findings. The cost of accommodations and food, including a driver, is likely to be compensated by reduced fuel costs and less salary expenditure because of the shorter duration of the study.

Prepare a Budget

To estimate the budget required for the research, include the following line items:

Personnel

1 research director
1 field supervisor per field team
field workers
expert help, such as a nutritionist, focus group moderator, etc.

Transportation

vehicle rental (1 per team)
drivers (1 per team)
fuel, oil, maintenance

Accommodation and meals

During training (meals, snacks)
During fieldwork
During analysis and report writing (if done away from home)

Research supplies (for training, fieldwork, analysis, report writing, and dissemination)

Paper, notebooks, pencils, erasers	(all activities)
Photocopies	(all activities)
Flipcharts and transparencies	(training, analysis, report writing, and dissemination)
Computer and printer supplies	(optional; mainly for in-house production and printing of materials)
Tape recorders and cassettes	(optional; mainly for FGDs)
Calibrated cups and implements	(for dietary assessments)
Food, cooking fuel, and utensils	(for recipe trials)

Other expenses

Honoraria for field assistance	(if appropriate)
Facility costs	(if needed for dissemination workshop)
Printing summary of findings	(if appropriate)

Administrative expenses

Secretarial and related support
Financial support
Overhead allowance

Select the Field Team

Hopefully, the recruitment process was started before reaching this point, as suggested in the preparation tasks section of this chapter. Now that there is a research design and plan for recruiting personnel, it is time to select the best candidates. Depending on who is responsible for the research, these may be Ministry or program staff who take leave from their usual responsibilities, or they may be short-term employees, hired only for the period of the research. Some important qualities to look for in selecting interviewers are summarized in Box 4.9.

If possible, it is advisable to select more staff than needed and include them in the training program. The advantages of this approach are that it allows leeway to hire only persons who perform well during the training, and if a few additional staff are needed later to replace workers who quit or become ill, there is already a pool of trained applicants.

In setting up the team, the research director should establish good communication and cooperation within the team. Making an effort to foster good team morale is important because field work can be difficult both physically and emotionally. Ideally, field workers work in teams of two or three members, although they conduct interviews individually. A small team can move together to each community, each person 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.

BOX 4.9: CHARACTERISTICS TO LOOK FOR IN THE FIELD TEAM

- Fluency in the local language(s).
- Ability to establish rapport with strangers, converse naturally, and put people at ease so that they can express themselves freely.
- Ability to observe and record situations without judging or distorting.
- Empathy with the type of people who will be interviewed.
- Maturity, ability to handle difficult situations that may arise during fieldwork.
- Comfort in discussing child care, child illness, and child feeding issues. (While 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 live and work in the study communities during the research.
- Ability to analyze a situation, think and act independently, and write adequately.

Train the Field Team

During training, field staff are oriented on background and general issues related to the research prior to learning about and practicing the research methods. Suggestions for more specific training on each method are included in Phase 2. If different teams are being trained to undertake separate methods, it may be efficient to bring them all together for an initial overview session. Topics to covered during training are listed in Box 4.10.

Materials to distribute during the general training include an outline of the research and program objectives, a reference document on infant feeding, worksheets reviewing existing information, and a list of key points on the qualitative research approach.

Box 4.10: GENERAL TRAINING TOPICS

- Overview of the program, its background and objectives.
- Objectives of the research.
- Outline of the training: objectives, format, schedule.
- Qualitative research methods: theory, attitudes, skills.
- Background information on child nutrition and feeding practices and their relevance to health.
- Expectations of field staff: responsibilities, attitudes, supervision.
- Field conditions and logistical arrangements.
- Overview of the research design, including methods, participants, and implementation schedule.

The training sessions should be as participatory as possible, using training techniques such as discussions, small-group exercises, and roleplays. Listen to trainees' suggestions, and find out about their previous research and program experience. Also be clear about expectations and the ways in which this approach is unlike research they may have conducted before, such as surveys. Include as many members of the research team as possible—i.e., supervisors and people who will be involved in analysis and writing, as well as the interviewers.

The general training takes one or two days to complete. Then proceed to specific training in the selected methods, as discussed in Chapters 5 through 7.

PHASE 2: FORMATIVE RESEARCH METHODS

Phase 2 addresses implementation of research activities from the development of question guides, through training and data collection, to initial analysis of results. Chapter 5 covers the exploratory methods, including in-depth interviews, observations, and recipe trials. Chapter 6 describes the Trials of Improved Practices (TIPs), and Chapter 7 discusses the use of checking techniques, such as focus group discussions (FGDs) and key informant interviews.

Each chapter covers the major steps that need to be taken for preparation, implementation, and analysis of the various methods. These basic tasks are quite similar for all of the methods that involve data collection: sampling, developing research guides, training the team, collecting the data, analyzing the results, and writing summary reports. The aspects that vary—such as the content of the guides, the skills needed by team members, and the nature of the sample—are highlighted and illustrated with examples. Examples of question guides, data forms, and summary tables that were used in previous research studies are in Appendix B at the end of the manual.

Objectives of Phase 2

- *To implement the formative research plan by:*
 - *developing question guides and recording forms,*
 - *selecting sites and recruiting participants,*
 - *training field workers, and*
 - *conducting planned research.*
- *To monitor fieldwork and revise research plans and methods, as needed.*
- *To summarize results as information is collected.*

Chapter 5: Exploratory Research

The Methods: In-depth Interviews, Observations, and Recipe Trials

A variety of exploratory methods can be used to better understand feeding practices and develop recommendations **prior** to conducting trials of improved practices (TIPs). Usually, at least one of these methods is implemented, except in cases where considerable qualitative information on child feeding is available.

The best mix of methods to use depends on the context and purpose of the work, as summarized in Box 4.2.

- **In-depth interviews** are recommended to understand attitudes and practices of mothers and other family members, health workers, or influential people.
- **Observations** are best for learning about actual practices and usually are conducted during an in-depth interview.
- **Recipe trials** are used to understand the potential for modifying existing recipes or developing new food preparations.

Information contained in this chapter is useful for planning and implementing exploratory research, and for planning and implementing the initial visit of the TIPs when a separate, exploratory research stage is not conducted.

IN-DEPTH INTERVIEWS AND HOUSEHOLD OBSERVATIONS

In-depth interviews and household observations are complementary and often are implemented at the same time. The primary objectives are:

1. to gather information on current feeding practices and problems that impede proper nutritional intake,
2. to identify the resources available to solve these problems, and
3. to formulate specific recommendations for testing with families during TIPs.

The in-depth interviews and observations involve direct questioning, structured and open observation, and open-ended discussion with mothers, primary child caregivers, and other family members in their homes. They may also include in-depth interviews with health workers or community leaders.

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. The key to successful qualitative research is deep probing of issues raised as mothers respond to the questions. Try not to cover too many topics or the interview becomes a survey with little probing.

When planning this phase, remember that the outcome is a description of:

- actual practices and major problem areas,
- possibilities for improving problem practices (i.e., feeding recommendations to test with TIPs),
- major constraints and motivating factors that hinder or promote the key practices, and/or
- attitudes and beliefs of other people who influence the feeding practices of primary care givers.

TASK BOX FOR IN-DEPTH INTERVIEWS AND OBSERVATIONS		
Preparation Tasks	In-depth Interviews	Observations
Prepare the protocol and guides.	■ question guides	■ observation guides
Revise the research plan.	■ ensure that sample is suitable for question guides	
Train the field team.	<ul style="list-style-type: none"> ■ developing rapport ■ questioning and probing ■ dietary assessment ■ recording and forms 	<ul style="list-style-type: none"> ■ unbiased observation ■ what to look for ■ structured forms
Test and revise the protocols and guides.	<ul style="list-style-type: none"> ■ to refine and correct and to familiarize trainees ■ to estimate amount of time needed for each interview 	
Draft a field plan based on the research plan and results of testing the protocol.	<ul style="list-style-type: none"> ■ specify number of respondents per group (age, respondent category, etc.) in each site ■ plan now to recruit respondents and divide the interviews among the field team members 	
Implementation Tasks	In-depth Interviews	Observations
Recruit the households.	<ul style="list-style-type: none"> ■ select households ■ obtain informed consent 	
Conduct household interviews and observations.	■ interview and record findings	■ observe household, feeding episodes, etc.

Conduct interviews with other respondents.	<ul style="list-style-type: none"> ■ select participants in research plan categories ■ conduct interviews, but usually not observations 	
Analysis Tasks	In-depth Interviews	Observations
Analyze the interviews and observations.	<ul style="list-style-type: none"> ■ initial analysis ■ sort groups, summarize by themes, interpret 	<ul style="list-style-type: none"> ■ compare with interview findings ■ examine new issues raised
Develop recommendations for testing with TIPs.	<ul style="list-style-type: none"> ■ list possible recommendations, constraints, motivations 	
Draft a brief report.	<ul style="list-style-type: none"> ■ summarize findings and priorities for next steps 	

Preparing the In-depth Interviews and Household Observations

Prepare the Protocol, Question, and Observation Guides

1. Protocol

Prepare a brief written protocol of the steps to follow in the field, from recruitment, through data collection, to initial analysis. This facilitates training and supervision by providing a document to which everyone can refer. The protocol describes the steps for site selection, sampling of households and respondents, and conducting the interviews.

2. Question guides

Develop the question guides and recording forms that are used to collect the information. Question guides are structured to facilitate note-taking and subsequent analysis. The question guide has several sections:

- *Background information* that is important for analysis and interpretation. For example, child's birthdate, mother's level of education, ethnic group, etc. Remember that this is **not** a demographic survey, and no question should be added if it is not relevant to the research objectives.
- If *anthropometry* is measured, include space to record the measurements taken. Of course, field workers need the appropriate equipment, training, and charts to interpret the measurements. References containing instructions on how to measure young children's weight and height correctly are included in the bibliography.
- *List the open-ended questions and probes.* Probes are ways to ask for more information after an initial response is given. They help to guide the interview. All questions must be phrased in a neutral way so the respondent does not think there is a right or wrong answer. Questions that

are answered with yes or no generally are avoided. The ideal is to allow the interviewee to tell her story.

For example, ask, "How do you prepare the pap for your infant?" (not "Do you thin the food you prepare for your infant?") Similarly, ask, "How do you feel about what the health worker said to you about...?" (not "How good do you think the advice was from the health worker?")

In qualitative research the phrasing and ordering of questions may vary among interviews. Interviewers ask for elaboration and explanation of new topics or relevant issues that arise during conversation. In this way, qualitative research is different from survey research. The key to successful qualitative research is training interviewers to recognize relevant issues and to encourage participants to discuss them openly.

Several useful questioning approaches are described in Box 5.1. Examples of household interview guides are included in Appendix B.1. Additional references on qualitative research methods are found in the bibliography.

BOX 5.1: QUALITATIVE QUESTIONS FOR IN-DEPTH INTERVIEWS

Several types of questions are formulated, depending on the topic and information desired:

- **Descriptive:** These questions request an account of something, such as an event, organization, etc., in its local context using local language. For example, "What do you do if your child refuses to eat?"
- **Structural:** These enable interpretation of how things, including knowledge, are structured and organized. For example, "What are 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 food and an unhealthy food?"
- **Why:** These ask the respondent to explain the reasons for a situation or an action in his or her own terms. For example, "Why do you give your child this food at that age?"

Major topic areas for interviews with mothers or other primary care givers include:

- breastfeeding practices and related attitudes;
- infant feeding practices (introduction of foods, bottle feeding, types of preparation, methods and cues for feeding);
- perceptions of different types of locally available foods;
- illness history;
- health-seeking behavior;

- perceptions of child growth and development; and
- sources of information on child feeding (mass media, family members, health personnel).

See Chapter 2, particularly Boxes 2.2–2.5, for more detailed lists of topics to address in in-depth interviews.

Where specific information on the dietary intake of children is needed, interviewers should conduct a 24-hour dietary recall in addition to the qualitative questions on feeding. This dietary assessment method is discussed in Chapter 6. Dietary recalls require a carefully designed format, special interviewer training, and proper analysis. Appendix C contains guidelines for the team nutritionist on how to use the dietary information.

The topics covered during interviews with fathers, other family members, or health workers may be a subset of or somewhat different from those covered in the interviews with mothers.

In Swaziland fathers were interviewed about their role in purchasing and bringing home special foods for the infant, including milk formula.

In Ghana fathers were interviewed about their overall role in child-raising. Mothers-in-law in Pakistan play a very important role in influencing decisions about child feeding, so they were interviewed on issues such as how breastfeeding practices have changed, what they recommend, when and why.

In Nigeria health workers were asked what they recommended and whether they felt that mothers followed their advice and why or why not.

These examples illustrate that the emphasis varies greatly among programs. One study cannot cover *all* of these topics.

3. Observation guide

If observations are planned, the question guide must include space to record observation notes. For conducting structured observations, specify the behaviors of interest (see Box 5.2).

- For unstructured observations, the observers write a description of everything that happens during a certain event, such as a feeding.
- For structured observations, the observers have a checklist of practices to observe and record on special forms. For example, key features to observe during a nursing episode include who initiated the feeding, what cue was given that it was time to feed, how long the feed lasted, whether the child fed from both breasts, how the child latched on, how comfortable the mother seemed, and who terminated the feed.

A sample structured observation form is included in Appendix B.2. More detailed descriptions and instructions are found in Bentley et al., 1994.

- If interviewers are in the home for an entire day, dietary intake is best recorded by observation rather than 24-hour recall. Observed feeding practices also can be used to validate the recall findings.

BOX 5.2: TOPICS FOR STRUCTURED OBSERVATIONS

- Mothers' activities, particularly with respect to the care and feeding of the target child.
- Children's activities and behavior, and how mothers and other caregivers respond to them.
- Breastfeeding, bottle feeding, and other child feeding occurring during the visits.
- Food preparation, including special foods for the child; family foods; food consistency and dilution; ingredient and portion measurement.
- Family and child meal time, including who feeds the child; whether the child has his own plate; supervision and feeding style; active feeding by mother; whether the child eats all the food offered; special practices and behavior during illness and recovery.
- Conditions in the home, including hygiene (water, garbage, animals); a food inventory; food storage practices.

The draft question guides are pretested and refined several times prior to beginning fieldwork. The final pretest is done during interviewer training.

Revise the Research Plan

Review the research plan developed in Worksheet 4.2. Participant and time requirements often call for adjustments after the question guides are developed. Respecify the numbers and categories of participants for the in-depth interviews and observations and reduce or increase them as necessary.

To define the age groupings for children living in the houses where the in-depth interviews and observations will take place, use a process similar to that described on Worksheet 4.3. Identify the most appropriate age categories, from nutritional and cultural perspectives. Consider whether these categories are too broad and need to be narrowed.

For example, if the Phase 1 review provided adequate information on infant feeding during the first three months and suggested that feeding practices do not change greatly after 24 months, interview in homes with children three to 24 months only. If the review also suggested that mothers of well-nourished children have different feeding practices from mothers of undernourished children, as is very often the case, select homes with well-nourished and undernourished children of similar ages so that practices and attitudes can be compared easily. An illustrative research plan for this example is shown below.

**Illustrative Research Plan for In-depth Interviews
and Observations per Site (multiply by number of sites)**

Age (months)	Well-nourished	Undernourished
3–5	1	1
6–8	2	2
9–11	2	2
12–17	1	2
18–24	1	1
Totals	7	8

In this example, 15 children from each population unit (i.e., village or neighborhood) are selected to participate in the household in-depth interviews and observations. This number will increase if a wider age range or more children within one age grouping is desired. If only undernourished children are selected, the total per site can be reduced accordingly. If this example includes four sites (i.e., villages), the total sample is 60 households.

The research plan also lists the other family members and influential people to interview and/or observe, as described in Worksheet 4.2. Findings from the in-depth interviews are intended to reveal knowledge, attitudes, and practices but not to estimate prevalences or be interpreted statistically. Select the number of interviews that is likely to capture the *range* of behaviors and attitudes present in the population, and that can be managed by available personnel using available resources.

Draft a Field Plan

The field plan specifies *who* is involved (the number of each field team members and their responsibility), *when* (their schedule), and *where* the information is gathered (the exact locations and households if recruiting is already done).

A number of factors are considered in drafting this plan:

- Local logistics (including flights, ferry schedules, other transportation, market days, local customs, and holidays, for example).
- The number of household interviews each team member is expected to do each day. As shown in Box 4.7 interviewers usually can complete two household visits per day, with time for travel, rewriting notes, and organization. If the field team has four members, and there are 24 families to visit in each community, the fieldwork requires about three days per community to complete. If the field team works in pairs, the time is doubled to six days.
- Other people to be interviewed, including health workers and other influential people.
- The special skills of particular team members. For example, there may be only one person per team who can take anthropometric measurements or speak and understand particular

local dialects. Or some team members may be trained only to interview and observe in homes with infants whereas others may specialize in interviews and observations of older children.

- The time needed for discussion and reflection on the information collected, as well as organization of field notes and revisiting households when necessary.
- Time for traveling to sites and recruiting the participants.

Train the Team

General training on the overall program and the basics of qualitative research was discussed in Chapter 4. Each field team member who conducts interviews and observations needs specific training in the purpose, methods, and use of the information collected. The training on interviews and observations requires about four days beyond the basic field training. It includes:

- discussion of each step in the interview and observation protocol;
- instructions on correct use of the recruitment forms and practice in recruiting (recruiters may or may not be the same people 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 note-taking skills and identifying and pursuing conversational cues (new and interesting comments that are relevant to understanding current feeding practices, resistance points, and motivations to change);
- instruction *and practice* in taking anthropometric measurements (optional);
- instruction *and practice* in prompting a complete dietary recall and completing food recall forms;
- instruction *and practice* in developing observational skills;
- instruction *and practice* in using a tape recorder (optional);
- examples of how findings are used to develop program strategies and messages (found in this manual); and
- pretesting and revision of field instruments (at least one day in homes).

Qualitative questioning skills are learned best through role-playing using the question guide. Trainees interview each other and then discuss their ability to conduct an open-ended, nonjudgmental interview. This is also an effective way to have the question guide translated, if necessary.

Observation skills are also developed during these role plays by asking trainees to explain what behaviors they noticed during the role play. Trainees should visit a community and practice observing and recording different activities.

Handouts for the training sessions:

- A course agenda.
- A summary of the objectives, methods, and desired outcomes.
- A tentative field plan for the in-depth interviews and observations.
- A brief description of different interview techniques.
- Instructions for special procedures (24-hour food recall; weighing and measuring children).
- All research instruments.

Implementaion of the Interviews and Observations

Recruit the Households for In-depth Interviews and Observations

Recruitment, using the research plan, is a necessary part of selection that can be done by the field team or local community workers. Recruitment can be carried out while the question guides are being drafted and tested, so that the research process is not lengthened. The steps are enumerated in Box 5.3. The research director supervises recruitment in case there are problems, such as locating enough respondents with the specified characteristics.

It is important to avoid obtaining a biased sample during recruitment. For example, selecting only houses that are along a road or near the health center usually results in a sample of households that is not typical of the community.

A recruitment sheet is completed for each household. A sample recruitment sheet is in Appendix B.3.

When recruiting households it is advisable to find children with a variety of ages if the age groupings are very wide because feeding practices often vary within broad age ranges. For example, if the research plan calls for three children aged 12–18 months, avoid recruiting two 13-month-olds and a 14-month-old. Also avoid selecting households that are extremely unusual due to social or medical problems, and selecting households from the very poorest sections of a village only.

BOX 5.3 : STEPS IN RECRUITING HOUSEHOLDS

- Recruiters visit all homes in the population unit or work from a census listing of all households in the community. They have directions specifying the characteristics of persons to be recruited. A recruitment sheet is completed only for families or participants with the desired characteristics.
- Information on the recruitment sheet includes:
 - child's age (a confirmed birthdate, if possible);
 - child's recent illness history and/or weight measurement (nutritional status), if these are selection criteria;
 - other selection criteria determined by the program (ethnic or religious affiliation, etc.);
 - complete address or location of the home, names of mother and father; and
 - willingness of the family to have someone visit in the following few weeks to ask questions and observe.
- The research director:
 - sorts recruitment sheets into appropriate categories (age group, nutritional status, 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; and
 - assigns households to interview teams or interviewers, if possible.

Conduct Household In-depth Interviews and Observations

The household in-depth interviews and observations are the key techniques for identifying problems and potential solutions. Interviews are carried out in each home during one visit or over the course of several visits. Observations and assessment of nutritional status and diet can be conducted during the same visits. The length of time and number of visits depends on what is being observed or discussed and on the participants' reaction. If a visit is too short, participants may not have the time to relax and provide in-depth information. If a visit is too long, or too many visits are made, participants may become frustrated by the inconvenience.

Prior to initiating an interview, it is important to establish credibility and a level of acceptance with the family. Visit the formal or informal community leader to ask for his or her permission to carry out research in the community and explain why the information is being collected. Some programs may want to hold a community meeting to introduce the interviewers before fieldwork

begins. In other places the interviewers may make brief introductory household visits. It is not always advisable to identify the interviewers by profession, especially if they are doctors or nurses, because this can bias people's responses.

Establishing a friendly relationship with participants generally is not difficult if interviewers are sympathetic and speak the local language. Once rapport is established, the family will not feel it must treat the interviewer like a guest, but will go about usual chores, leaving the interviewer to complete notes or to help.

The *in-depth interviews* usually are held in the home or around the housing compound. Specific interview topics, such as food preparation, are 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 behaviors. Interviewers move around the home with participants, allowing them to continue their daily chores during the interview.

Dietary recalls require greater concentration by participants. These are conducted in the most comfortable environment possible, at a time when participants are not distracted by other tasks.

An interviewer who is in the house repeatedly or for an extended period can introduce discussion about the neighbors or local problems to divert the conversation but still reveal the participants' 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.

Start the interview with the basic questions listed earlier: name, address, and family composition. Then guide the conversation by asking different types of questions, probing, and requesting clarifications. Be careful to keep these questions free of suggestions of correct or desired responses.

Unlike formal surveys, where responses are brief, in-depth interviews encourage clarification of what each person says. Ask the respondent to explain the full meaning by repeating or rephrasing a question. Questioning does not have to stick to the guides. In-depth interviewing involves probing for information on new themes and issues as they emerge. If people are reluctant to talk because they do not think they have any information to offer, offer assurance that their views are of great interest and importance.

Decide whether the in-depth interviews are to be taped. Extensive note-taking helps to get the most out of the interviews but it is difficult to take extensive notes and listen attentively at the same time. If the field team lacks prior experience with note-taking, it is worthwhile to tape the in-depth interviews. In this case, field workers listen to the tapes after an interview and add details to their field notes as required. Transcribing the tapes is not necessary.

Interviews are summarized immediately so that decisions about modifying guides and exploring new lines of inquiry are made and acted on.

Structured observation is a method for obtaining information about specific practices (food distribution at meal time, where the baby is in relation to the mother throughout the day, or food preparation by the mother, for example). Open observation is when interviewers notice something casually (the presence of a food or other products in the home, for example).

Observations conducted during the interview capture the context in which behaviors occur and identify new behaviors or new issues not discussed in the question guide. Observations may confirm or contradict what the respondent reports during the interview and are an extremely important part of the home interview.

Conduct In-depth Interviews with Other Participants

Other participants to interview may include

- family members: fathers, grandmothers, aunts of the child;
- individuals who are currently giving advice on child feeding, pregnancy, or treatment of disease (traditional birth attendants, local healers, community volunteers, health workers);
- other potential sources of information (change agents) including pharmacists, storekeepers, market women, teachers, etc.; or
- 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 or political leader).

It is best if these individuals are interviewed separately and privately, so they feel free to express their own opinions without fear of contradicting each other. This is also easier for the interviewer, because the question guides are different for the various categories of participants, and it is very difficult to record adequately several people's simultaneous answers to questions.

Each participant selects a convenient location and time for the interview. The interview is structured but open-ended, as discussed for the in-depth household interviews. It is relatively short, preferably not longer than an hour (in contrast to the longer household interviews).

Analysis of the Interviews and Observations

Do Initial Analysis of the Household Results in the Field

Interview results include summaries, tabulations, and insightful verbatim answers.

Notes taken during the interview are reviewed and summarized with some analysis each night to identify important issues or insights. During the initial analysis:

- Each field worker completes his (or her) field notes from each interview and observation. Clearly labeled household summary sheets are prepared, as described below.
- The field supervisor reviews all field notes, makes comments, and requests clarifications when necessary.
- The team and supervisor discuss new issues and problems. Changes to the question guide are possible at this stage.

In the field, interviewers summarize the information from each household by topic and content. Relevant information from various sections of the guide are cross-tabulated. For example, maternal work patterns are compared with child feeding frequency and style, reported practices are compared with observed behaviors, etc. Clearly labeled summary sheets highlight key findings and simplify future analysis tasks. A sample summary sheet is in Appendix B.4.

The feeding history and dietary recall information for each child is summarized separately, using one page per child. Each page is coded with the selection or other criteria, such as the age of the child, area of residence, illness status, or mother's work status. This coding allows sheets to be shuffled, as needed, during different types of analyses. For these reasons, clear labeling is essential.

A sample feeding history summary is in Appendix B.5. Dietary assessment guidelines for the team nutritionist are in Chapter 6 and in Appendix C.

Sort and Summarize After All the Information Is Collected

The research director, with assistance from the supervisors and field interviewers, is responsible for summarizing all of the interview and observation data across households. This summary identifies patterns in practices and attitudes, and compares and contrasts different population segments and participants. Initial research questions guide the direction of the analysis.

Decide the relevant ways to sort the information (i.e., by site, maternal age and experience, ethnic group, etc.). Then create summary tabulations for important pieces of information. Summaries present responses on a single topic for all households in one site or for all households in the sample. Generally, small groups are compared with one another.

For example, separate the notes into piles for mothers working at home and mothers working outside the home, then write a summary of the important responses on breastfeeding practices: one page on mothers at home and one on mothers working outside. If there are no apparent differences in practices, these groups no longer need to be separated for breastfeeding issues.

Other examples include summarizing:

- breastfeeding patterns by area, nutritional status, illness status, and child care patterns;
- transition to solid food—what food and when introduced—by area, nutritional status, breastfeeding history; and
- feeding frequency and style by age, area, child's state of health, and mother's work pattern.

A conclusion is written on the bottom of each summary tabulation sheet.

Composite scores, which draw on the results of observations and interviews, are useful to describe clusters of behavior that includes several practices. Scores for breastfeeding style, complementary feeding style, and food hygiene practices are common.

Composite scores are calculated by identifying a short list of key *practices* in each cluster, scoring the household on each practice, and totaling the score. This is a manual analysis technique (unlike formal cluster analysis), and binary scores for each practice (yes or no) are recommended for simplicity. The average composite scores for different segments can be compared.

Similar composite scores for *knowledge* also may be calculated and compared with composite scores for practices to determine whether there are large discrepancies in knowledge and behavior for different clusters.

Mothers in Pakistan had a high composite score on breastfeeding style if they

- *fed on demand,*
- *fed from both breasts,*
- *let the child decide when to stop,*
- *reported that they initiated breastfeeding soon after birth, and*
- *breastfed exclusively.*

In addition to analysis of practices, search for cultural patterns. Pay attention to perceptions or terms that are mentioned frequently and explain common practices. Many cultures have a set of beliefs related to the child's development of abilities to chew, swallow, and digest foods, and these beliefs affect the timing, type, and dilution of foods that are offered. In some places foods fall into various categories related such to characteristics as their perceived value, hot and cold qualities, or perceived lightness or heaviness.

While such belief systems are interesting, the point here is to discover whether these beliefs affect people's willingness to change feeding behaviors. As usual, focus on information that is relevant to developing child feeding recommendations or program activities. See Chapter 8 for more suggestions about analysis.

Results of the other individuals interviewed are also analyzed by area and type of participant (for example, compare all pharmacists' views or the opinions of all midwives). Assess the extent to which responses of influential people on common practices are consistent with what mothers say, and the extent to which these people influence mothers and others in the household and community.

Draft a Summary of the Findings

The report on the results of the in-depth interviews and observations focuses on the points needed to prepare for the trials of improved practices (TIPs). The summary also highlights implications for development of the program and its education and communication activities.

Write a clear summary of the findings immediately after completing the analysis to capture the details accurately. Circulate the draft to the field team for feedback on whether or not it accurately reflects their impressions from the participants. The draft report is incorporated into the final research report, and detailed editing and printing is not required at this point. A sample report is in Attachment 5.1 at the end of this chapter.

Points to include in the summary are:

- a brief summary of field procedures and lessons learned for future programs;
- a description of the communities studied, the participating families, and other respondents;
- a detailed account of the child feeding practices or attitudes that are the focus of the research, such as:
 - breastfeeding patterns (initiation, frequency, duration, supplementation),
 - patterns of age of introduction of foods, type of food, preparation, mode of feeding, quantity, and quality,
 - motivations, constraints, and beliefs of mothers and other participants that encourage or discourage their feeding nutritious foods to young children, and
 - ways in which a child's behavior influences child feeding decisions made by the mother;
- an analysis of the benefit or harm of the specific feeding practices:
 - examine mothers' actions objectively,
 - the aim is to learn how to close the gap between scientifically ideal behavior and actual practices that are hindering child growth and development, and
 - build on current practices to the extent possible;
- information on sources of information on maternal diet and child feeding; and
- conclusions and recommendations regarding the priorities and specific feeding recommendations that will form the basis of the trials of improved practices (see next section).

Develop Recommendations for Testing with TIPs

Detailed accounts of child feeding, including positive practices and problems, are completed before planning the household trials. The information gained from interviews, dietary recalls, and observations form the basis for determining the most logical and practical dietary improvements to try with mothers.

Return to the worksheets completed after the Phase 1 review. Use the results of the interviews and observations to complete column 4 of Worksheet 3.2. Develop recommendations that are likely to be acceptable in these communities. Look ahead to the Assessment and Counseling Guide for TIPs (Worksheet 6.1) in the next chapter. Begin to organize the results to complete this worksheet. Details on how to complete Worksheet 6.1 are found in Chapter 6.

Examples of insights from interviews and observations:

- *Mothers often are concerned about green leafy vegetables causing diarrhea or being hard to digest.*
- *In homes with twins in Swaziland, the feeding patterns varied for each twin because the mother felt that the "constitution" of each child was different, and, in fact, because the children behaved differently.*
- *Mothers tend to let children determine when, what, and how often they eat.*
- *In Indonesia children's illness patterns influenced mothers' work patterns, not the reverse. Mothers with sickly or undernourished children tended to stay home.*

RECIPE TRIALS

Recipe trials use group cooking sessions with mothers to develop and test recipes for appropriateness and acceptability for young children. The method involves bringing a small group of mothers and children together in a setting where special foods or food mixes are prepared, tasted, and discussed.

Recipe trials, interviews, and observations often yield similar information. In most cases it is not necessary to use all three methods. Choose the most appropriate method to gather the data needed to prepare for TIPs. If household observations are not possible, recipe trials are a reasonable alternative because they provide a better understanding of food preparation practices than do interviews or discussion groups. In recipe trials mothers do not just report practices, they actually demonstrate them.

The usefulness of the information collected during recipe trials is enhanced by probing **how** mothers prepare children's food, and **why** they do it in these ways. Focus group discussions (FGDs), described in Chapter 7, can be held before or after the cooking part of the recipe trial, or the trial can be held without a group discussion. In this case, simply take notes, ask probing questions, and record comments during the process of preparing and tasting the recipes.

In The Gambia FGDs were held during the first hour with a small group of mothers, who then participated in recipe trials during the second hour. During the cooking the facilitator clarified some of the issues that were discussed earlier. Although mothers said they were very willing to add groundnuts to the pap, when it came to actually preparing the fortified recipe, they diluted and sieved the groundnut paste, resulting in much less nutrient value than expected.

Recipe trials are different from TIPs because they are an exploratory research method used to gather new information about likely practice or recipe improvements, and they are often held only among mothers with children in a relatively narrow age range, as described later. The results of recipe trials are used to design the TIPs.

RECIPE TRIALS TASK BOX	
PREPARATION TASKS	
Design the research protocol.	<ul style="list-style-type: none"> ■ key questions: is the goal to test existing recipes or develop new recipes? ■ types of ingredients ■ rules or instructions for mothers
Define the sample and type of mothers to include.	<ul style="list-style-type: none"> ■ selection criteria: age groups, ethnicity, place of residence, etc. ■ number of sites, number of sessions ■ group size
Draft the question guides and recording forms.	<ul style="list-style-type: none"> ■ introduction and explanation of recipe trials ■ question guides with probes ■ structured observation and recording forms
Train team members and pretest methods and forms.	<ul style="list-style-type: none"> ■ one facilitator and 1–2 observers or note-takers per team ■ content: objectives and general approach, methodology, roleplays, practice sessions, and revision of methods, if needed
Assemble materials and equipment.	<ul style="list-style-type: none"> ■ utensils and supplies for cooking, serving, washing up ■ ingredients (and measuring apparatus, if needed) ■ stove and/or fuel ■ cassettes and tape recorder, if needed
Draft a field plan.	<ul style="list-style-type: none"> ■ assignment of responsibilities ■ scheduling of fieldwork
IMPLEMENTATION TASKS	
Recruit mothers.	<ul style="list-style-type: none"> ■ initial visit: identify mothers, obtain consent, and schedule the recipe trial ■ select venue for the session
Conduct the recipe trials.	<ul style="list-style-type: none"> ■ introduction and explanation ■ choose volunteers or split into groups ■ observe, question, probe, record ■ taste recipes and get feedback ■ debrief with field team and complete the field notes
ANALYSIS TASKS	
Summarize results of the trials.	<ul style="list-style-type: none"> ■ describe the recipes prepared ■ describe the response of mothers and children—which recipes are most popular? ■ describe constraints and motivations for using the recipes
Revise child feeding recommendations and calculate nutritional adequacy.	<ul style="list-style-type: none"> ■ identify best options ■ assess and describe nutrient content and value ■ revise the recommendations for the TIPs
Write a brief summary of the findings.	<ul style="list-style-type: none"> ■ summarize acceptance and rejection of recipes ■ list remaining or unresolved questions ■ discuss lessons learned and their program implications

Preparing for the Recipe Trials

Design the Research Protocol for the Recipe Trials

What are the important questions?

The design of the recipe trials depends on the type of information needed. When recipe trials are selected as part of the research plan, specify the gaps in existing information they are intended to fill.

If the main objective is to learn **how infant foods are currently prepared**, and structured home observations are not possible, assemble a group of six to 10 mothers and ask one or two to demonstrate their usual preparation methods. Ask the others to comment on how they do things differently and why.

To investigate **possible modifications of usual recipes**, ask mothers to discuss practices such as making the mixture thicker, adding one or more ingredients, feeding with a cup and spoon, or increasing serving size.

In The Gambia mothers were asked to demonstrate their usual method of preparing pap, enrich the pap using larger quantities of the usual ingredients (millet, sugar, milk), try feeding thicker pap, and develop recipes to enrich pap by adding new ingredients (groundnut, beans, vegetable oil).

Recipe trials also allow mothers to be part of the process of developing *new* recipes for young child feeding, using locally available ingredients but altering the usual preparation to make the food more nutritious. The most participatory and innovative way to conduct recipe trials is to provide an array of suggested ingredients, possibly grouped into nutritionally balanced groups and ask the mothers, individually or in small groups, to create and demonstrate recipes using these ingredients.

In Peru mothers were presented with groups of ingredients and asked to come up with one or more recipes using all of the foods. Some of these groups included new combinations, such as:

- *mixing cereal and legume flours,*
- *adding carrots to sweet dishes such as puddings, and*
- *enriching potato dishes with milk.*

Recipe trials are also used to **demonstrate and test existing recipes**. In some settings nutritious recipes or foods that are suitable for children already exist but traditionally are not fed to children. In some programs nutritious recipes or mixes are available already but have never been tested in the community. Recipe trials are used in these situations to demonstrate how to prepare the existing recipes, involve mothers in the preparation process, and obtain comments on the preparation process and the taste, consistency, texture, and other relevant characteristics of the final product.

A program in Nigeria planned to promote a recipe for enriching maize pap with sugar, palm oil, and a legume. Four legume preparations were identified as nutritionally appropriate:

- *cowpea flour,*
- *toasted cowpea flour,*
- *soybean flour, and*
- *chickpea flour.*

Cooking demonstrations were held with mothers and market women to test the acceptability of these options and choose the most popular combination.

In Peru, prepared recipes of different thicknesses and energy densities were presented to mothers. The recipe trials explored which recipes mothers considered most appropriate as a first complementary food for infants of five to six months of age.

What foods will be tested?

With assistance from a nutritionist, select the foods, recipes, or ingredients for testing. These decisions are based on food availability and current feeding practices. If possible, look for ways to **modify existing foods**, rather than developing completely new recipes. And, of course, the ingredients must be **locally available and affordable** to the types of families that participate. Avoid foods that are considered to be taboo or unsuitable for young children.

Remember that one of the purposes of recipe trials is to experiment with **ways of preparing available foods that are not usually offered to young children and finding ways to overcome resistances to their regular use**. Often, mothers require encouragement to feed or combine new ingredients. Once mothers taste the finished product or actually see how something is prepared, they are often more positive about the new recipe.

What ground rules guide the recipe trials?

To help mothers come up with useful recipes, some simple criteria or ground rules are established. These guidelines reflect the research questions. For example, if one goal is to find foods acceptable for ill children, explain this clearly to participants at the beginning.

Other possible ground rules include:

- use a minimum number of ingredients, always include specific ingredients, or use only particular combinations of ingredients;
- prepare a food that is appropriate for young children of a certain age or health status (mothers selected all have a child in the age group of interest); and
- make a recipe that is easy to prepare at home.

Ground rules used in recipe trials in Peru:

- *prepare a food with a **thick consistency** (because dilution of infant foods was a problem);*
- *prepare a recipe suitable for children from **six months** of age;*
- *use a **proportion** of wheat flour to legume flour of approximately 2:1; and*
- *use **additional ingredients** to improve taste and make the recipe more acceptable to children.*

Once the basic design decisions are made, write a draft protocol that specifies the key issues to investigate, ground rules to follow, and arrangements for conducting the trials and recording the results. In some cases recipes are developed prior to the trials. In these situations the protocol specifies how to prepare the recipes with the trial participants.

The protocol also specifies the feeding practices (such as quantity of serving or usual mode of feeding) to address and the ingredients that are provided for the trials. As with other qualitative research methods, it is better to focus on fewer issues so that detailed information on each issue is collected. If too many topics are covered during one trial session, key questions may go unanswered.

Define the Sample

Define the sample according to the key questions to be answered. Usually only a few recipe trials are required among a sample of mothers with children of a relatively narrow age range. For example, you may only need to test special recipes for children aged six to 12 months because younger breastfed infants do not require additional foods, and older children typically eat family foods.

In The Gambia only mothers of children age four to seven months were recruited, because this was the age group about which there were unanswered questions on the consistency of the porridge and the options for enriching it. For other age groups, the foods to be recommended and tested during TIPs had been identified through earlier research.

Sampling also depends on the number of population segments being studied. Only one, or at most two, recipe trials are required with any given population segment. Conduct the recipe trials in communities that are not scheduled to participate in TIPs.

The number of mothers participating in each recipe trial depends on the purpose of the activity. If all the mothers are expected to cook, limit group size to about five or six. Groups of six to 10 are possible if the purpose is to get feedback on the preparation, taste, and acceptability of the recipes. Purposive sampling is used to select participants according to characteristics described in the protocol. Because the trials are participatory, avoid assembling a group with one or more mothers who intimidate the others because of their social status in the community.

The sample design from one study in Peru:

- *10 recipe trials: three urban and seven rural, reflecting the main differences in the population,*
- *mothers of children aged six to 24 months, and*
- *eight to 10 mothers per group, split into three smaller groups for cooking.*

Draft the Question Guides and Recording Forms

The personnel who implement the recipe trials need guidelines on how to:

1. Introduce the trials and explain to the mothers what is expected during the session. This is essential for mothers to feel comfortable and participate actively and creatively.
2. Focus the discussion during the cooking session, clearly identifying the issues to probe. However, the guides should not be so extensive that the cooking session turns into a group interview. Areas for discussion during the recipe trial depend on the purpose of the recipe trials, but may include:
 - usual food preparation for children of certain ages and why it is done that way;
 - local availability and cost of the ingredients provided for use during the trials;
 - acceptability of the proposed combinations;
 - why certain combinations or preparations are not tried;
 - alternative ingredients (or other ways of processing similar ingredients) that have not been provided, but that are common or desirable;
 - perceived ease of preparation and time needed—do mothers feel they can prepare the recipe at home? why or why not?;
 - appearance, consistency, smell, and flavor of finished products;
 - child's response to the finished product, and mothers' perceptions of possible long-term effects of eating this food regularly; and
 - appropriate serving size and frequency of feeding children of this age.
3. Record the information that is demonstrated and discussed during group cooking activities. Several data-recording techniques are used to capture all relevant information:
 - structured observation forms are used to record what is prepared and how, including estimates or measurements of ingredients used, order and techniques for adding ingredients, and actual time required to prepare each recipe;

- tape recordings and extensive notes on mothers' comments, explanations, and reactions to each other's statements or actions during the cooking process; and
- structured observation forms and notes on feeding the final products to the children, including children's responses, style of feeding or encouragement used, and estimated amounts served and consumed by the children.

If several recipes are tested, develop a structured form to score responses on taste, appearance, ease of preparation, and the other qualities listed above. This is done so that the various options can be ranked according to their popularity. Sample forms are included in Appendix B.6.

The Importance of Unexpected Responses to the Recipe Trials

During recipe trials in Peru mothers were resistant to using oil and sugar in a recipe with flour, saying, "The only way that flour can be mixed with oil and sugar is in Sanco." This identified a traditional snack food for adults that the researchers were unaware of, but that mothers were able to make suitable for children. Because of this unexpected finding, the program went on to promote "Sanquito," a nutritious mixture for children that could be prepared and stored for several days. This combination was much more energy-dense than the usual soups and puddings given to young children and was acceptable to the mothers in the area.

Creed de Kanashiro et. al., 1991a

Train Team Members and Pretest the Guides and Forms

Ideally, recipe trials are conducted by the same field workers used in other phases, because many of the skills needed are similar. The number of teams required depends on the number of trials planned and the distances between sites. At least three people are required per recipe trial: one facilitator to lead the discussion, one note-taker to record the discussion (using notes and cassettes), and one observer to record events during cooking and tasting. There are also many tasks related to obtaining and displaying ingredients, cooking equipment and the utensils, and washing up afterwards. If several small groups of mothers are cooking at once, a note-taker is needed for each.

The particular skills for facilitating a recipe trial are similar to those needed for interviews and FGDs: establishing rapport, open-ended questioning, probing without leading, and remaining unbiased and neutral toward participants. Observation and note-taking skills are similar. Key training topics include:

- objectives of the recipe trials;
- background information on the reasons for developing enriched recipes or using particular combinations of ingredients;
- the methodology, based on the written protocol, questions guides, and forms;

- techniques for observing preparation and estimating amounts of ingredients;
- ways to encourage participation and creativity;
- open-ended techniques for probing key issues;
- techniques for observing and recording reactions to preparation and tasting;
- sampling and recruitment;
- logistics and planning for smooth implementation and clean-up; and
- summary and analysis techniques.

Training includes roleplays, followed by practice sessions with mothers to pretest the methods and forms and clarify the roles of the team members. Careful attention is given to planning logistics as described below.

Assemble Materials and Equipment

Preparations for the recipe trials involve assembling, transporting, and setting up an array of supplies and equipment to facilitate food preparation. The types of materials needed include:

- cooking pots and utensils, washing-up supplies;
- serving dishes and utensils (enough for all participants to taste the recipes);
- stoves and fuel (try to arrange cooking facilities typical of the participants' homes);
- all necessary ingredients, including basic components of the usual diet, nutritious ingredients to add to new or enriched recipes, common local seasonings, oil, and water;
- recording materials (notebooks, data forms, tape recorder, blank cassettes);
- a scale for weighing the ingredients and the finished products; and
- a watch to time the food preparation.

Draft a Field Plan

Based on the protocol, research plan, and number of staff available, draft a field plan that specifies the roles of each staff member, locations and schedules for recruitment and conducting the recipe trials, and expectations for initial analysis in the field.

As mentioned above, a team of at least three is needed to conduct a recipe trial session. Sessions that include creating, cooking, and tasting several recipes take two to three hours, and those that

present prepared recipes take one and a half to two hours. Taking into account the time needed for travel, setting up and cleaning up, and filling in the field notes, a team usually can only conduct one recipe trial per day, possibly two if little or no travel is involved.

Make arrangements in advance for supervision, transport, accommodation, and replenishment of cooking supplies needed during the recipe trials.

Implementing the Recipe Trials

Recruit Participants and Arrange a Location

Visit the selected community prior to the recipe trial to obtain permission to work there, recruit mothers of children in the selected age groups, and arrange a date for the recipe trial. There's a good chance that not everyone will be able to attend, so recruit a few extra mothers to be sure there are enough participants.

Arrange in advance for an appropriate location for the sessions. Sessions are best held in a home, a compound, or a community building such as a school to provide privacy and to keep group size limited; otherwise, cooking demonstrations tend to draw a crowd of onlookers. A proper location has safe and comfortable yet typical cooking facilities and adequate seating (mats, benches, or chairs) for those who are not cooking.

Conduct the Recipe Trials

Begin the recipe trials with introductions and clear instructions to put mothers at ease. Depending on group size and the number of facilities available, split into two or three small groups for simultaneous cooking (in a central location or in homes), or ask for a few volunteers to cook while the others watch, comment, and make suggestions. When volunteers are used, all mothers participate in the discussion, tasting the recipes, and serving them to their children. It is assumed that mothers attend with their children so that serving methods and children's responses are easily observed.

As mothers prepare each dish, the facilitator asks why a food is added, reasons for preparation methods, whether anyone else in the group does it the same way or differently, whether they add additional ingredients, and so on. Note-takers observe and record the amounts of ingredients added, procedures, and amount of time used. If utensils (cups and spoons) are provided in standard local sizes, the observed volumes are recorded during the trial, and the same amount is weighed later to calculate the nutrient composition. Weighing the ingredients during the trials is complicated and interferes with the creative process of developing recipes. However, it is very important to measure the total weight of the finished products *before* serving, so that nutrient density can be calculated (see Appendix C).

When the food is ready, each mother tastes and serves it to her child. The facilitator asks for opinions on taste and acceptability of the recipes, discusses serving and feeding methods, and asks whether the recipe can be prepared easily at home using the same ingredients and quantities.

After each session, the field team does a debriefing on the recipe trial. They listen to the cassettes (if sessions are recorded), add details to their field notes, discuss the findings and any difficulties that occurred, and plan necessary changes in the protocol. They also make sure there are enough supplies for the next session.

Debriefing is the transition step between conducting the recipe trials and analyzing the information obtained. During the debriefing the team determines if sufficient, consistent information is obtained and whether additional trials are necessary. If new issues arise that require elaboration, one or two extra trials are planned to gather more information.

Analysis of the Recipe Trials

Summarize the Results of the Trials

The team summarizes the results of each trial according to the key issues addressed. Key issues include:

- usual methods for preparing children's food;
- combinations tested and mothers' initial reactions;
- what was accepted or rejected and why;
- responses of children and mothers to the taste, texture, etc.;
- information on serving quantity, if relevant; and
- new ideas for recipes or food combinations.

For each recipe trial session, list important findings under headings that identify the recipe or main ingredient, or that refer to characteristics such as time for preparation, amounts of ingredients, and mothers' resistances and motivations. One way to summarize these main points is to prepare a matrix with foods or recipes on one axis and key characteristics on the other on one page.

For each session, summarize the results of mothers' and children's taste tests of each food or recipe, identifying which are acceptable and which are not. If possible, rank the recipes or ingredients according to various criteria, such as ease of preparation, children's willingness to eat, and nutritional value. In addition to these rankings, write a more detailed description on *why* certain foods are more or less acceptable, how and why ingredients are combined, resistances that were mentioned, and any suggested solutions. Note whether there were differences of opinion within the group of participants. Mark all notes clearly with the date, place, and type of mothers included in the session.

Once the recipe trials are complete, either for one population segment or the whole sample, summarize the findings *across sessions* using the same headings. Look for differences and similarities in findings from different trials. For example, did mothers' responses differ depending on the age of their youngest child, their ethnic background, or whether they live in rural or urban

areas? Highlight the majority opinions, but also note the range of opinions expressed by participants.

During analysis look for patterns of beliefs or traditional practices that cause resistance to new recipes, and identify possible ways to avoid these constraints. Most cultures have definite ideas about what ingredients can be mixed together.

The resistance of mothers in Niger to adding oil to porridge was overcome by suggesting that fried groundnut cakes (often consumed by adults with the porridge) be crumbled into the children's servings.

Mothers in Peru didn't like the idea of adding sugar or milk to potato dishes, but were willing to add carrots to sweet dishes and to combine cereal and legume flours, because in both cases they liked the taste.

Remember to interpret the findings with care, because conducting a recipe trial is not the same as testing specific recipes at home, where time, food, and resources are more limited. Because all the ingredients are provided in abundant quantity for the trials, mothers often use greater quantities of expensive ingredients, such as milk, than they are actually able to use when the recipe is prepared at home. The facilitator asks about this during the session, and answers to this question are summarized. This issue is explored more carefully, however, during the trials of improved practices (TIPs).

Revise Child Feeding Recommendations and Calculate Nutrient Composition

On the basis of the review of existing information and all your research conducted so far, select the **best options** for improving young child feeding practices. Information from the recipe trials allows choices to be made on the basis of mothers' and children's preferences, time for preparation, and availability of ingredients. With the assistance of a nutritionist, check the nutrient composition of the preferred recipes.¹

If the nutrient composition of the recipes developed is inadequate, the ingredient amounts can be modified. In an area where development of new recipes is an essential aspect of improving child feeding, it is often necessary to conduct two brief sets of recipe trials: one set to generate ideas, followed by calculating nutrient composition and adapting the recipes, and a second set of trials to test the acceptability of the modified recipes. As an alternative, the modified recipes can be tested during the TIPs. Always keep in mind that a traditional food or an enriched version of

¹ This is done by weighing the amounts of ingredients used during the trials (recorded in local measures), then using food composition tables to convert the weights to nutrient values. Total the values, then divide by the total weight of the prepared recipe to get the nutrient density of the final product. This is done for energy, protein, and any micronutrients that commonly are deficient in the diets of area children. If the same type of recipe is prepared several times, use the average amounts or calculate nutrient composition for each version of the recipe to identify the most nutritious way to prepare it.

Nutrient value per serving is calculated using the information collected on usual serving size. Use this information to help define the serving amounts and feeding frequencies to recommend for children to meet their nutritional needs. See Appendix C for more information on these calculations.

an existing recipe usually is easier for mothers to adopt than something completely new. References in this chapter to “development of recipes” should not be taken to mean that complicated new procedures or combinations are the desired outcome of recipe trials.

Insights from the Gambia where recipe trials were used for mothers to prepare and serve the usual pap and an enriched pap for children age four to seven months:

- *serving size was usually about 125 g;*
- *the current paps were considered "thick enough"; mothers added water to any pap they felt was "too thick";*
- *the ingredients most commonly added to pap were sugar and bean flour; and*
- *there was a tendency not to add oil or groundnuts because "they didn't know how."*

Look back to Worksheets 3.1 and 3.2 to see how recipe trial findings can be used to refine the recommendations or to identify new problems, solutions, motivations, and constraints. Also consider how the findings can be used to develop the Assessment and Counseling Guide for TIPs (Worksheet 6.1). Specify the recommendations to test in the TIPs, based on nutrient value and acceptability of the recipes and new ways to enrich children’s food.

Write a Summary of the Findings

This summary is brief, focusing on key findings relevant to TIPs and to program implementation. Prepare the summary in draft because the findings eventually will be integrated into the final research report.

Attachment 5.2 at the end of this chapter contains an example of a recipe trials report. Key points to include are:

- a listing of the recipes that are most acceptable and why;
- a listing of the ingredients or preparations that are rejected and why;
- key characteristics that are important in determining acceptance;
- revised feeding recommendations (described in the previous section);
- remaining questions to address during TIPs;
- lessons learned about conducting recipe trials;
- recommendations regarding future use of the method; and
- recommendations for program implementation.

For the last point, keep in mind that recipe trial sessions are not only a research method, but also an effective way of communicating recommendations to a group of mothers. As a means of presenting new combinations of ingredients, recipes are better understood than asking mothers to combine foods from different food groups (Creed de Kanashiro and Fukumoto, 1991b). Tasting new foods often motivates families to try them at home.

Examples of Insights from Recipe Trials

In Nigeria:

- *Mothers who were asked about the possibility of adding palm oil (an excellent source of energy and vitamin A) to children's pap objected to the idea because adding oil to pap was something they had never heard of and because palm oil has a very strong taste. However, when one tablespoon was added during a cooking demonstration and taste tested, mothers said they didn't notice any difference in taste and children appeared very willing to eat the enriched pap.*

There was also an unexpected finding—mothers said that the new recipe "looked like custard" (an expensive and desirable baby food) because of the effect that adding a small amount of red palm oil had on the color of the pap.

When the nutrition education program was implemented, it used cooking sessions as a way for health workers and mothers to teach the new recipe to other mothers. Cooking demonstrations were effective for communication and motivation, because the positive responses to the taste and appearance of the new dish helped to overcome any resistance to the idea of adding these new ingredients to pap.

In Peru:

- *Purees (savory dishes) took less time to prepare than puddings (sweet dishes), although it had appeared in interviews that puddings were more acceptable.*
- *Mothers who resisted adding oil or fat were pleasantly surprised when they tasted foods prepared with these ingredients during the trials.*
- *Mothers tended to add too much broth to purees made from ingredients taken from the family pot, so recommendations had to specify the amount of liquid to be added.*
- *Ideas were found on ways to introduce foods such as fish, oil, and beans, which were not usually given to young children.*

Attachment 5.1

EXCERPT FROM A REPORT ON HOUSEHOLD INTERVIEWS AND OBSERVATIONS

(From: Project for Promotion of Improved Young Child Feeding. *Household Observations, Interviews and Trials*. Swaziland National Nutrition Council, 1988.)

Introduction of Foods and Liquids Other than Breastmilk

- The introduction of other milks and water begins virtually at birth. In the first month of life three children from the entire sample were not breastfed. Of those breastfed, only about a quarter were exclusively breastfed. The majority also received either water (one third); formula (one third) or a thin corn gruel, often with water not milk.
- By the second month of life the same percentage of children were breastfed and the same portion were supplemented but the picture becomes more complex: use of formula remains the same, but powdered milk and cereal use increases. A quarter of the sample received a thin gruel (nestum, indengane or inembe) plain or with milk.
- From the third month of life virtually all children are receiving one or more supplements. (Breastfeeding continues at the same rate.)

In the third month, formula use remains high, use of powdered milks increases and the use of nestum or maize porridges increases to half the sample.

- Almost universal supplementation continued from the fourth to the sixth months. Both formula and powdered milk decreased while use of indengane increased. By the fifth and sixth month almost all children received soft porridge.
 - Well nourished children were more likely to receive a nutrient dense indengane:

	Well <u>nourished</u>	Under- <u>nourished</u>
milk and sugar added	50%	25%
milk only added	33%	50%
sugar only added	17%	25%

- Incwancwa (a soft, sour porridge) was not given to children before they were about a year old even though almost half of the families ate incwancwa. Incwancwa was not served to children because mothers believe it causes heartburn and makes children become thin.
- By three months of age a few children were already receiving liphlishi (adult maize porridge) and by six months, half the young children were receiving it. However, less than a quarter were receiving other relishes with the liphlishi: it was usually mixed with gravy or emasi. Mothers said they give liphlishi to a child when: the throat is wide enough to accept thick food; the child signals its desire for liphlishi; or, the stomach can cope with thick food.
- By ten months, all children were receiving liphlishi with the exception of three, and most were receiving some relish. However, food variety was low, children over ten months received an average of four different foods in a day (not including sugar). The foods were usually maize, milk, green vegetable and a legume. Sometimes oil was used. One child received meat.

- Foods commonly mentioned as favorite foods of young children included oranges, bananas, thick liphalishi and gravy and emasi (sour milk).
- Interestingly, a variety of foods are withheld from young children. While the specific foods mentioned were often dissimilar, the reasons were often the same: child will become greedy, stomach-ache, heartburn, constipation.

Many more foods were listed as being withheld by mothers with undernourished than mothers with well nourished children.

Therefore

The major problem with the timing of introduction of foods is the very early supplementation with formula and powdered milks and by month three with thin porridges.

The use of soft porridge between the fourth and sixth month is commendable. The use of incwancwa could be encouraged since the sourness may decrease bacterial growth in the porridge when fed over the course of a day. By six months liphalishi should be introduced to increase the energy density of the child's food.

The transition to adult food by ten months is desirable especially if it includes all foods in the family pot (the vegetables, legumes and oil).

Dilution of Food and Mode of Feeding

- The first supplements to breastmilk -were liquids – other milks and formulas. Thus bottle use is high: half of the sample was feeding their child with a bottle during the first months of life. The other half was either not using anything because they were not supplementing or they were using a feeding cup or ordinary cup. Generally, all feeding utensils seen in the home were not clean.
- The thin porridges introduced between three and six months were often so thin that they could be fed by bottle although the majority of mothers seem to be feeding the porridges either by cup, cup and spoon, or cup and hand. There follows an analysis of the percent solids contained in the porridges²:

Mean solid content for indengane	12.9% (SD: 1.5%)
Liphalishi solid content	27.2% (only one sample)
Phutu solid content	34% (only one sample)

² A sample of the child's porridge was taken on the day they observations took place. The sample was stored in a plastic bag and frozen for a maximum period of one week. The porridge samples were thawed in warm water and duplicate 2g-test samples were dried for 16 hours and 24 hours at 27 degrees Centigrade.

Ten samples were taken in all, but one sample had to be discarded because the duplicate tests differed greatly.

- During analysis of the dietary recalls a judgement was made about the consistency of the foods the child received: i.e. was the diet only liquid, extremely dilute (thin), more dilute than recommended (medium), or suitable for the child's age.

All young children's diets (4-6 months) were either liquid or thin.

The 7-11 month-olds ranged from liquid to medium. No one had a diet considered to be of appropriate consistency and the difference between well and undernourished children was negligible.

For the children in their second year of life, food consistency was seldom suitable. Differences between well and undernourished children were apparent: about three-quarters of the undernourished children had a diet classified as liquid or thin (many of these children were sick) while virtually all of the well nourished children's diets were either medium or suitable. It is also notable that mothers of these undernourished children (12 months and older) reported that they were more likely to offer the breast than food if the child was crying and fussy while the mothers of the well nourished children were more inclined to offer food.

Therefore

The dilution factor has a large role in undermining the nutrient density of the Swazi child's diet. Dilution begins early with milk feeds in bottles and continues with dilute porridges and diets that rely on liquid more than solid foods. Every attempt must be made to encourage less dilution and more nutrient dense foods that will boost intake and make bottles inappropriate feeding utensils. The use of soft porridges as "baby foods" should be discouraged. The idea of feeding the child from the family pot should be promoted from early in the child's life.

Frequency of Feeding

- Infants aged 0-3 months were usually breastfed on demand, which resulted in a feeding frequency of ten to twenty feeds a day. Usually, 2-3 bottle feeds were given in addition to the breast. Where bottle feeding was practiced breastfeeding frequency was reduced.
- A typical feeding pattern for children aged 4-6 months was to be breastfed between three and ten times per day and to be supplemented between two and six times per day with cereals and/or milk. Mothers tended to report feeding fewer meals than they were actually observed to give. This may be because the feedings were often small. Similar to the pattern with infants, breastfeeding frequency was reduced the more often supplements were given.
- Children of 7-11 months were observed to be fed 4-5 times per day. However, only two of these feedings were meals (defined as a substantial amount of more than one food).

Mothers said they considered it proper to feed a child of this age 3-5 times per day in addition to a few breastfeeds.

- Mothers of children over 12 months said 4-6 feeds are appropriate for a child of this age. Again, in this age group, there was a tendency to give snacks and meals. Total frequency of

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feeding did not vary between well and undernourished children. However, undernourished children were usually found to be fed meals less frequently than well nourished children.

None of the mothers of undernourished children gave an accurate estimate of their actual feeding frequency.

- For all age groups, mothers said that the constraints to increasing feeding frequency were cost, time, scarcity of food, wastage of food, or fear of the child becoming obese.

Therefore

The frequency of feeding appears to be high, even though cooking is done only once or twice per day. However, the implications for bacterial contamination merit consideration because food is cooked only once or twice and fed repeatedly throughout the day. Because of the high feeding frequency the amount given per feed may be more important than frequency (see next discussion).

Mothers appear to have an adequate perception of the need to feed children frequently but they are unaware of how often they are feeding their child. An important recurring theme in the educational programme could be the need for mothers to be aware or conscious of child feeding.

Quantities of Food

The following points were noted by the ethnographer during the observations:

- the amount of food the mother said she considers appropriate for her child;
- the amount of food that the mother reported as being the child's normal intake;
- the amount of food which the ethnographer estimated the child to have eaten.
- Overall, it appears that all the children in the sample ate insufficient quantities of food. Mothers were unaware of the quantities that are needed and the quantities consumed by their child. Many mothers of undernourished children said they do not know how much their child should eat.
 - The mothers of children under six months said that they were unable to estimate how much their child eats. For children over six months, mothers tended to over-estimate the amount their child eats.
 - For children over a year of age there was a striking difference in the quantity of food given to the well and the undernourished children. Well nourished children got 2–3 meals and 1–2 snacks per day. Undernourished children got 1–2 meals and about two snacks per day.

- A mother judges her child to have eaten enough when he refuses to take more; crawls away; or spits out the food. Only one mother claimed to gauge her child's food intake according to quantity served.
- Generally young children have their own food dish and might only share with one other child, but as they get older there is a tendency for them to eat from the common plate.
- Mothers stated that they were afraid to give their child more food because of wastage and a few mothers said they would not give more because the child might become obese.

Therefore

Mothers need precise messages on the amounts of food appropriate for the child's age and encouragement to offer, at each sitting, the amount she thinks the child should eat. The fear of food wastage and obesity should be addressed in a straightforward fashion.

Feeding Style

Through structured observations of the feeding situation the ethnographers were able to rate mothers on "feeding style". That is, whether the mother:

- paid attention to her child while he was eating;
- measured the quantity of food the child should eat;
- encouraged the child to continue eating if he lost interest before the food was eaten; and
- was aware of hygiene.
- Generally feeding style scores were low for all children:
 - Although a mother often sits with her young child and feeds him, older ones are allowed to take the dish and feed themselves.
 - Mothers do not measure food for their children. The food for the day is placed in a container and offered frequently.
 - Many mothers are worried about their children having poor appetites and encourage their children to eat. However, at least one third of mothers with undernourished children did nothing to encourage them to eat more.
 - Hygiene was generally ignored.

Therefore

Mothers need to be made aware of their responsibility in child feeding – at least to monitor it. Perhaps the idea that the mother is teaching the child to eat would be an appropriate avenue:

children don't always know what is best for them. The mother should measure food, encourage and guide the young child.

Attachment 5.2

EXCERPTS FROM A REPORT ON RECIPE TRIALS

(From: Samba, Ndure K. *Improving infant and young child feeding practices in the Gambia*. PRITECH/USAID, 1992.)

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RESULTS OF THE FOCUS GROUP DISCUSSIONS & RECIPE DEMONSTRATIONS

4.1 WEANING FOOD RECIPE DEVELOPMENT

In the focus group discussions, a small group of mothers of children 4 to 7 months of age were asked to develop recipes to enrich pap by adding energy- and protein-rich local foods such as groundnut, beans (cowpea), and/or vegetable oil. This was done in two sessions.

In the first session, mothers were asked to prepare pap the way they would do in their homes. Below is a table of the ingredients used by four groups of women from Sintet and Sankuley Kunda.

Table 3. Ingredients used in session 1 of recipe trials

INGREDIENT	AMOUNT USED (g)			
	SINETET		SANKULEY KUNDA	
	GROUP 1	GROUP 2	GROUP 1	GROUP 2
millet (fermented)	80	100	100	500
sugar	15	30	30	60
salt	a pinch	a pinch	a pinch	a pinch
milk				60 ml
water	375 ml	500 ml	675 ml	500 ml
size of serving	125	125	125	125

All four groups of mothers prepared *ogi* from fermented millet flour, sugar and salt. Mothers were asked to show the amount of pap they would feed to a four to six month old child, the size of these servings was approximately 125 g.

One group from Sankuley Kunda added some fresh cow's milk to their *ogi*. According to mothers in this group, milk was added to improve the flavor of the *ogi*.

During this session, mothers always added more water when they felt that the *ogi* was too thick but the consistency of the paps at the end of preparation was thick enough to be fed to a four to six month old child.

In the second session, mothers were asked to prepare two additional recipes. For the first one, mothers were asked to plan and prepare a thicker or richer pap, depending on the type of pap that is usually prepared, i.e. if the usual pap is thick, mothers were asked to try adding ingredients; if the usual pap is watery, mothers were asked to try making a thick pap. The recipes were eased on their choice of the potential ingredients provided. These were millet, fresh milk, sugar, salt, groundnut paste, pounded groundnut, bean (cowpea) flour, and vegetable oil.

Table 4. Ingredients used in session 2 of recipe trials

INGREDIENTS	AMOUNTS USED (g)			
	SINETET		SANKULEY KUNDA	
	GROUP 1	GROUP 2	GROUP 3	GROUP 4
RECIPE 2				
millet flour	60	160	500	125
sugar	30	30	125	90
salt	pinch	pinch	2 pinches	
milk		50 ml		
groundnut paste			45	
groundnut flour		30		
bean flour	80		80	80
vegetable oil				30 ml
water	375 ml	1500 ml	1800 ml	1000 ml
RECIPE 3				
millet flour	80			
sugar	20			
salt	20			
milk	pinch			
groundnut paste	125			
groundnut powder				
bean flour	30			
vegetable oil	15			
water	250			

CHAPTER 6: TRIALS OF IMPROVED PRACTICES (TIPs)

TIPs: A Method for Testing Program Recommendations

Developing strategies to change behavior requires knowledge of nutrition problems affecting children and information about improved practices that are acceptable and feasible for families. All practices should be tested, ideally in people's homes, before they are recommended. This is done through trials of improved practices (TIPs), the core method of this research.

The advantage of TIPs, particularly for refining feeding recommendations, is that mothers or primary caregivers are given a *choice* of recommendations to act on, questioned about their reasons for that choice, and then followed up to see what actually happened. Did they try the new practice, and if so, how did they feel about it? Did they modify it? Or if they didn't try it, why not? In this way the proposed recommendations are tested in a real environment, and information is gathered on their acceptability. This information helps program planners to set priorities among the many seemingly important feeding practices and messages. Through TIPs, researchers and/or nutrition counselors discover:

- The relative ease or difficulty of communicating various recommended practices;
- Modifications that make the recommendations more acceptable;
- Unanticipated resistance points that limit behavior change;
- Ways in which recommendations are undermined by practices such as dilution, replacement, or children's resistance to new foods; and
- The approximate proportion of families who are and are not able to modify feeding practices and improve nutrition without additional resources.

TIPs test the feasibility of asking people to carry out the advocated **behaviors**. (This is different from pretesting educational **materials** and **messages**, which occurs much later.)

Objectives

1. To test mothers' responses to recommendations for improving infant and child feeding and determine which are most feasible and acceptable.
2. To investigate the constraints on mothers' willingness to change feeding patterns and their motivations for trying and sustaining new practices.

TIPs involve the following steps, which are described in the Task Box.

1. Training field personnel
2. Recruiting participants
3. An initial visit to gather background information, conduct dietary assessment
4. Debriefing to analyze dietary information, prepare for counseling
5. Counseling visit to present options, get reactions, negotiate trial practices
6. Debriefing to discuss reactions to recommendations and options selected
7. Follow-up visits to learn about the reactions to the new practices
8. Analysis, summary, and application of results.

In some settings, the initial visit and the counseling visit can be combined.

TASK BOX FOR TRIALS OF IMPROVED PRACTICES (TIPS)	
Preparation Tasks	
Draft a counseling guide on behavior change recommendations.	<ul style="list-style-type: none"> ■ list common feeding problems, by age ■ for each problem (and age) list several realistic recommendations for improving dietary intake ■ develop the counseling guide by completing Worksheet 6.1
Design the research protocol.	<ul style="list-style-type: none"> ■ determine number and procedures for each household visit
Develop question guides and recording forms.	<ul style="list-style-type: none"> ■ specify topics that require additional questioning ■ draft dietary assessment forms ■ draft recording forms ■ experienced nutritionist drafts dietary analysis forms
Revise the research plan.	<ul style="list-style-type: none"> ■ Worksheet 4.3 ■ recruit participants
Draft a field plan.	<ul style="list-style-type: none"> ■ schedule fieldwork ■ assign responsibilities
Train the field team and pretest the guides and forms.	<ul style="list-style-type: none"> ■ objectives of TIPS ■ TIPS methods and forms ■ role plays and pretesting ■ initial analysis in the field
Implementation Tasks	
Recruit households.	<ul style="list-style-type: none"> ■ identify households for TIPS ■ obtain consent
Conduct the <i>initial visits</i> .	<ul style="list-style-type: none"> ■ conduct interviews, observations, and assessment in selected households ■ schedule counseling visit
<p>The steps in the shaded boxes can be skipped if the field team has just completed the in-depth interviews and observations with families who will participate in TIPS.</p>	

Analyze initial data and plan specific recommendations.	<ul style="list-style-type: none"> ■ review results of initial visit ■ identify feeding problems and plan recommendations to suggest in each household ■ revise counseling guide as needed
Conduct the <i>counseling visits</i> .	<ul style="list-style-type: none"> ■ discuss specific recommendations and negotiate with the mother to try a new practice ■ schedule follow-up visit
Summarize the response to counseling.	<ul style="list-style-type: none"> ■ preliminary analysis: what recommendations are mothers willing/not willing to try and why? ■ document motivations and constraints
Conduct the <i>follow-up visits</i> .	<ul style="list-style-type: none"> ■ repeat dietary assessment ■ find out how mothers followed the suggested practices, why/why not, how they modified the advice and why, and their positive and negative reactions. ■ review and summarize information
Analysis Tasks	
Tabulate results of the trials.	<ul style="list-style-type: none"> ■ each recommendation: number agreed to, number tried, number will continue/were successful ■ note key constraints and motivations
Revise child feeding recommendations.	<ul style="list-style-type: none"> ■ revise guide to include most appropriate/successful recommendations, amended according to mothers' suggestions ■ focus on most common problems
Write a report on the findings.	<ul style="list-style-type: none"> ■ summary ■ recommendations for programming ■ remaining questions/recommendations for further research and the decision on need for checking research.

Preparing for the Counseling and Trials of Improved Practices (TIPs)

Draft an Assessment and Counseling Guide on Feeding Practices

At this stage, all the information collected to date is used to draft an Assessment and Counseling Guide on Feeding Practices. This guide is used by interviewers during TIPs. Development of this guide is a critical step because it translates information gathered during the research into a list of likely practice improvements. It is important to allow adequate time for development and discussion of all possible recommendations.

Begin by gathering the following information:

- the review of existing information, including the experiences of previous nutrition programs in promoting certain feeding practices or foods;

- completed Worksheets 3.1 and 3.2;
- the draft reports and worksheets from all the exploratory research conducted (in-depth interviews, observations, and/or recipe trials); and
- additional information about local food preparation methods, food availability, and nutrient values.

Sort the information by appropriate age groups. Use Worksheet 6.1 to list briefly the **ideal feeding practices** for the first age group. Refer to local norms for infant and young child feeding (such as those promoted by the ministry of health), *Facts for Life* (UNICEF, 1993), and other reference materials for additional information on ideal practices, if desired.

Use the data collected to list all of the **feeding problems** identified for that age group. If many problems are identified, choose the most important ones to focus on. Focus on practices that are:

- common in the population;
- likely to have a significant negative effect on nutrition; and
- could be improved using existing resources.

Some feeding problems require changes that are outside the scope of the program. Others result from practices that are deeply rooted in culture and unlikely to change. Consider all behaviors that appear amenable to improvement by changes in the use of available family resources.

For each problem selected, suggest **realistic recommendations** that help mothers take small, practical steps that move them toward the ideal behavior. These recommendations should be as specific as possible. Try to identify:

- positive feeding behaviors that are practiced in some households and could be recommended in others;
- acceptable modifications of current feeding practices (such as feeding one extra snack each day or modifying the consistency or contents of solid food recipes); and
- locally available foods that can be fed to children to improve their diets.

Leave space on the guide for additional recommendations identified during TIPs implementation.

All practical options that lead to the desired nutritional benefit are explored during TIPs. In many cases, there is more than one option for improving feeding practices. For example, to increase energy consumption, children can eat more frequently, consume larger portions, or eat foods that are enriched by adding ingredients or reducing water content. During planning, a list of possible recommendations to achieve each practice improvement is drafted. The list is shortened and refined during the testing process.

Repeat the process outlined above for each age group. Recommendations for special categories of children, such as children who are not breastfed, or who are experiencing illness and poor appetite are also developed.

After the list of recommendations is complete, review it with the team's nutrition experts to be sure that, if followed, the recommendations will have a positive impact on children's diets and the problems being addressed. Eliminate all recommendations that are unlikely to have the desired nutritional impact.

Number the remaining recommendations for each age group to help with record keeping, as shown in the Assessments and Counseling Guide for TIPs (Worksheet 6.1). A completed assessment and counseling guide for Nigeria is found in Attachment 6.1 at the end of this chapter.

WORKSHEET 6.1: Completed Assessment and Counseling Guide for TIPs

Age Group 1: 0 to less than 6 months (specify)

Ideal Feeding Practices: exclusive breastfeeding, frequently and on demand, day and night

Problem #1: Child is not exclusively breastfed

Recommendations:*	Potential Motivations:
<ol style="list-style-type: none"> 1. Stop giving feeds of water. 2. Stop giving feeds of milk, porridge or other foods. 3. Increase frequency of breastfeeding. <ol style="list-style-type: none"> a. Feed more at night. b. Feed more day and night. 4. Reduce frequency of other fluids. 5. Reduce frequency of other feeds. 	<ul style="list-style-type: none"> - Breast milk contains lots of water and won't be contaminated like unboiled water. - Breast milk alone contains all needed nutrients for babies this age and avoids the cost, time, trouble, and possible introduction of germs that supplements entail. - The more you breastfed, the more milk you will produce, so you'll always have enough to satisfy the baby; the more you breastfeed, the better the baby will grow; the more you breastfeed, the less likely you will become pregnant too soon. The more you do this, the more you avoid the cost, time, trouble, and possible introduction of germs that other foods bring.

* These are options. The mother is asked to try one, two, or three, not all of them. For example, the mother may agree to stop giving milk, but only to reduce water and to feed more at night. (#2, 3a, and 4)

Problem #2: _____

Recommendations:	Potential Motivations:

Problem #3: _____

Recommendations:	Potential Motivations:

Age Group 2: 6-8 months (specify)

Ideal Feeding Practices: Introduction of soft, nutritious food;
continued breastfeeding

Problem # 1: Non-nutritious porridge is given; not energy-dense because over diluted

Recommendations:

1. Make some porridge with less water.
2. Make a "special porridge"—recipe with less water and a teaspoon of oil and add fired, mashed groundnuts.
3. Feed the special porridge at least twice a day.

Potential Motivations:

1. Child less hungry
 - more content, less crying
 - will let mother work
2. Child is able to swallow porridge
3. Child will like the taste

Problem #2:

Recommendations:

Potential Motivations:

Problem #3:

Recommendations:

Potential Motivations:

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Develop the Research Protocol

Prepare a research protocol to guide the field team during implementation. Specify each step, from recruitment to analysis, and attach the research plan, questions, guides, and forms, as discussed below.

There are two alternative TIPs protocols: one requires three household visits (initial, counseling, and follow-up), the other requires two (counseling and follow-up only; see Box 6.1). The number of visits depends on the scope of the research, the availability of information needed to develop a detailed Assessment and Counseling Guide, and the level of training and experience of the interviewers.

The two-visit protocol combines the initial and counseling visits into one. If there is already considerable information on child feeding practices, and interviewers are able to do a dietary assessment and analysis of feeding problems on the spot, then the TIPs can be done in two visits. Otherwise, a three-visit protocol is recommended.

BOX 6.1: CONTENT BY DAY FOR A THREE-VISIT TRIAL

Initial Visit (Day 1)	Counseling Visit (Day 2)	Follow-up Visit (Day 6–10)
<ul style="list-style-type: none"> ■ Background information ■ Feeding practices ■ 24-hour recall ■ Food frequency (of other regularly consumed foods) 	<ul style="list-style-type: none"> ■ Feedback on practices ■ Recommendations and initial response ■ Negotiation and motivation ■ Discussion with interviewers, if needed ■ Agreement on specific practices to try 	<ul style="list-style-type: none"> ■ Changes since last visit ■ 24-hour recall ■ Outcome and response to trial ■ Modifications ■ Adoption of practice

Advantages of the three-visit protocol include:

- The interviewers have time to assess dietary and qualitative information thoroughly for each child, confer with a field supervisor and other team members to discuss appropriate recommendations, and return to the household well-prepared for the counseling session.
- When less information on child feeding is available at the start, the Assessment and Counseling Guide may not be complete for all situations. With the three-visit design, the guide is refined during the process of conducting TIPs, adding problems and solutions as they come up.

This chapter describes the three-visit design. If the two-visit protocol is selected, the instructions and forms for Day 1 and Day 2 are combined into a single visit, and there is less emphasis on interviewing about current feeding practices (because this information is already available).

Other variations are also possible.

In Senegal the initial visit of TIPs included a detailed in-depth interview and full-day observation, similar to what was described in Chapter 5.

In The Gambia an extra follow-up visit was conducted, so that mothers who had not successfully adopted a new behavior had a chance to choose another recommendation.

If two *follow-up visits* are desired, revise the forms for Day 2 and Day 3 accordingly.

Develop Question Guides and Recording Forms

TIPs involve several activities: interviewing, observation, dietary assessment, counseling, motivation, and assessing response to the trial. A detailed guide is essential, because the interviewer needs to ask different types of questions and needs to have a different style of interacting with the mother at different times. Sometimes the neutral style of a researcher is required, while at other times the motivating style of a nutrition counselor is preferred.

Question guides outline the steps and key issues in conducting the initial, counseling, and follow-up visits. They may be integrated with, or separate from, the data forms used to record the mothers' responses. The guides and recording forms include the issues listed below.

The Initial Visit:

- Open-ended questions and probes on child feeding practices and mother's beliefs. (Refer to topics listed in Chapter 2 and the gaps identified in the review. Also see Chapter 5 for details on preparing open-ended question guides.)
- Dietary assessment methods and recording forms. (Details on the 24-hour recall and food frequency assessment are provided later in this chapter.)
- Identification of specific feeding problems (interpretation of the dietary assessment).

The Counseling Visit:

- Feedback on practices and suggested recommendations (from the Assessment and Counseling Guide).
- Appeals and motivations that are believed to be most effective in stimulating compliance.
- Information to help overcome attitudinal barriers to behavior change.
- Information to help overcome practical barriers.

- Guidelines for reaching an agreement with the mother to try the new practice for a certain period of time (usually about one week) and to be re-interviewed about her experience. The mother should be asked if and how often she is already carrying out the practice.
- Space to record the recommendations discussed with the mother and her positive and negative reactions to each. Ask the mother about her overall reaction to the suggested practice, her desire to follow the advice and why, and her perceived ability to follow the advice and why. Ask her if she expects to make any changes in the advice, and why. Find out if anyone else needs to be consulted for the behavior change to be tried.
- Space to record the recommendations that the mother agrees to implement.
- Guidelines for a cooking demonstration if a new food is involved.

The Follow-up Visit:

- Change since the last visit.
- Questions and a format to record the mother's comments after she has tried the recommendation.
- Space to record any modifications of the original recommendation.
- Questions and space to record the reactions of other family members who may have commented on the new practice.
- Assessment of whether the mother plans to continue the new practice.

Samples forms for TIPs that can be adapted are included in Appendix B.7. Although these forms were used for a study in Nigeria, they are similar to ones used for TIPs in various countries. Keep the following points in mind while adapting the forms:

- Be sure to include space for recording background information on the families, and a unique identification number for each household.
- Ask sensitive questions later in the interview, after rapport is established. In Nigeria, researchers decided not to ask about mother's education at the beginning the interview, in case it made mothers uncomfortable.
- Include questions only on those beliefs and practices that are relevant to your program and are not well understood. Also, provide guidelines on whether the interviewer should ask these questions in all participating households or only in those with a child in a certain age group.
- Do not cover the same issue repeatedly. Information on many practices and beliefs will be gathered during the dietary assessment or the response to the trials, so additional questions on those issues are not needed.

- Make the guide flexible. Interviewers should not read each question word by word. The objective is to remind the interviewer of the key issues, while allowing for a natural conversation with each mother.
- It is important to provide guidelines for analyzing the diet and planning the counseling for each household. These are included with the forms for the initial visit (see sections 14 and 15 in the example in Appendix B.7).
- Allow plenty of room to record detailed responses. Field teams in several countries pasted sections of the forms into lined exercise books, leaving extra pages where needed. Using a book is a helpful way to keep together the forms from all visits to a particular household.

Revise the Sample and Plan Recruitment

As discussed in Chapter 4, trials are conducted in the minimum number of sites needed to represent the diversity of child feeding practices in the region. Children are selected purposively from the age groups and other categories considered most relevant to the program, within the chosen population segments. At least two children of each age group are selected in each location, and possibly more children from the age groups for which feeding problems and transitions are common. The table below shows a suggested sampling scheme for the minimal sample from three sites.

Example of a Sample for TIPs				
Age Group	Site 1	Site 2	Site 3	Total
0–5 Months	2	2	2	6
6–11 Months	4	4	4	12
12–17 Months	2	2	2	6
18–23 Months	2	2	2	6
Total	10	10	10	30

A few additional children may be included to replace the drop-outs that are likely to occur. In a qualitative study, the sample needs only to be large enough to include the range of usual responses. If in the process of collecting the data, feeding practices for an age group or a site are found to vary more than expected, it may be necessary to include a larger sample for that group.

Usually it is important to select low-income households where feeding problems are most likely to occur. However, the very poorest homes or those in areas suffering from severe food shortages are not appropriate because these families will be **unable** to make any improvements in child feeding without external assistance or provision of food. TIPs are useful for identifying which families **can** do more to help themselves. When selecting the sites, think about the expected program participants. Decide how children will be selected for TIPs.

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- Include only one child from any one family compound because it is important to get a range of different feeding practices and responses to TIPs.
- Community leaders or health workers can help identify households with appropriate-age children.
- If there is a list of households with children in the selected age range, households can be selected randomly.
- The interviewers can select the sample, or a separate team of recruiters can select households in advance. Advance recruitment saves time, especially if undernourished or sick children are specified for TIPs.

Draft a Field Plan

Develop a field plan that specifies responsibilities, and when and where information is to be collected. The plan includes an implementation schedule. As with other methods, when planning the implementation schedule, remember to allow for more recruitment time if children with special characteristics (e.g., malnourished, anorexic, or in very narrow age ranges) are desired.

The length of time needed for household trials depends on the number of sites and workers, length of the question guides, availability of transport, and distances that must be covered. It is important to plan the schedule in advance because community leaders need to be informed, especially if they are assisting in the identification of households. To estimate the amount of time required, assume that interviewers can conduct two or three initial visits each day (if houses are not dispersed too widely).

Because this is qualitative research, data collection is scheduled to allow days in between for review and discussion, at least at the beginning of the work. Expecting to discuss findings at the end of a tiring day of fieldwork is not realistic. However, the time between visits is shortened as researchers' questioning and note-taking skills develop and their familiarity with the problems and possible solutions increases. The steps in conducting visits and summarizing the information are discussed in the implementation section.

The other difficult aspect of scheduling is the need for follow-up visits about five to six days after the counseling visit. Plans are made in advance so that field workers can tell mothers when they will return. If the sites are widely dispersed, it is better to use the time in between counseling and follow-up visits for analysis or for TIPs in additional households in the same site, rather than proceeding to another site and expecting to return later for follow-up.

Because follow-up visits take less time than initial visits, and there is no need to look for children of certain ages, field workers are able to complete about twice as many households per day. However, it is important to consider that not all mothers will be at home for the scheduled follow-up, so an extra day should be allocated for initial analysis and repeat attempts at follow-up, as needed. A sample TIPs schedule and field plan from Nigeria is included in Attachment 6.2 at the end of this chapter.

Train the Field Team for TIPs and Pretest the Guides and Forms

TIPs training requires about three days in the classroom (learning the techniques and practicing role plays), one day of field-testing, and a final day to discuss the field experience and make necessary modifications to the protocol. This is in addition to the general training on child feeding and qualitative research discussed in Chapter 4. Training is the ideal time for pretesting and adapting the forms and discussion guides for the interviews. Allow about one-half day for pretesting each guide. Trainees also assist with translation of the forms and discussion guides, if needed.

Topics covered during training include:

- Purpose of the training and the research.
- A review and discussion of the findings from the review of existing information (Chapter 3) and the exploratory research (Chapter 5), with an emphasis on common feeding problems and solutions.
- TIPs methodology:
 - data forms and discussion guides;
 - open-ended questions and probing;
 - observation;
 - 24-hour recall methods and food frequency methods (role play);
 - diet analysis and selection of appropriate recommendations (use of counseling guide);
 - follow-up visits; and
 - debriefing and analysis.
- Ideal versus actual practices for each age group and the need to identify feasible improvements that **move toward the ideal** (rather than to suggest that everyone adopt ideal but unfeasible feeding practices).
- Why and how to obtain mothers' input to ensure that recommendations are practical.
- How to work with mothers to choose a recommendation.
- Techniques for and practice in motivating respondents to try recommendations.
- Criteria for sampling: age group, ethnicity, income, gender, health, or nutrition status.
- Scheduling: days of the week, times of the day, scheduling follow-up visits.

If exploratory research was conducted, it is helpful to have the same interviewers conduct TIPs. Refresher training for field team members is held before the implementation of the trials, but it is not as extensive as the one described above.

Implementing TIPs

Recruit Households

A preliminary visit is made to each site to make sure it is appropriate, explain the study, and gain permission to work in the community. After arriving to conduct the research, field team members work with local representatives to identify eligible children and select households. Consent is obtained and mothers are informed about what to expect before the initial interviews begin. Recruitment follows an approach similar to that described for in-depth interviews in Chapter 5. A sample recruitment form is included in Appendix B.3.

Conduct the Initial Visits

During the initial visit, field workers collect background information and conduct dietary assessments based on the prepared 24-hour recall and food frequency forms (see Box 6.2). The sample guide in Appendix B.7 provides additional instructions for conducting 24-hour recall and food frequency assessments.

The dietary information is compared with recommendations on the Assessment and Counseling Guide to identify child feeding practices that need improvement. Because a child's illness often influences feeding decisions, information on health status and appetite is also probed and recorded at this time.

In addition to conducting the 24-hour food recall, interviewers ask whether there were foods consumed by the child during the last two to three days that were *not* consumed on the day of the recall, and if there are other foods available in the home that are consumed by older family members. This information is used to identify foods that are not consumed every day but that are considered appropriate for children, and foods that might be added to the child's diet.

Field workers usually also ask open-ended questions about child appetite, feeding styles, and preparation practices (described later), and observe and make notes on any child feeding or food preparation activities that occur during the visit.

BOX 6.2: THE 24-HOUR DIETARY RECALL AND FOOD FREQUENCY METHODS

Ask the caregiver for a complete recall of all the foods and liquids consumed by the child during the previous 24 hours. Record this information on a simple form with columns for time of day, food preparation (e.g. soup, puree, etc.), ingredients, approximate quantity of food or ingredient consumed. Be sure to ask how much was actually eaten, not just how much was served. Inquire if this was a usual day with a diet typical for the child. If it was a special occasion, how was the child's diet affected?

- Ask the caregiver what the child ate the previous day, starting from when the child awoke. Continue by having the caregiver recall various activities that occurred during the previous day and probe whether the child had food at those times. Include beverages and tastes of other people's food.
- As each food is mentioned, find out the ingredients, methods of preparation (such as boiled or fried), and the approximate amount eaten by the child. If the mother (or caregiver) can show the child's cup or plate, it may be easier to estimate accurately the amount consumed. Alternatively, show the mother some standard measures (that are carried to the home) and ask her to estimate quantity.
- Prompt the caregiver about any snacks the child ate.
- Ask about frequency of breastfeeding if the child is still nursing. Also ask what cues resulted in nursing (e.g., crying, fussiness, or nursing on a fixed schedule).

After the recall, ask the mother:

- In the past two or three days have you given any foods to your child several times which you did not give yesterday?
- Was there any food prepared for or eaten by adults in the home yesterday that was not given to the child?

It is important to note that the purpose of the dietary assessment in TIPs is to provide a basis for discussion with the mother about feeding practices and problems, and to introduce and negotiate feasible improvements. The 24-hour recall method is *not* intended to be used to precisely quantify a child's usual dietary intake.

During the initial visit, these questions about feeding practices and perceptions are also important:

- Does the child eat all that is served? If yes, is more food offered? If no, does the mother offer encouragement or allow the child to decide when he is finished?
- Is the child served separately or does he eat with other siblings? Is feeding supervised or is the child left to feed himself?
- Does the child focus on eating or does he easily get distracted and go to play?

- Does the child regularly resist eating or does he eat vigorously?
- What dietary and practice changes, if any, does the mother make when the child is ill?
- Does the child seem hungry soon after the meal? What cues does he give?
- Has the amount of food consumed gradually increased as the child has gotten older, or has it remained the same or diminished?
- Does the mother think that the child is eating similar amounts as other children of the same age?
- Does the mother think that the child is growing well?

Analyze the Dietary Data and Plan Suggested Behavior Changes

Between the first and second visits, the field supervisor and interviewers review the results of each interview. This information is used in three ways: 1) to assess each child's feeding practices and select appropriate, tailored recommendations for testing on the follow-up visit; 2) to refine the original list of problems and recommendations, including appropriate, available foods for young children and positive practices already being implemented that can be tested with other mothers; and 3) to tabulate how often recommended behaviors are already being practiced. Observations on positive practices should be reported on so that the need for dietary improvement is placed in the context of all diets, and not only those with problems.

For each child, a form identifying individual feeding problems is completed by the interviewer with assistance from the field supervisor, using guidelines prepared by the research team's nutrition expert. The appropriate recommendations for the child, based on their specific problems, are selected from the Assessment and Counseling Guide, and written on the form used during the counseling visit.

As noted earlier, when analyzing the dietary information, it is important to recognize that it is *not* necessary to quantify each child's intake exactly. The analysis is intended to make judgements such as:

- Are breastfeeding practices adequate?
- Is feeding frequency adequate?
- Are the serving sizes large enough?
- Do the foods contain enough energy or are they too dilute or bulky?
- Is there enough variety in the diet to provide adequate amounts of protein, vitamin A, iron, and other essential nutrients for growth and development?

- What is the appropriate balance between feeding frequency, nutrient density, usual serving size, and diet variety (quality) to emphasize in this population, given the local diet for young children of different ages?

Clear guidelines, training in dietary assessment, and close supervision help to ensure that inadequacies in each child's diet *and* the best ways to improve nutrient intake are identified.

Complete details on how to analyze dietary data are beyond the scope of this manual. All programs require an experienced nutritionist to develop simple guidelines for this analysis. These guidelines are prepared using data on local foods, preparation practices, and nutrient composition tables. Suggestions and examples are included in Appendix C. Hopefully, in the near future, field tools will be developed to simplify the dietary assessment and analysis process for TIPs.

Conduct the Counseling Visits

During the counseling visit, the interviewer discusses the child's positive feeding practices and feeding problems. For each problem, corresponding recommended practices are mentioned and mothers are asked to select among them. Through a process of **negotiation**, the field worker and mother agree on the specific practices that the mother will carry out for next several days, until the scheduled follow-up visit. Throughout this discussion, the field worker carefully records the mother's reaction to the recommendations and the stated reasons for accepting or not accepting each one.

Although it may seem difficult to ask mothers to change practices, at least in the households where rapport is established, families usually are delighted to see the field worker return and often view this counseling as a reward for their earlier participation. Families generally are eager to try new practices that seem feasible when they understand how they can benefit the child.

During the negotiations, field workers often face resistance to new practices and they must encourage mothers to adopt one or more of the recommended changes. The Assessment and Counseling Guide includes strategies for motivating adoption and continuation of each recommendation. The success of different motivational strategies is also recorded during the visit. This information is used later to select motivational components of nutrition messages.

Whenever possible, it is best to teach through demonstration. If a new or modified food is agreed on, prepare it with the mother during the visit. If the child is going to eat more food at each meal, stay with the mother while she tries to do this. If possible, help her to complete the recommendation successfully. At least check the mother's understanding by asking her to repeat in her own words what new practice she is going to try and how she will do it. In areas where mothers (or at least one family member) are literate, leave a written reminder of what the mother has agreed to do.

At the end of the negotiations, agreement is reached on one, two, or, at most, three specific changes the mother is willing to try during the following days. The exact agreement is recorded (and later transcribed to the appropriate follow-up forms). It is important that each mother feels she has made her own decision about what to try. Review the sections on effective nutrition

communication in Chapter 2 for more information on this issue. Finally, a date is arranged for a follow-up visit five or six days later.

In Ecuador the counseling visit produced surprises:

- *Most mothers, even in the poorest areas, were willing and able to make at least small changes in their feeding practices. Many welcomed the recommendations, especially the weaning recipes, because they were interested in finding new ways to vary their children's diets.*
- *Mothers were surprised at how much their children actually could consume at any one sitting and throughout the day. During the in-depth interviews mothers had very little awareness about food quantity, in terms of how much a child required and how much was eaten in a single day. Investigators stayed with the mother and actually helped her feed her child. Each time, after a child consumed as much as he or she "wanted," the investigator encouraged the mother to feed more. Usually, to the mother's great surprise, the children happily continued eating, drawing attention to the idea of food quantity and to children's willingness to eat more when encouraged.*

In Nigeria recommendations were given as "feeding prescriptions"—the interviewer wrote the agreed-upon behavior changes on a small form that was given to the mother. For example, "Prepare soy flour and add two heaping tablespoons to the child's pap everyday."

Summarize the Response to Counseling

After the counseling visit, interviewers summarize each mother's response to all of the recommendations suggested (see Appendix B.8). One purpose of TIPs is to get participants' reactions to proposed behavior changes, before and after they try to implement them. *Negative reactions and unsuccessful adoption are as important as positive reactions and successful adoption.* The reasons a practice is not followed and under what conditions it might be, as well as any modifications that people make in the recommended practice during the trial, are valuable research findings.

It is useful to hold regular debriefing meetings so that the field team can review, summarize, and begin to analyze the results together. Debriefing meetings ought to begin early in the process of data collection, to correct problems. Possible corrections include modifying the recording forms, changing the sample, and revising the feeding recommendations.

During the debriefing meetings, supervisors review the lists of recommendations being offered to mothers to assess whether any recommendations are not being mentioned. Recommendations that are not suggested cannot be tested, and gaps will remain in the understanding of the acceptability of these practices. The most common reasons some recommendations get left out of counseling are:

- the relevant feeding problem rarely occurs in the sample, so the recommendation is not needed often;
- the feeding behavior is already widely practiced by most of the sample to whom it applies;

- a particular recommendation is at the end of a long list, so others are mentioned first; or
- the interviewers feel uncertain about making the suggestion, because they don't feel it is an appropriate practice or they are unsure how to explain and promote it.

Changes are made in the recommendations or the approach to counseling if major omissions are identified.

Conduct the Follow-up Visits

The field worker returns to the home on the pre-arranged day to assess the outcome of the trial. During this visit, she finds out if there are any significant changes in the home or in the child's health since the previous visit. A second 24-hour food recall is conducted, and the mother is interviewed about her reaction to the agreed-on practices. These discussions include the mother's experience with the new practice(s), the child's response, the mother's willingness to continue the practice in the future, and any modifications of the recommendations.

The following specific topics are discussed with the mother:

- the degree to which she followed the advice and why;
- how she felt about her experience (was trying the new practice hard or easy? were there any problems?);
- what other people thought and why;
- whether she or her child derived any benefits from or were harmed by the practice (specify);
- if she modified the recommendation and why;
- whether she intends to continue following the practice and why/why not; and
- how she might persuade a friend or relative to try the new practice.

If necessary, the mother is provided with additional counseling on child nutrition during this final visit.

If an important recommendation is consistently unsuccessful, and if time and logistics permit, it is useful to offer one or two alternative recommendations and conduct a second follow-up visit.

Analyzing the Results of the TIPs

Do Initial Analysis in the Field

Much of the initial analysis occurs between home visits, as described above. The interviewers summarize information, such as the child's age; feeding problems; and the recommendations discussed, demonstrated, and agreed on. After the follow-up visit, the mother's experience of carrying out the recommendation is added to the summary. As always, supervisors review all summaries to ensure that the information is complete.

After the follow-up visit, household summaries are tabulated for each age group. The tabulation includes information on:

- recommendations and motivations suggested;
- practices agreed on (noting changes that result from negotiations);
- outcome of *each* agreement (was it kept, modified, or not followed, and why); and
- reactions from the child and mother (like/dislike and why, problems, benefits they derived, intention to continue and why).

These summaries are used to **compare** reactions among the recommendations, so that the best (most accepted) can be chosen. They are also used to assess which recommendations are offered and agreed on most frequently; whether and why some recommendations are not offered; and to reaffirm that each recommendation is tested adequately.

During this analysis, the two dietary assessments (conducted on the initial and follow-up visits) are compared and summarized. The summary includes information such as breastfeeding frequency, consumption of non-breastmilk liquids, frequency of feeding solid foods, types of foods and amounts given, and rough calculations of nutrient intake.

At this time it is important to assess roughly whether the counseling affected feeding practices. Note during the 24-hour follow-up recall whether the agreed-on practices were followed. Also be alert to the possibility that adoption of the recommendations can be offset by detrimental changes in other feeding practices. For example, feeding more frequently may mean that less food is given per meal or that infants are nursed less frequently. During analysis, record whether adoption of the recommended practices appear to result in other—beneficial or detrimental—feeding changes.

Sort and Summarize after the TIPs Are Completed

Full analysis of TIPs involves several steps.

1. Analyze the responses to qualitative questions asked during the initial visit on feeding practices and beliefs by summarizing the major themes, such as:

- initiation and exclusivity of breastfeeding;
- planned duration of breastfeeding and reasons for stopping;
- breastfeeding problems and solutions;
- ages and cues for introduction of complementary foods;
- feeding and appetite during childhood illness; and/or
- sources of information and advice on infant feeding.

Highlight significant contrasts (by rural or urban residence, first-time versus experienced mothers, etc.), and include specific points or quotes mentioned by respondents that illustrate the conclusions. Focus on information that is useful for program planning by identifying problems, possible solutions, or ways to reach the program population. Refer to the sections in Chapter 5 on analysis of interviews and observations for additional information.

2. Summarize the results of dietary assessments. Describe the common feeding patterns of the population by age group, highlighting positive and negative practices. Describe feeding frequency, including meals and snacks as well as times of day children are and are not fed; common food preparation and nutrient densities.
3. Summarize the results of testing the proposed feeding recommendations. Tally the number of times each recommendation is suggested, agreed to, tried, and adopted and display the totals in a table. Describe adaptations made by mothers. Group the data by age or simply tally by recommendation across all age groups. Describe how changes in nutrient intake may be achieved and the expected magnitude of these changes.
4. These numbers are interpreted, based on the **reasons** for acceptance or rejection (i.e., the motivations and constraints). For guidance, excerpts from the presentation of results in Swaziland and The Gambia are included in Attachment 6.3 at the end of this chapter.

Compare and contrast the findings from different communities, age groups, and types of households by sorting the summaries into piles by various criteria. Depending on the research questions, it may be important to note differences based on criteria such as whether children are sick or malnourished. Interpretation is different if those who do not comply with the changes are primarily mothers of sick children or if other factors such as food security affect compliance.

Revise the Child Feeding Recommendations and Write a Brief Summary on the TIPs

Revise the list of child feeding recommendations to include only those that mothers were willing to try and that mothers and children liked. The objective is to refine the list of recommendations and to make them as specific, nutritionally sound, and acceptable as possible. The most important motivating factors and resistance points related to each recommendation are also noted. This list forms the basis of the nutrition program plan, specifically the nutrition education and communication activities.

The summary report includes:

- a brief description of the methods;

- a description of the sample (number and type of communities and participants);
- a summary table noting which feeding practices were recommended most frequently and most likely to be tried, liked, and adopted;
- a description of the response to the recommendations by age group, including the most important motivations and constraints for improving practices;
- a description of regional differences or any other factors such as food availability that directly affect the adoption of the recommendations;
- adaptations that mothers made to recommended practices;
- the expected impact from specific practice changes alone and in combinations;
- conclusions regarding implications of the results for program planning, such as whether different messages are needed for certain population segments; and
- consideration of whether checking research is needed, a list of the critical issues that need further investigation, and the type of people to participate.

Highlights of Insights from TIPs:

- **Swaziland**—*Recommendations to enrich soft porridge by adding ingredients such as milk powder were popular in the trials, but the use of sour porridge was not accepted because of strong beliefs that it would cause heartburn.*
- **The Gambia**—*Although many mothers agreed to add groundnut paste to children's porridge, actual trial and adoption were much lower due to the poor availability and high cost of groundnuts at the time of the TIPs.*
- **Tanzania**—*Mothers gave water to breastfed children under six months to prevent constipation, but they were willing to try exclusive breastfeeding and were pleased with this new practice.*
- **Nigeria**—*Mothers thought that the preparation of soya flour was a long and tedious process. They were excited to learn a simple method because they felt that soya beans were easily available and good for their children.*
- **Indonesia**—*Mothers were not willing to add drops of oil from a bottle to their children's rice porridge. They modified the preparation so that in one place the rice porridge was cooked with the oil and in another a fried food (tahu) was mashed into the rice porridge.*

Attachment 6.1

ASSESSMENT AND COUNSELING GUIDE:

**COMMON FEEDING PROBLEMS AND RECOMMENDATIONS FOR HOUSEHOLD ACTION
TRIALS IN OYO AND OSUN STATES**

(From: Dickin K. *Trip report on qualitative research on infant feeding in Nigeria*. Consultant report prepared for Wellstart International, Washington, DC, 1995.)

ASSESSMENT AND COUNSELING GUIDE:

COMMON FEEDING PROBLEMS AND RECOMMENDATIONS FOR HOUSEHOLD TRIALS OF IMPROVED PRACTICES IN OYO AND OSUN STATES

Age Group: Birth to 2.9 months

Ideal feeding pattern: Exclusive breastfeeding.

Problem 1: Mother not breastfeeding exclusively

Recommendations:

- 1a. If child not yet breastfed and being given prelacteal feeds: Put child to breast and breastfeed frequently, day and night.
- 1b. Breastfeed more frequently: on demand and at least 8–10 times per day (24 hours).
- 1c. Sleep with the child and breastfeed during the night.
- 1d. Stop giving feeds of water, milk, concoctions, pap or other foods/liquids.
- 1e. Reduce feeds of water, milk, concoctions, pap or other foods/liquids (reduce frequency or amount).
- 1f. Express breast milk to be given to the child when mother is absent.

Problem 2: Mother not breastfeeding child at night.

Recommendations:

- 2a. Sleep with the baby and breastfeed while lying down.
- 2b. Feed expressed milk during the night.

Problem 3: Mother trying to breastfeed exclusively, but feels she doesn't have enough milk.

Recommendations:

- 3a. Breastfeed more frequently—2 more times per day, minimum of 8 times per 24 hours.
- 3b. Use both breasts at each feed and empty breasts completely by feeding longer.

Problem 4: Mother is giving inappropriate bottle feeds and is not willing/able to breastfeed exclusively (or is not breastfeeding at all).

Recommendations:

- 4a. Increase breastfeeding as much as possible and reduce the amount of formula.

4b. Use an appropriate infant formula and stop giving feeds of pap, "tea," or other concoctions.

4c. Prepare formula properly, according to instructions.

Age Group: 3–5.9 months

Ideal feeding pattern: Exclusive breastfeeding.

- If child is predominantly breastfed, see previous page for problems and recommendations for moving toward exclusive breastfeeding. This is the preferred option.
- If child is taking a substantial amount of complementary foods and exclusive or full breastfeeding is not feasible, see problems and recommendations below, for next age group.

Age Group: 6–8.9 months

Ideal feeding pattern: Frequent breastfeeding complemented by nutritious soft foods.

Problem 5: Semi-solid or liquid feeds are not nutrient-dense enough (or complementary feeds are not yet given).

Recommendations:

- 5a. Give child locally available, affordable, nutritious foods such as *eko-afala*, *moinmoin*, mashed beans, *ekuru*, yam pottage, etc.
- 5b. Make pap thicker (using more *ogi* paste) and feed using a cup and spoon; stop over-dilution with water.
- 5c. Enrich *ogi* with groundnut, crayfish, *egusi*, soy flour, cowpea flour, palm oil, sugar, milk, or egg, etc.
- 5d. Give mashed fruits or vegetables (banana, papaw, orange, mango, roasted plantain, cooked green leaves, etc.)

* All are to be fed with cup and spoon, not with bottles or by force-feeding.

Problem 6: Child is fed less than 3 times per day (in addition to breastfeeding on demand) or given too small amounts (less than ½ cup serving of mashed foods or less than ¾ cup of enriched pap).

Recommendations:

- 6a. Feed one extra meal or snack every day.

- 6b. Increase serving by 2 spoonfuls each meal (or more if child will take more) and encourage child to eat the whole serving.

Problem 7: Breastfeeding being reduced/replaced too quickly.

Recommendations:

- 7a. Breastfeed more frequently, on demand and at least 8 times per day.
- 7b. Breastfeed first, before offering other foods.
- 7c. Breastfeed on demand at night.
- 7d. Give expressed breast milk to child when mother is absent.

Age group: 9–11.9 months

Ideal feeding pattern: Continued breastfeeding, nutritious soft foods and family foods.

Problem 8: Solid family foods have not been introduced.

Recommendations:

- 8a. Gradually introduce family foods such as *amala*, *ewedu*, enriched *eko-afala*, mashed beans, *moinmoin*, etc.
- 8b. Mash family foods or alter preparation to make them suitable for feeding infants (less pepper, removing hulls, etc.)
- 8c. Give thick, enriched pap if unwilling to begin solids.

Problem 9: Solids have been introduced but without enough nutrient-density or variety.

Recommendations:

- 9a. Make sure child is receiving plenty of stew and ingredients such as vegetables and meat with the staple.
- 9b. Introduce different types of family food, that provide a variety of nutrients: give examples.
- 9c. Enrich foods with properly processed soya products: give examples of how to prepare foods with soya.
- 9d. Give nutritious snacks such as fruits (banana, orange, papaw), boiled eggs, *kulikuli*, *akara*, *moinmoin*, *ekuru*, fried yam, etc.

Problem 10: Child is fed less than 5 times per day or eating too small amounts (less than 3/4 cup per meal) either due to serving size or child's refusal.

Recommendations:

- 10a. Feed one extra meal or nutritious snack every day (see types of food and snacks listed above).
- 10b. Increase serving by 2 spoonfuls each meal (or more if child will take more) and encourage child to eat whole serving.
- 10c. If child eats from same dish with others, give a separate serving and watch to be sure child eats it.
- 10d. Try different foods or combinations to improve flavor.

Age Group: 12 months–2 years

Ideal feeding patterns: Eating with family diet plus extra feeds, with continued frequent breastfeeding.

Problem 11: Child not yet eating meals with the family.

Recommendations:

- 11a. Start feeding child the usual family foods at mealtimes, mashed or softening the staple with *ewedu*, *okro*, etc.
- 11b. Avoid pepper or other condiments that might put the child off.
- 11c. If still giving pap or liquid feeds, enrich and only give as extra meals/snacks between family mealtimes.
- 11d. Give the child meals/foods including meat, eggs, fish or a variety of plant proteins.
- 11e. Avoid non-nutritious snacks that may spoil the appetite for family meals.

Problem 12: Child eats family meals but without enough nutrient-density or variety.

Recommendations:

- 12a. Add nutritious ingredients to the meals such as crayfish, fish, soybean flour, etc.
- 12b. Make stews with beans, egg, green leaves, egusi and mix more stew with the child's staple.
- 12c. Add palm oil to the child's serving.
- 12d. Make sure child gets some of all the foods in the meal, including meat.

- 12e. Give nutritious snacks such as fruits (banana, orange, papaw, mango, pineapple), eggs, *akara*, *kulikuli*, etc.

Problem 13: Child fed less than 5 times per day or eats too small amounts (less than 1 cup per meal).

Recommendations:

- 13a. Feed one extra meal or nutritious snack every day (see types of food and snacks listed above).
- 13b. Increase serving by 2 spoonfuls each meal (or more) and encourage child to eat the whole serving.
- 13c. If child eats from same dish with others, give a separate serving and watch to be sure child eats it.
- 13d. Try different foods to encourage child to eat.

Problem 14: Child given sweets and carbonated drinks as pacifier.

Recommendations:

- 14a. Stop giving sweets and soft drinks.
- 14b. Reduce the amount and/or frequency of sweets and soft drinks.
- 14c. Give nutritious snacks instead (see examples above).

MOTIVATION REMINDERS FOR THE TIPS COUNSELING

(From: Ministry of Health, Ghana. *Improving young child feeding practices in Ghana. Assessment field activity: Ghana household intervention trials.*
Ghana: Nutrition Division, 1989a.)

1/1/89

Motivation reminders for the TIPs counseling

4-6 MONTHS

Baby cannot eat thick porridge.

Thick porridge is still very soft. If baby is fed patiently and slowly with a spoon, he'll get used to it.

It takes less time to feed thin watery porridge.

It may be true that the baby will take thin porridge faster, but it is mostly water and so he will soon be hungry again.

The flour for the porridge is too course. I have to strain it.

Ask the mother to have the corn or millet milled twice.

Ask the mother to have you make it together and try feeding the baby.

If mother resists strongly against the flour mixture, ask her just to try to use a little less water in cooking the porridge.

Baby will not like enriched porridge.

He will learn to like it if he is fed patiently. Babies have to learn to get used to new foods. New foods have to be tried more than once.

His stomach will run

Take little less groundnut paste next time.

If the porridge has been sitting, reheat it before it is fed again.

7-11 MONTHS

No time to feed so many times.

Ask her to try to feed just one more time than usual.

It is expensive.

Ask mother to add a little more food to each meal and encourage child to eat even if the child stops and wants to play.

Baby is not used to this food.

My baby does not like this food.

Ask her to be patient and try to feed it slowly. Ask her to try the food more than once.

Someone else says this is bad for children.

Ask her if there is some other food she would rather make.

Ask to talk to that person.

The ingredients are not available.

Ask her to make similar recipe with what she has.

12-24 MONTHS

Soap will get into the food.

Cost of soap.

Use more water.

If dirt gets into the stomach it can cause diarrhea and that will cost more.

Wash well with water.

Attachment 6.2

**SAMPLE RESEARCH PLAN FOR QUALITATIVE RESEARCH
INFANT FEEDING IN OSUN AND OYO STATE, NIGERIA**

(From: Dickin K. *Trip report on qualitative research on infant feeding in Nigeria*. Consultant report prepared for Wellstart International, Washington, DC, 1995.)

**DRAFT RESEARCH PLAN FOR QUALITATIVE RESEARCH
INFANT FEEDING IN OSUN AND OYO STATE, NIGERIA**

Introduction

The formative research to be conducted in Oyo and Osun States is intended to focus on key issues that need to be addressed in order to plan the Wellstart Expanded Promotion of Breastfeeding (EPB) activities for these areas. The objectives include:

- to improve our understanding of mothers' and other family members' beliefs about infant feeding, their reasons for current practices related to child nutrition, and the constraints to changing behavior;
- to investigate the current beliefs on infant feeding of various community-based health workers who may be involved in implementation of EPB activities, and to assess their motivations and constraints for providing counseling on infant feeding;
- to test, at the household level, the acceptability and feasibility of possible recommendations for improving young child feeding;
- to gather information that will guide the development of effective information, education, and communications (IEC) component and community interventions to improve feeding practices and child nutritional status; and
- to train Nigerian researchers in the use of qualitative formative research methods;

There will be two main components of the research:

1. a brief set of focused group discussions (FGDs) with mothers and other family members who influence child feeding, and interview with community-based health workers;
2. a set of trials of improved practices (TIPs) that include in-depth interviews to identify feeding problems, provision of counseling to motivate mothers to try improved practices, and follow-up to learn about their responses and opinions on the acceptability of the recommended behaviors.

These components will be conducted simultaneously by different research teams, and both will include rural and urban populations. We would not normally conduct household trials before looking at the results of the FGDs, but the extensive literature on child feeding among the Yoruba makes it possible in this case, and the time constraints make it necessary. Question guides will be developed to address the gaps in current understanding, as identified by the literature review. An overview of how the two components will be conducted is given below.

Overview of Key Topics, Participants and Methods

Method	Participants	General Topics
FGDs, using projective techniques (responding to pictures, etc.)	Mothers of children <2 years	Images of breast and bottle-feeding Perceived advantages and disadvantages Concepts of child health, development and feeding; aspirations for the child Attitudes toward VHWs/CBDs Sources of guidance on infant feeding
FGDs	Grandmothers of children <2 years	Modern and traditional child feeding; constraints to changing practices Concepts/relationship of child health, development, and feeding practices Perceived role/influence of grandmother
FGDs	Fathers of children <2 years	Roles of fathers in infant feeding Images of breast and bottle-feeding Perceived advantages and disadvantages
Interviews	Program implementors (Community health workers, traditional birth attendants, etc.)	Knowledge of appropriate infant feeding Understanding of how to communicate with mothers/counseling skills Motivations and constraints for providing information on infant feeding and motivating behavior change in the community
In-depth Interviews and Trials of improved practices	Mothers of children aged 0–24 (?) months (see additional criteria and more specific age groups)	Willingness to try infant feeding practices (exclusive breastfeeding, fortification of pap, increased frequency/amount of breast milk or foods, introduction of solid foods, etc.) Response to trials/perceived outcome Motivations and constraints for adoption of recommended feeding practices

FGDs and Interviews

This method will be used with a small sample, to explore issues that are easily discussed in a group. It is hoped that experienced moderators can be identified who can conduct FGDs and interviews independently, after a relatively short training period.

Framework for Sampling and Personnel Requirements

FGD Participants	Rural Site	Urban Site	Personnel
Mothers of children <2	2	2	Team A: 1 female moderator 1–2 female note-takers
Grandmothers of children <2	2	2	
Fathers of children <2	2	2	Team B: 1 male moderator 1–2 male note-takers
Interview Participants	Rural Site	Urban Site	Personnel
CBDs	3	3	Team A and/or B: 1–2 interviewers 1–2 note takers (?)
VHWs/TBAs	3	3	

Qualifications of Personnel

The following description provides an ideal set of qualifications of personnel to conduct the FGDs and interviews (numbers of personnel indicated in above table).

- It is recognized that not all criteria can be met, but it is important to recruit moderators with experience in qualitative research and preferably FGDs, even if it involves working with an additional research organization. Note-takers need not be experienced.
- The staff selected must be fluent in Yoruba, with adequate English skills;
- Willing to work in rural communities and able to establish rapport with a variety of people;
- Willing to undertake short-term, intensive study (available from April 23 in Ibadan, for about four weeks, able to work weekends and evenings during the visit, if necessary).
- It would be advantageous to have some experience with nutrition and health issues.

Trials of Improved Practices

The trials of improved practices (TIPs) will be conducted as separate research teams, and likely in other (although similar) communities than the FGDs. The bulk of the training period will be spent on this methodology. Logistics can be complicated due to the need for return visits to the same households, so suggested schedules are also included in this section.

Sample for the Trials

In order to test age-specific recommendations, the sample must include narrow age ranges. "Together" and "separate" refer to the amount of time a mother spends with her child, and cut-off

points for these categories will need to be established with the advice of local investigators. For example, "separate" might be defined as being absent from the home (without taking the child along) for more than four hours a day, or for a full day more than once a week. Ideally, these categories would be tested for relevance, but given the time constraints, we will just need to estimate the cut-offs and modify them, if necessary. It is also possible that another criterion, such as maternal education, would be more important for sampling, depending on the nature of the population included in the study.

Age Group (months)	Rural (Oyo & Osun)		Urban (Oyo & Osun)		Total
	Together	Separate	Together	Separate	
0-2	2	2	2	2	8
3-5	2	2	2	2	8
6-8	2	2	2	2	8
9-11	2	2	2	2	8
12-17	2	2	2	2	8
18-23	2	1	2	1	6

A total of 46 households (three visits to each) selected from two or four sites (i.e. one rural and one urban in each state, or between the two state), or about 12 households per site. This could be reduced if "together/separate" criteria are not found to be important, or if some of the age groups can be collapsed. However, to gather information on breastfeeding, introduction of complementary feeding and transition to family diet, this may represent the minimum sample.

Logistics and Personnel

The schedule below shows how the household visits could be implemented in the most efficient manner by *one* team in *one* community. Two weeks would be the minimum time needed, assuming no delays due to community events, absences of mothers, etc. In the schedule, the letters (A) and (B) are used to refer to the first and second set of mothers interviewed, to clarify who is visited when, for counseling and follow-up. For example, follow-up (B) should be with the same mothers as initial visit (B) and counseling visit (B). The columns under "Field Worker" show how many visits would be conducted by each of the workers (shown as "i", "ii", and "iii").

**Two-Week Schedule for Conducting 3-visit Trials in 12 Households in a Community
Using a Team of 1 Field Supervisor and 3 Counselors**

Schedule	Activity	Field Workers			Total Completed
		i	ii	iii	
Week 1: Monday	Meet community leaders Recruitment of mothers according to the sampling criteria and child age group				recruit 12 (plus 3 extra in case of refusal or drop-out)
Tuesday	Initial interviews (A)	2	2	2	6
	Analyze feeding problems, plan counseling Modify counseling guide, if needed				
Wednesday	Counseling interviews (A)	2	2	2	6
	Review notes and summarize results				
Thursday	Initial interviews (B)	2	2	2	6
	Analyze feeding problems, plan counseling Modify counseling guide, if needed				
Friday	Counseling interviews (B)	2	2	2	6
	Review notes and summarize results				
Saturday	Complete any missed counseling visits				
Sunday	Day off				
Week 2: Monday	Follow-up visits (A)	2	2	2	6 complete
Tuesday	Analysis of findings: review and summarize Conduct any missed follow-up visits				
Wednesday	Follow-up visits (B)	2	2	2	6 complete
Thursday	Analysis of findings: review and summarize Conduct any missed follow-up visits				
Friday	Final analysis, community-level summary De-brief community leaders, if needed				

The second schedule shows how the two teams could complete four sites in four weeks. Again, this would be the minimum amount of time needed. Also note that this plan assumes about two weeks of training and pretesting of the methods and the guidelines, prior to initiation of the activities shown in the schedule.

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**Overall Schedule for Completing Household Trials in 4 Sites in 4 Weeks
Using 2 Field Teams (based on above weekly schedule)**

Week	Oyo (Team of 3 counselors and 1 field supervisor)		Osun (Team of 3 counselors and 1 field supervisor)	
	Urban	Rural	Urban	Rural
1	Recruitment 12 initial visits 12 counseling visits Initial Analysis		Recruitment 12 initial visits 12 counseling visits Initial Analysis	
2	12 follow-up visits Analysis		12 follow-up visits Analysis	
3		Recruitment 12 initial visits 12 counseling visits Initial Analysis		Recruitment 12 initial visits 12 counseling visits Initial Analysis
4		12 follow-up visits Analysis		12 follow-up visits Analysis
Total	12	12	12	12

This would be followed by a period of summary analysis and preparation of a research report, including identification of the most acceptable and successful feeding recommendations. It would be advantageous for the field supervisors to be involved in this process, along with the principal investigators.

Attachment 6.3

**EXCERPTS OF SUMMARIES OF FINDINGS FROM
TRIALS OF IMPROVED PRACTICES**

(From: Project for the Promotion of Improved Young Child Feeding. *Focus Group Discussions*.
Swaziland: National Nutrition Council, 1987.)

(From: Samba N.K. *Improving infant and young child feeding practices in the Gambia*.
PRITECH/USAID, 1992.)

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Swaziland

Age Group 12 Months or Older

The most important practice changes for this group are: increasing the amount of food fed per meal and the number of times the child eats per day. The energy density of the food is still critical as children should be receiving solid/adult foods and no more porridge. The recommendations from which the investigators and mother chose their trials were:

- I. Child is fed less than five times per day
 - Child to eat three times a day with family pot foods and receive two snacks/extra meals.
 - Child should eat before she goes to sleep.
- II. Child is fed less than five cups/day
 - Each time child eats he should have one cup or plate.
 - Each meal, mother should measure amount of food offered and eaten.
 - Child eats from own bowl always.
- III. Child is breastfed—but not fully
 - Child to feed at least three times/day.
 - Each feed on both breasts or on alternative breasts.
 - Each feed more than four minutes.
 - Mother to "concentrate," position child correctly.
- IV. Child eats food of not sufficient quality/density
 - Child to eat whatever food the family eats.
 - Child to eat liphalishi thinned with malt if not getting adult food yet.
 - Family relish to be mashed into the liphalishi.
 - No indengane.
 - Mix peanut butter with thinned/ordinary liphalishi.
 - Add oil or margarine to the thinned/ordinary liphalishi.
 - Fry left-over porridge for child.

There were twenty-one children who participated in these trials, but four of these children could not be found for the follow-up visit. Thus these four trials were incomplete. Following is the list of recommendations and the number of children to whom they were to be applied:

- All 21 children's mothers were asked to increase feeding frequency to five times per day.
- Sixteen mothers were asked to increase the amount of food they were giving to their child, especially the amount of solid foods—liphalishi and relish.
- Fifteen mothers discussed making their child's food more energy dense either by giving more relish or by adding oil or peanuts/peanut butter.

- Twelve mothers were asked to take greater care and measure their child's food by separating the child's food into his own plate.
- Four mothers, all with children in the younger range of this age group, were asked to begin giving liphalishi to their child but softened with milk.
- Three mothers, again with children in the younger range of this group, were asked to stop giving the bottle and to increase breastfeeding frequency.

The outcomes of these trials were:

- All of the mothers asked to increase frequency of feeding (21 children) agreed primarily because they realized that their child needed more food to grow or because they knew their child could eat the food and would not waste it. Four of these trials were not followed up.

Of the seventeen who were followed, eleven mothers were successful. Seven mothers were successful in increasing the number of meals the child received (liphalishi and relish). Usually frequency was increased by one more time per day, sometimes by two more times, to give an average frequency of four meals per day. The other four mothers were able to increase the number of snacks (usually composed of just one food or a small semi-solid feed of porridge and emasi) by about two per day. The number of snacks given seemed to vary inversely to the number of meals consumed. When meal frequency was low, then snacks were given as frequently as four or five times per day.

- Each of the sixteen mothers who was asked to increase the amount of food given to her child in one sitting agreed to do so. However, three of the trials could not be followed up.

Of the thirteen complete trials, eight were successful in increasing the quantity given per meal by about half a cup. (One mother said that she was only able to do this because she had received some donated food.) Generally, the mothers who did not comply said that their child would not finish the food served and that would, therefore, be wasteful.

In general, liphalishi given as a meal was increased rather than the semi-solid snack food.

- All fifteen mothers agreed to making the child's food more energy dense because they said they could understand the reason for doing so: liquid foods "don't stay with the child" and "it is easier when the child eats family food". Mothers also agreed that food is tastier with relish and that the relish itself is tastier with oil or peanuts.

Of these fifteen mothers, thirteen successfully increased the amount of relish given to the child. Two mothers did not have relish and therefore did not succeed in this trial. In addition to this, five mothers said they were adding more oil to the relish and one mother said that on several days she had added peanuts. However, the peanuts were not commonly used because mothers said they just did not have them. Oil was not used in several homes because it was felt to be extremely expensive. When it was used, because of the cost involved, mothers preferred to add oil to the relish rather than directly to the child's porridge. Oil was also used by two mothers for frying left-over porridge.

- Twelve mothers agreed to be more careful in measuring servings of food and to feed the child from his own bowl. Three of these trials were not followed up. Of the nine completed trials, six were successful. Mothers liked the idea of knowing how much the child was eating and had no problem with supplying the child with his own bowl. Other mothers said they simply did not have extra utensils or, as in the case of the twins, it was impossible to separate the children's food.
- Three mothers who had not introduced liphalishi to their children and one mother whose child was sick and not eating liphalishi, agreed to soften liphalishi with malt. All of these trials were very successful. The mothers thought that using food from the family pot saved time. One mother recognized clearly that her child was eating a lot more.
- The three mothers who agreed to decreasing bottle feeding and to increase breastfeeding were not too successful. The mothers said that they could nurse the child at the breast longer but not increase breastfeeding frequency because they were too busy. Three mothers were able to decrease bottle feeds but not stop as the child continued to cry for the bottle.

Sick Children or Children Recuperating from Illness

The most important practice changes for these children are: increasing the amount of food they receive during illness, even if this means changing to semi-solid food. It is most important that children eat more food of good energy density for a week or two after the illness. The recommendations from which the investigators and mothers chose their trials were:

- I. Mother is breastfeeding and child is less than four months
 - Increase the frequency of breastfeeding to at least two more times/day or give more frequently if the child demands.
- II. Mother is not breastfeeding or she is breastfeeding but her child is more than four months complete
 - Give ORS/SSS or other additional fluids every time the child has diarrhoea or vomiting.
- III. Mother giving food to child over four months—child has loss of appetite
 - Continue to feed but change the consistency to a softer food.
 - Feed small portions but more frequently—as often as six times/day.
 - Change to a food the child likes.
 - Feed the child sour foods:
 - emasi and liphalishi;
 - incwancwa and sugar.
- IV. Mother sits with child and feeds the child
 - Encourage child to eat.
- V. Mother has child who is recuperating from an illness
Refer to the recommendations for child's age:

- Increase the feeding frequency for the week by one more meal than child should receive.
- Offer the child special foods during the weeks recuperation:
 - banana ■ milk powder
 - peanut butter ■ meat/relish

Although several of the children participating in the trials were sick or recuperating from illness, they were able to participate in the trials for their age group. There was only one case where the mother said that she was unable to comply entirely with the recommendations because her child was sick.

The one special trial that was tailored for a sick child was reported in the previous section—thinning liphalishi with malt. This was successful.

Conclusions

The overwhelming participation in and success of the trials indicates the interest and enthusiasm mothers have for trying to improve conditions for their children. With few exceptions the ethnographers' advice was welcome. Even in homes with severe resource constraints, mothers were willing to try something new. In the total sample of trial participants (33 households) there seem to be only two or three households with such severe economic constraints that they could not do anything to improve their child's diet. Given that the sample was selected to represent poor households, this is encouraging in terms of the potential impact of an educational campaign that requires that families have a minimum level of resource flexibility.

In terms of the potential success of different practice changes it seems that:

- Prenatal and antenatal counseling on various breastfeeding techniques is vital to discouraging the initial use of bottles. Although it seems possible to encourage women to breastfeed more frequently, and perhaps for longer periods if their babies are under about fifteen months, it is extremely difficult to ask a mother to stop bottle feeding her child. In all of the cases where a mother was asked to stop bottle feeding completely, she could only decrease the frequency. The emphasis must be placed on preventing the use of the bottle.
- The concept of mothers introducing an "enriched" or energy-dense soft porridge by the fourth month of life (the child is three or four months) holds tremendous promise. In the malt trials, only one trial of ten was negative. The trials to mix emasi and milk powder with liphalishi were also successful. It was also encouraging that with the introduction of the semi-sold porridge the more liquid feeding was stopped in all five cases where it was tried. Use of sour porridge (incwancwa) was not successful because of strongly held beliefs about it causing heartburn.
- Increasing the energy density of older children's food with anything other than the family relish plus some oil will be difficult. It does seem possible to increase relish consumption from its current level, but this seems to be one area that touches on resource constraints. The popularity of feeding from the family pot because it is cheaper, quicker, easier and involves no special cooking for the child should be emphasized.

- Increasing frequency of feeding does not have to be separated from increasing the amount per serving. It seems mothers are able to do one or the other and, in many cases, both. However, few achieved the ideal we were seeking, especially in terms of amounts of food per meal. The mothers underfed by about a quarter of a cup compared to what was expected on total volume per meal. Children from 7–11 months ate about half a cup per meal and those children over a year old ate about three quarters of a cup per meal. The older children were able to increase their intake by about half a cup per "meal" or by about one and a half cups per day. It seemed that mothers were able to increase frequency by about two more times per day—either in snacks or meals and achieved a total frequency of 4–5 feedings per day. Mothers will need precise information about frequency and quantity.

- Introducing the idea of measuring the child's food by separating the food into his own bowl was well received where families had enough utensils. This practice should fit well with an overall effort to encourage mothers to be conscientious about child feeding.

Excerpt from The Gambia

5.4 THE 10 TO 24 MONTH AGE GROUP

Sixteen mother-child pairs were selected within this age group. Three children had diarrhoea at the time of the survey and five were undernourished. There was only one drop-out before the end of the trials.

Ideal Feeding Pattern: Inclusion of more "family foods", particularly the vegetables, fish, etc. in the sauce. Feeding at least 4–5 times a day, either meals or nutritious snacks, given in adequate amounts (200 g). Continued breastfeeding.

5.4.1 Diet analysis of selected infants

- Most of the children were breastfed.
- Three children, all of them over 16 months of age, had already been weaned of the breast.
- Most of the children were eating adult foods.
- Most of the children were still receiving weaning paps in the form of *ogi* and *churah gerteh*.

5.4.2 Options mothers most willing to try

For this age group, recommendations for both children aged 7 to 9 months and 10 to 24 months were promoted as applicable. The most often proposed recommendations were:

- to make the weaning pap thicker and enrich it with groundnuts
- to feed at least one more meal per day
- to increase amount of serving and make sure child gets a bit of every ingredient in an adult dish
- to feed nutritious snacks e.g. *futu kanya*, fruits and pancakes
- to serve child from a separate bowl
- to introduce feeding adult foods

Eleven of the children investigated had consumed adult foods the day before the previous visit. However, the number of meals in the day was insufficient. On average, children were eating only three to four meals a day. Where the option of increasing the number of meals was coupled with feeding nutritious snacks, mothers tended to prefer to follow the second recommendation.

Table 6: Results of Household Trials in the 10–24 month age group:

RECOMMENDATIONS	No. who were advised to try	No. who agreed to try	No. who followed recommendation
Continue breastfeeding until 24 months of age	0	n/a	n/a
Feed at least one more meal per day	3	1	1
Feed nutritious snacks between meals e.g. <i>futu kanya</i> , fish cakes, pancakes	0	n/a	n/a
Increase amount of serving and make sure child gets a bit of every ingredient in an adult dish	3	1	1
Feed nutritious snacks e.g.. <i>futu kanya</i> , fruits, pancakes, etc.	7	4	4
Put child's food in a separate bowl and encourage child to eat as much as she can. If child is feeding herself, she should be supervised by an older person.	7	7	7
Begin feeding adult foods, mashed or mixed with sauce, with less pepper. Encourage child to eat and become accustomed to adult foods.	3	2	2

n/a= not applicable

It is traditional practice to feed communally, and the recommendation to feed children from a separate bowl was proposed to seven mothers. All of them (100%) accepted to follow the recommendation. In one case, a mother reported that even though she fed her child from a separate bowl, the child still continued to feed communally with other members of the family. A mother from Sankuley kunda said that she would continue the recommendation because her child was eating well from its own bowl and there was no disturbance from other children. Another mother from the same village said that if a child eats from its own bowl he or she is more likely to eat enough.

Ten children in this group were still receiving weaning foods in the form of *ogi* or *churah gerteh*, especially at breakfast time. The option to improve the nutritional value of the *ogi* by adding groundnuts was discussed with five mothers and three of them (60%) agreed to follow the recommendation. One mother from Sintet said that when she had no groundnuts, she would sometimes added other ingredients such as butter to enrich the weaning pap.

5.4.3 The effects of diarrhoea and malnutrition on the findings for this age group

Five children in this group were malnourished. The diet of the malnourished children did not appear to vary much from that of normal weight children. Four of the underweight children were still breastfeeding and had consumed rice and a stew the day before the initial visit. Four of them had also eaten *ogi* or *churah gerteh* on this same day.

Three mothers of malnourished children, two from Sarra kunda and one from Sintet, agreed to feed nutritious snacks. The same number also agreed to feed adult foods from a separate bowl. Another three mothers from each of the study villages agreed to feed one more meal a day and one of these mothers, from Sintet was willing to enrich her child's pap with groundnuts. All of these mothers reported that their children gained weight and responded well to the recommendations.

In this age group, three children with diarrhoea were identified and followed-up during the household trials. All of came from Sintet. One of these children, a sixteen month old boy, had received only breastmilk the day before the initial visit, this child was also undernourished. It is not certain whether other foods were withdrawn because of the diarrhoea. Another was fed on rice and stew the day before the initial visit and the third had been given *ogi*. Both of these children were also breastfed.

The mother of the child receiving only breastmilk, agreed to introduce adult foods, mashed or mixed with a stew, and feed the child with nutritious snacks. She promised to follow the recommendations because the child responded well to them.

One of the mothers feeding *ogi* to her child agreed to add groundnuts to it and at the end of the trials informed us that she will continue the recommendation because her child had gained weight.

The third mother who was feeding her child both *ogi* and adult foods, agreed to feed an extra meal for one to two weeks after the illness is over and also add groundnuts to her child's *ogi*. Her child responded well to the recommendations and the diarrhoea stopped during the course of the trials.

5.4.4 Motivations and constraints

For this age group, the recommendations mothers were most willing to try were:

- to feed adult foods twice a day
- to feed child from a separate bowl
- to feed child with snack foods e.g., *futu kanya*

Motivations to accepting the selected recommendations were:

- child is gaining weight
- child eats well to satisfaction
- mother wants child to be healthy

Mothers hardly reported any constraints to adopting these recommendation. Feeding a child from a separate bowl was noted as a constraint where a child was accustomed to eating with other children and did not want to eat on his/her own.

CHAPTER 7: CHECKING RESEARCH

Decide Whether Checking Research Is Needed

Checking research involves the use of rapid research methods, such as focus group discussions (FGDs), to check exploratory and TIPs findings with people who have not already participated in the research. The decision to include checking research is made after TIPs are analyzed.

To reach this decision, first assess the completeness of the information obtained to date. How certain are you that the conclusions are valid and applicable to the program population? Is there enough information available to develop a well-informed program strategy? If the literature review, exploratory research, and TIPs already provide a clear picture of program needs, conducting checking research is unnecessary and you can proceed to application of the results, as described under Phase 3.

If questions remain, either because the research has raised new issues or because the small sample and intensive methods result in findings that cannot be generalized broadly, a brief round of checking research is needed to confirm and broaden the results. Checking research almost always is required for national programs and programs with large and diverse target populations. Refer to Box 4.2 in Chapter 4, which lists some occasions when checking research is needed.

Checking research usually is conducted in just a few sites with very small samples. The emphasis is on obtaining initial, off-the-top-of-the-head reactions to the practices that were favored in the TIPs and that are likely to be promoted in the program. Attention is paid to whether the new groups or individuals react in ways that confirm the earlier findings or contradict them, and what obstacles are present in the minds of people hearing the recommendation for the first time.

Choose the Checking Research Methods

As in the research design process described in Phase 1, the first step is to identify the questions that must be answered. Then decide which methods are most appropriate to address these questions. Box 4.2 (in Chapter 4) provides guidance on these decisions. Further examples are given below.

The main checking method discussed in this chapter is focus group discussions (FGDs). FGDs are generally the quickest way to assess the reactions of a broader sample to the feeding recommendations. Other methods described previously, such as key informant or in-depth interviews and recipe trials, also can be used for checking research.

1. Focus group discussions

Focus group discussions (FGDs) are a qualitative method designed to use group dynamics and the flow of discussion to probe deeply into the images, beliefs, and concepts that people have about a

particular subject. Ideally, people become involved in the discussion and react to one another's comments. It is not a group interview but a group discussion focused on a few topics.

These guided discussions are held with small groups of people who have similar characteristics. For example, hold discussions with a group of low-income fathers, with mothers of children under two years, or with traditional healers. The discussions are led by a trained moderator who uses a question guide to introduce the topics of interest and probe for deeper discussion. Although not appropriate for documenting actual practices, this is an excellent technique for learning about attitudes and perceptions.

For checking research, FGDs are held with different representatives of the same population segments used in the earlier research or with different population groups. FGDs are an appropriate approach for the following examples:

- if one set of mothers has been participating intensively in the research, and there is a need to check TIPs results with similar households in communities that have *not* been exposed to the research;
- if TIPs were conducted among the major ethnic groups, but it is important to check for similar responses among mothers of a smaller ethnic groups that are also part of the program;
- if the TIPs recommendations require the reactions of health workers; or
- if new ideas arise during TIPs that need further clarification.

2. Other methods

Key informant interviews are another method well-suited to checking people's reactions to the research results. They are similar to the interviews discussed in Chapter 5, but usually include a smaller sample. Key informants are people felt to be knowledgeable about the topic or population of interest and influential on issues that may affect program implementation.

Individual interviews are better than FGDs when the respondents are widely dispersed or of high status, such as health officials. Also, if a subject is considered private, people often are more willing to discuss it in an individual interview rather than a group discussion.

Recipe trials also are used in checking research when mothers frequently modified suggested recipes during TIPs. In this situation, a small number of recipe trials are held to assess preparation methods and to recalculate the nutrient composition of modified recipes.

Once you have selected a method for the checking research, consult the relevant section of the manual. The rest of this chapter covers FGDs, following the steps shown in the task box below. Other methods, such as interviews and recipe trials, were discussed in Chapter 5.

TASK BOX FOR FOCUS GROUP DISCUSSIONS	
Preparation Tasks	
Design the FGD protocol and develop the research plan.	<ul style="list-style-type: none"> ■ determine remaining questions ■ choose type of participant ■ choose sites
Decide who will conduct the FGDs.	<ul style="list-style-type: none"> ■ look for experienced moderators and note-takers
Develop the question guides.	<ul style="list-style-type: none"> ■ specify the key issues and questions
Train the moderators and note-takers.	<ul style="list-style-type: none"> ■ discuss the roles of the moderator and the note-taker ■ teach discussion techniques
Implementation Tasks	
Recruit the participants.	<ul style="list-style-type: none"> ■ choose participants with similar characteristics
Conduct the FGDs.	<ul style="list-style-type: none"> ■ provide an introduction ■ guide and record the discussion ■ debrief
Analysis Tasks	
Do initial analysis in the field.	<ul style="list-style-type: none"> ■ transcribe the tapes or prepare notes ■ summarize each FGD
Sort and summarize the results.	<ul style="list-style-type: none"> ■ identify themes and trends ■ compare and contrast groups
Write a brief summary of the results.	<ul style="list-style-type: none"> ■ highlight how the results reinforce, conflict, or add to earlier findings

Prepare for the Focus Group Discussions

Design the FGD Protocol and Develop the Research Plan

As with other research methods, it is important to prepare a set of written guidelines on the objectives and how to conduct the FGDs. Some key issues are noted below, and more detailed guides on FGDs are listed in the bibliography (Debus, 1986; Dawson et al., 1993).

1. Define the research objectives and questions

In general, the checking research is conducted to obtain from TIPs additional reactions to the final recommendations. More specific objectives are developed to guide selection of sites and types of participants. Examples of specific objectives are:

- to assess the feasibility of the recommendations in geographic areas where the lifestyle or living conditions are distinct from the sites where trials were conducted; or
- to assess the feasibility of the recommendations among a minority ethnic or religious group from the same geographic areas; or
- to assess the acceptability of the recommendations among health personnel, fathers, or shopkeepers.

2. Choose the types of participants

Specify the population segments and types of people to include in the groups, in accord with the research questions. Important characteristics are listed in the protocol and are used as selection criteria. For example, selection characteristics include:

- young mothers with children in the program's age range;
- older (experienced) mothers with children in the program's age range;
- mothers who work outside the home more than six hours a day (with children in the study age range);
- mothers-in-law (with grandchildren in the study age range);
- fathers of young children;
- community health workers and/or heads of women's organizations; and
- clinic nurses (may be better to do interviews if they're in scattered locations).

Not every group is necessarily held in every site. For example, in some programs working mothers and clinic nurses are of interest in the urban areas, while mothers-in-law may be of special interest in the rural areas only.

Each FGD includes six to eight participants. Group discussions are most effective when the participants come from similar backgrounds and feel comfortable with one another. For each type of participant identified (e.g., urban mothers), plan at least two focus groups to verify results. Exercise caution when selecting the types of participants because the number of groups grows rapidly.

3. Choose the sites for the FGDs

Choose the sites according to the research objectives and the types of participants needed. Other site selection criteria are similar to those used for TIPs:

- try to represent the diversity of child feeding practices in the region;
- include low-income areas where nutrition problems are common; and
- choose sites that are typical in terms of location and access to services.

A maximum of three to four checking sites is sufficient for most programs, although the number is flexible because the total number of discussions depends on the number of segments identified and satisfaction with the FGDs as they take place. If a discussion is dominated by one person, or for some reason it is unusual, it should be repeated. This requires finding another site with similar characteristics.

4. Describe the procedures for conducting FGDs

Write a protocol that describes the steps taken for preparation, implementation, and analysis of the FGDs. These tasks are discussed in the remainder of this chapter. Plan ahead and make decisions on issues such as method of recruiting participants, scheduling of discussions, and roles of the field staff.

FGDs usually are tape-recorded, and there are two options for using the tapes. Field staff can transcribe the tapes by writing down the exact words of the entire discussion, or they can listen to the tapes and write detailed notes on the content. Although verbatim transcripts of the tapes are highly desirable, transcription is time-consuming and results in a great volume of material for analysis. If transcripts are too burdensome, extensive notes are adequate as long as note-takers do not omit important verbatim remarks that capture a thought in a memorable way.

Decide Who Will Conduct the FGDs

FGDs are an extremely valuable research method when conducted correctly, and finding skilled moderators to conduct the groups is crucial to their success. Although FGD procedures can be taught, the best focus group moderators are people with previous focus group experience, who also know and understand the target population.

It often makes sense to contract this field activity to an experienced market research firm or social science research group. If the FGDs are contracted, keep in mind the following points.

- Watch the moderator conduct a FGD to see if he or she follows cues appropriately from the respondents and identifies correctly the important issues to probe.
- Don't assume that market research firms know how to work among the populations your program serves. They need guidance. You need to review the question guides and participant recruitment criteria.

- Hold periodic debriefings with the research firm during report writing.

If skilled professionals who speak the local language are not available to serve as moderators, the best interviewers from the research team that conducted the household interviews or TIPs can take on this task. In this case, several practice focus groups are held and analyzed under the guidance of a trained moderator.

The staff carrying out the FGDs have three different roles:

- **recruiters** to locate and invite eligible participants (done by the staff conducting the FGDs or by other individuals),
- **moderators** to conduct the groups, and
- **note-takers** to list topics discussed and summarize the discussion among the group participants, assist with the transcription, and ensure that the entire discussion is noted for analysis.

Develop the Question Guides

FGD guides usually are just a listing of topics to cover and the probes or types of questions and remarks to stimulate discussion of the topic. Unlike the questions guides for interviews, the FGD guides do not detail specific questions, because the flow of discussion among participants determines the order in which topics are introduced.

Some topics to include are listed below:

- **Health status of children:** How do the participants judge health status? What are the characteristics of a healthy and unhealthy child? (Showing pictures of children may stimulate discussion.)
- **Relationship of child feeding and health status:** How are healthy children fed?
- **Explore concepts of who controls the feeding:** the child or the caretaker?
- **Explore images of foods and practices:** What is modern, traditional, etc.?
- **Reactions to specific behavior changes that were successful in TIPs (show samples of some foods or of amounts):** What do they like/not like about these ideas or practices? Would they try them? Why or why not?
- **Ideas about appropriate sources of information.**

A sample FGD question guide is included in Appendix B.9.

Train Moderators and Note-takers

In general, the training for moderators and note-takers is designed to:

- introduce the purpose and objectives of focus group discussions,
- review the results of the previous stages of research,
- review recruitment procedures,
- introduce and teach moderating and note-taking techniques, and
- provide practice in conducting FGDs and analyzing results, first in the classroom, then in nearby locales.

If the staff were involved in earlier stages of the research and received training on qualitative research and child feeding, the FGD training only emphasizes the special skills and responsibilities needed for the groups. The moderator is trained to:

- relate easily with the participants and gain their confidence and trust;
- ensure the participation of everyone in the group;
- facilitate discussion among participants by drawing out relevant opinions (see Box 7.1 on moderation techniques);

remain neutral during the discussion, without expressing an opinion verbally or through body language (e.g., by shaking the head or frowning);

- respond appropriately to the comments and probe for more information on important points;
- understand the subject matter, to ensure that important statements from the participants not contained in the guide are not overlooked for further probing;
- be flexible in the use of the question guide and introduce key topics naturally into the flow of the conversation, rather than in a preset order;
- observe and listen well, and understand not only what was said but also what was meant; and
- be sensitive to nonverbal communication.

Note-taking during FGDs is also a challenging task. Although discussions usually are tape-recorded, a note-taker is trained to:

- observe and record the group dynamics and other subtle reactions and interactions among participants;

- assist the moderator by recording background information on participants; and
- develop a system for identifying all the participants and attributing their remarks.

The moderator and the note-taker hold a debriefing session after each FGD, either transcribing the tapes or listening to them and making detailed notes. Do not assume that transcription is easy. Take time to sit with the trainees as they practice listening to tapes and recording comments and help them do this in the most efficient manner.

Moderating and note-taking skills improve with experience, so it is essential to provide opportunities for practice, first during role play exercises, then in the community. After each practice session, meet to discuss the experience and how things are to be done in the field. Discuss the results and revise the question guides to resolve any difficulties that arise.

Implementation of the Focus Group Discussions

Recruit Participants

A procedure similar to that used for in-depth household interviews is used to recruit participants in the FGDs. A random sample is inadvisable because of the need to ensure that group participants have similar characteristics. Recruiters go house to house in the selected site to find people who meet the criteria. Recruiters invite potential participants to join a group discussion, tell them when and where the discussion will be held, and leave a reminder card. This means that venue and time must be decided in advance. A recruitment sheet with background information is completed for each participant. This is helpful in finding replacements for those who do not show up. Community members can assist with recruitment and reminding people of the time and place for the FGD.

Conduct the Focus Group Discussions

The group session is held in a place where the participants will feel comfortable enough to converse candidly. It should be a place that is neutral for participants and 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 is preferred.

An FGD usually lasts one to two hours. It begins with the moderator introducing him/herself and the note-taker. 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 valuable 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, making a statement, or posing a problem to stimulate discussion. The moderator only needs to join the conversation occasionally

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.

There are a variety of techniques the moderator can use to facilitate honest responses that reflect deeper feelings than those often expressed in answer to direct questions. These are summarized in Box 7.1.

Serving a snack can break up the discussion if the moderator feels there is too much tension, or snacks can be offered at the end of the session, when informal discussion is encouraged.

New information gathered during FGDs conducted in Ghana:

- Health workers insisted that water or other liquids be given to newborns before breastfeeding,
- Discarding colostrum was a strong tradition in most areas, but in the forest zone, mothers gave colostrum because they believe it gives strength to the child,
- Fathers had important roles related to child health,
- Food vendors were willing to prepare special foods for children as long as this would be profitable.

BOX 7.1: TECHNIQUES FOR MODERATION OF FGDs

- **Asking why.** The focus group discussion is not just another way to do a survey. The moderator's job is to generate a **discussion** that will probe deeper into common child feeding practices and the perceptions and reasons behind them. For example, "Why do women generally believe they must...?"
- **Clarifying an answer.** If more information is needed after an explanation has been given by a participant, ask others for clarification. For example, "Please tell me what Tola means when she says..."
- **Substitution.** Use the words of one of the participants to help clarify the original issue. However, take care not to change what is at the heart of the topic.
- **Polling.** This technique will help enliven a discussion or turn the group's attention away from someone who may be dominating the discussion. Go around the group, asking each participant to express an opinion. But remember that the objective is to have a discussion among participants, **not** an in-depth interview with each participant. Use this to spark debate on divergent opinions.
- **Contrasting.** During the conversation, different opinions or practices may be mentioned for the same problem or situation. Try to draw out the differences without making anyone feel uncomfortable, and ask the group's opinion about these contrasting views.
- **Projection.** Use pictures or a story to present a particular situation that participants can discuss without having to use themselves as examples. For example, show photos of children and ask participants to imagine what these children's lives are like and what makes them healthy or unhealthy, or ask the group to complete a story that reflects decision-making on a relevant issue. You could describe a family situation that participants can identify with, explain a problem that the family is facing, and then ask the group to make up an ending to the story that solves the problem.
- **Concluding remarks.** At the end of the session, ask participants what they think about what was discussed and whether they have additional comments. Often, when participants see that the formal session is over, they begin to speak more frankly than they did during the session.

Analyze the Focus Group Discussions

Do Initial Analysis in the Field

As mentioned earlier, the moderator and note taker debrief after each FGD. The initial analysis involves the following steps:

- Complete the notes from the session.

- Transcribe the taped discussions. It is best to do this soon after the discussion takes place. Decide ahead of time whether verbatim transcriptions are needed or just extensive notes with a few verbatim comments inserted.
- Summarize each session. Write a brief description of the group, summarize the major points by theme or topic, and include relevant quotes to illustrate the points of view expressed. Furthermore, analysis often is easier if these summaries are put on note cards or separate sheets of paper. Note that themes are not the same as questions from the guide. One question may bring out ideas about many themes, or one theme may include responses to several questions. Some themes may be listed prior to conducting the FGDs, others will be identified during analysis, based on issues that receive a lot of attention from the groups. Examples of themes from FGD results:

In Nigeria both mothers and fathers often mentioned that a "good parent" is someone who has time to spend with the child.

In Pakistan the need for breastfeeding mothers to eat "pure foods" was stressed by FGD participants. Moderators needed to clarify what was meant by this term and why this was such an important theme.

- Make any necessary revisions to the question guide or approach to take, taking into account new issues that are raised that require further investigation.

Sort and Summarize Once the FGDs Are Completed

Once the group discussions are complete, it is time to summarize across groups and look for trends or important differences.

- Finish analyzing the transcripts for content and summarizing each theme on a separate page. Note any relevant facts about the group or the participants.
- Code the summaries of the themes using colored markers or symbols to indicate where the information is from and from what type of participant. Highlight key words or phrases.
- Make summaries that indicate the major points made on each topic and where there is consensus or difference of opinion. Remember that this is not a quantitative content analysis, and there is no need to count the number of people who expressed a particular opinion. Trends and interesting points that arise in the group are highlighted.

List special vocabulary or unusual phrases used. Leave plenty of direct quotes in the content summary.

- Pull together all of the summaries for each type of participant, such as working mothers. Summarize the similarities and differences noted within each participant category. Are there differences 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 the groups studied.

- Finally, analyze different population segments (such as regions or ethnic groups) to develop a profile of the entire population. Again, look for similarities and highlight differences only when they seem relevant to program design. See Chapter 8 for more ideas on ways to summarize and present results.

Write a Brief Summary of the Results of the Checking Research

The summary report on the checking research includes the following:

- a brief description of the methods used;
- a summary of each theme, describing the concepts and opinions expressed by different types of participants (mothers, fathers, health workers, etc.) and population segments (northern, coastal, urban, etc.); and
- comparisons with results from earlier research, such as TIPs.

Interpret the results and draw conclusions relevant to program actions and messages. For example, answer the following questions:

- Did the checking research confirm the importance of the practices and problems identified during TIPs?
- 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 were not identified previously?
- Are there any additional potential resistances to new practices?
- What do health providers and other likely "change agents" for the educational program think of the recommendations?
- What are the general, underlying lifestyle characteristics of the population that can be used to position young children feeding recommendations? What do people desire for their children? Do they hope that a child will be a well-respected member of the community? Economically independent? Strong? Able to help with farm work?

Refine the list of child feeding recommendations, based on the checking research results. Prepare a final list of the practices to be promoted, indicating where modifications are needed for different population segments. Also note the most important motivations and constraints that relate to particular recommendations, and make suggestions for planning communication strategies and program actions. Excerpts from a report on FGDs are included in the Attachment 7.1 to this chapter.

Insights from FGDs used in Senegal for checking TIPs results:

An indigenous conceptual model underlying child feeding practices was identified and helped to clarify the rationale behind adoption or rejection of TIPs recommendations. The model included three related purposes motivating certain child feeding practices:

- 1. socialization of the child to cultural norms (learning not to be greedy);*
- 2. overcoming mothers' time constraints (using less time-consuming practices or transferring feeding responsibilities to other family members); and*
- 3. meeting nutritional needs (achieving the desirable body size).*

Attachment 7.1:

SAMPLE FOCUS GROUP REPORT

(From Project for the Promotion of Improved Young Child Feeding. *Focus Group Discussions*,
National Nutrition Council: Swaziland, 1987.)

III. RESULTS FROM THE FOCUS GROUP DISCUSSIONS

Characteristics of Group Participants

Twenty groups were conducted with participants representing the different child care giving situations selected from five sites. The focus group participant characteristics as recorded at the time of recruitment are given in the table on the following page. In summary, the characteristics indicate that the type of people sought were the ones recruited. Additional characteristics of note are:

- For some, motherhood begins very early. Inexperienced mothers were as young as 14 and mothers with more than one child were as young as 19.
- All of the inexperienced mothers had some help in child care, while less than half of other mothers had assistance.
- The group with the most formal education were the inexperienced mothers, while the group with the least were the grandmothers.
- Grandmothers and general mothers take care of more children than any other group, with about half of these women having responsibility for six or more children.
- Most of the inexperienced mothers and grandmothers are at home most of the time while general mothers are away from the home a part of their day and working mothers are away at least eight hours without the child.
- Very few participants, except grandmothers, attend organized groups. Almost half of the grandmothers attend some group.
- About three-quarters of the mothers reported having taken their child for weighing.
- A high number of participants reported having radios in the homesteads.

Characteristics of Participants by Group

Group	General Mothers	Inexperienced Mothers	Working Mothers	Grandmothers	Fathers
Location	Hhelehhele, Mbekelweni, Kakhoza, Ubombo	Mbekelweni, Kakhoza, Ubombo	Mobeni, Kakhoza	Hhelehhele, Mbekelweni	Hhelehhele, Mbekelweni, Kakhoza, Ubombo
Child's age	Range: 2/3 wks–24 mo.	Range: 1 mo.–23 mo.	Range: 1 wk.–22 mo.	Range: 3 mo.–24 mo.	Range: 2 wks–60 mo.
Their age	19–26 yrs	14–25 yrs	24–36 yrs	34–72 yrs	29–54 yrs
% with assistance for children	30%	100%	N/A	25%	N/A
% with less than 2–3 years schooling	30%	0%	17%	67%	23%
No. of children in homestead	50% – 6 or more	90% only one	80% – 3 or fewer	50% – 4 or fewer	50% – 4 or fewer
Time outside home w/o children	Most gone 4–6 hours	Most at home	Most gone 8 or more	Most at home	N/A
% attending organized activities	8%	0%	8%	46%	8%
% take child weighing	78%	70%	83%	68%	N/A
% with radio	88%	100%	83%	N/A	72%
% with home garden	52%	59%	N/A	N/A	58%

N/A=Not available/applicable

- As parents look to the future there is high priority placed on economic independence and stability and on health and long life. Parents believe that the future will be better for families. Many feel they are having difficulties in managing their daily lives and that life was better in the past.
 - In general, women want to be economically independent from spouses and family, and those who work would like to be self-reliant and not dependent on their employers.
 - Fathers as well would prefer not to depend on outside employment for income.
 - Those women who said they could not manage well without their spouse/family said it is because they are financially dependent on someone else. Most working women said they have problems coping financially.
 - Most inexperienced mothers are not married but wish to be because they believe that their lives would be better if they were married. "Mane angitsatse ngihlale ekhaya kubo ngisite batali bakhe" (if only he can marry me so that I stay at his home and help his parents).
 - Many fathers felt that they would have difficulties coping without their partners; in their life, "ngingamlandza noma ngitsatse lomunye umfati" (I would fetch her back or marry another one).
 - Many women, on the other hand, said they would struggle through without their spouse/parents support, "nami ngingatizamela, kute lokwehlula umfati" (I can also try, nothing can defeat a woman).
 - Grandmothers seek economic security and spoke of a desire for government pensions or to have their children look after them.
- Asked what they would do with an unexpected large sum of money, the following points were made:
 - Most men and women, if they had money, would want to build houses and save for the future.
 - Many men said they wanted homes so that when they died they would be buried at home and not in a cemetery.
 - Women spoke of happy homes and of successfully taking care of family needs. Satisfying their children's needs figured prominently in women's desires.
 - Men said they would consult spouses about what to do with the money.
- Most parents felt that they do things differently from their parents—that these are different times—better in some ways, but generally more difficult than past times. The

exception to these are the inexperienced mothers in the company towns; those said they do everything in the same way as their parents because they follow their mothers' advice.

- The previous generation is thought to have been economically better off: people self reliant, economically independent. Nowadays, because the cost of living is high, children are raised differently, and also "we are dependent on jobs".
- The past, in general, is thought of as a healthier time: "Diseases confronting us today like whooping cough, tetanus and polio did not exist".
- Some of the major shifts people feel have occurred related to child rearing are these:
 - This generation relies more on commercial products for infant feeding: formulas, milk powders and instant baby foods, while the previous generation used cows milk, inembe, emasi and other "family foods".
 - Fathers noted that in the past only mothers were responsible for the care of young children. They also pointed out that present-day fathers are more concerned for the welfare of their children, even to the extent that they buy formulas and other foods.
 - Today, illness is treated with a combination of modern and traditional methods, a mix of paid and "free" health care. For diarrhoea and vomiting, parents specifically noted that the first referral is to the hospital whereas in the past it was the traditional healer. For some illnesses, such as a sore throat, traditional medicines such as "Kugeza lishashati" are still used.
- Appeals should be made with people's view toward a better future in mind. Traditional and "modern" views and values should be mixed, the good aspects of the previous generation's practices carried forward but altered by "modern" knowledge.
- Concern over the cost of living today and a desire for more financial independence are almost universal concerns and should be considered if any "new product/practice" is to be promoted.
- The role of fathers in child rearing, as recognized at least by themselves, should be utilized.

Parents' Aspirations for Their Children:

- The specifics about the type of life parents hope for or foresee for their children varies according to whether they live in an urban or rural environment. However, a few universal desires are:
 - that their children be healthy, live long and have luck in adulthood;
 - their children receive education and become financially independent;

- that their children comply with social norms (both Christian and Swazi) of good conduct and that they help the nation develop.
- Most parents hope their children will live in rural areas (or have strong rural ties) and follow Swazi traditions and culture for character building, "alwati lusiko lwakubo".
 - Parents feel that with rural life the child will have a better chance for economic independence, closer family ties, and be able to help the rural areas develop.
 - Some parents residing in urban areas feel that it does not matter where their children reside as long as they follow Swazi culture.
 - Working mothers and some fathers feel that it is important for their children to be able to mix modern and traditional practices/urban and rural life, and that they must be exposed to both.

Therefore:

- Appeals about child character should focus on the child being a good Swazi, a good Christian and a good citizen, decent and respectable. However, traditional culture should not be over-emphasized to the exclusion of coping with modern life.
- A good or better life for the child, helping to develop the rural homestead, seems a desire for most. This appeal would need modification only if a solely urban campaign were to be launched.

PHASE 3: BUILDING A BRIDGE FROM RESEARCH TO ACTION

*Phase 3 follows the fieldwork. This is the important phase where research results are translated into policy and programmatic action. It is not easy to build a bridge from research to action, or from researchers to program planners. But it is possible if researchers know **how to present** their findings in a form that highlights points relevant to programming, and if planners understand **how to use** the results of formative research. Chapter 8 covers the synthesis and presentation of research findings in a way that is useful for programming. Chapter 9 illustrates how to use formative research in strategy formulation for programs, with emphasis on nutrition communication programs.*

Objectives of Phase 3

- *To synthesize the results of all research steps into one useful document.*
- *To develop summary charts and examples that make it easy to interpret findings.*
- *To use research findings to prepare a set of clear and specific recommendations for programs.*
- *To develop a program strategy based on actions that are most likely to have a positive impact on child feeding and child nutrition.*
- *To develop a communications plan to promote the adoption of key child feeding practices by addressing relevant motivations and constraints.*

Chapter 8: Synthesizing and Presenting Research Results

After the research is finished, there is a wealth of results, ranging from summaries and transcripts of group discussions to tables of feeding practices tried, accepted, and rejected. What comes next? During Phase 2, results were analyzed and summarized initially in the field. During Phase 3, these summaries are synthesized and interpreted. Conclusions are drawn on the key issues:

- the ways in which current practices are contributing to undernutrition;
- the improvements that families indicated they can and will make;
- the factors that motivate or enable improvements;
- the constraints to adopting the new practices; and
- the sources of information on child feeding.

Chapter 8 provides an outline for the research report, plus suggestions of charts and other formats to organize results and illustrate concepts. It discusses how to share the research findings with planners and policy-makers who are in a position to use the information for program and resource allocation decisions.

TASK BOX FOR INTERPRETING RESEARCH RESULTS	
Synthesis	
Summarize and compare findings from all methods.	<ul style="list-style-type: none"> ■ majority opinions and practices ■ range of opinions and practices ■ reasons why
Use different chart formats to clarify and summarize.	<ul style="list-style-type: none"> ■ show patterns and trends ■ provide specific examples
Interpret the findings and develop recommendations.	<ul style="list-style-type: none"> ■ focus on program actions and priorities ■ avoid biases
Presentation of Findings	
Prepare a summary report.	<ul style="list-style-type: none"> ■ provide results needed by planners
Write an executive summary, press release, and briefing notes.	<ul style="list-style-type: none"> ■ key recommendations ■ priorities for behavior change
Arrange workshop and/or distribution.	<ul style="list-style-type: none"> ■ share information with everyone who can use it

Summarize and Compare Findings from All Methods

The first step in the final analysis and synthesis process is to review the findings from Phases 1 and 2, including the summaries of existing information and the draft reports from each method used. The purpose is to begin to think about what was learned from the entire research process. Summarize the key feeding problems and the majority opinions and practices related to them. Report examples of opinions and practices that differ from the majority to illustrate the range of responses present in the program area. Keep in mind that the **reasons why** people behave or believe as they do are as important as the practices themselves.

Findings from different methods or different population segments are often contradictory. Try to interpret contradictions by thinking about the reasons for them. People may report different feeding patterns from those they actually practice, or contrasting responses may come from groups of people who differ in some important way. Also, think about which method most likely captured the real situation. Comparing the results of different methods is called *triangulation*, and it is one way to check the validity of your conclusions. Compare your results with results from previous qualitative and quantitative studies to see if your findings support or conflict with them.

Work with a maximum of three people on final synthesis and report preparation. Report writers must be extremely familiar with the research and at least one should be a technical expert on child nutrition. Having too large a group makes it difficult to reach agreement on a single, clear view of the implications of the research.

Examples of contrasting findings from different methods:

- Household observations of children being fed diluted porridge provided more valid information than focus group discussions during which mothers claimed that thick porridge is served.
- Mothers said that high-protein foods are important for children's health, but food recalls show that these foods are given in small amounts.
- Although in focus groups, mothers did not object to the idea of adding oil to their child's food, the TIPs revealed that mothers did not like adding *cold* oil to food. This resistance was overcome during the TIPs by heating the oil.

Use Different Chart Formats to Clarify and Summarize Key Points

A wide variety of charts and graphics are used to organize, summarize, compare, and illustrate the data. This is especially important with qualitative data, because it usually is not appropriate to summarize and interpret using statistical methods. Charts, graphics, and examples help those who were not involved in the research to see the results and understand the implications. Charts and other graphics are used to provide overviews of general concepts and trends and to illustrate specific points, as discussed below¹.

1. Present an overview of general trends, practices, and beliefs using different formats.

- A *matrix* is used to link practices with perceived benefits and costs. Matrices are more informative than simple lists of practices because they provide insights into the motivations and constraints underlying those practices.
- A *diagram* of the usual sequence of practices related to different aspects of child feeding is instructional and more informative than textual descriptions. An example for the weaning process is shown in Box 8.1.
- A *taxonomy* of perceived feeding problems is used to summarize reported symptoms, causes, and actions or treatments. An example is shown in Box 8.2.
- A *decision chart* is used to outline feeding problems or conditions that affect observed behaviors. The chart shows the sequence of decisions that lead to different behaviors, depending on different conditions and outcomes. An example is shown in Box 8.3.
- Prepare similar charts or graphics for different groups and compare them. The example in Box 8.4 compares mothers' and grandmothers' beliefs about appropriate infant feeding during the first six months. Similar charts for health workers, mothers with more and less experience, or mothers from rural and urban areas can be prepared and compared.

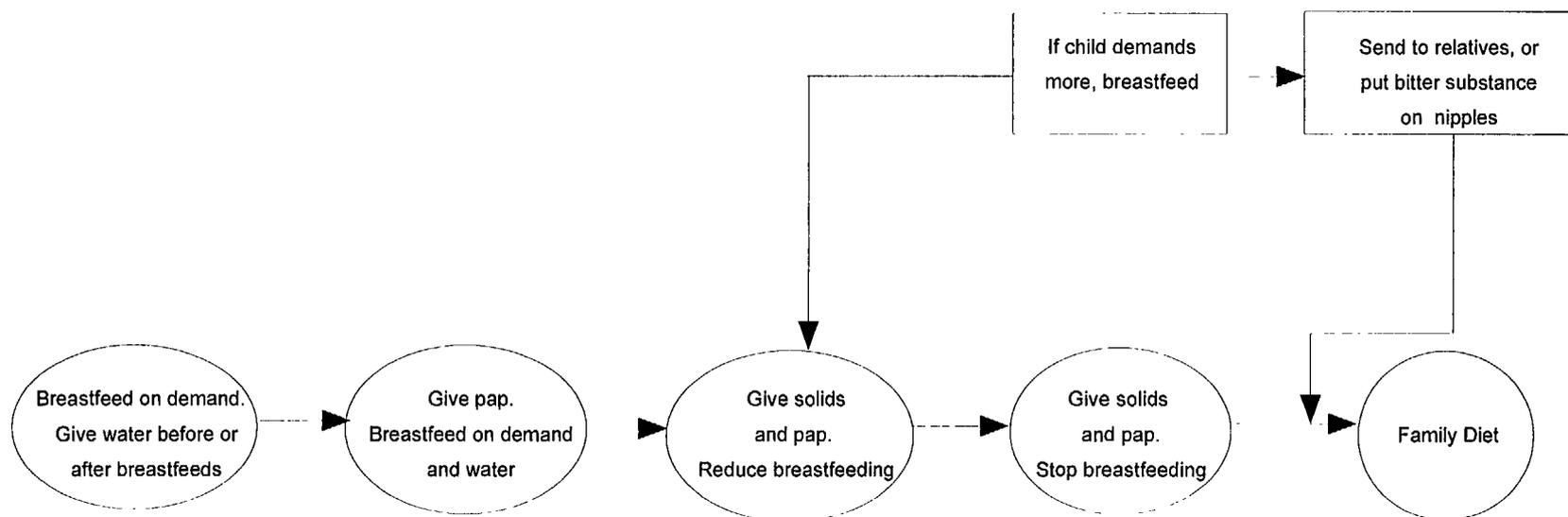
2. Use specific examples to illustrate points and help the audience understand.

- Brief *case studies* describing feeding practices and how they changed over time among one or two children illustrate transitions in feeding and high-risk age periods.
- A *table or chart* describing foods consumed by two children of the same age (one with good practices, the other with poor ones) demonstrates the variation in foods and practices among the population. This comparison also illustrates just how little some children eat and how much others in similar homes consume. An example is shown in Box 8.5

¹ Most of the examples and boxes in this chapter are drawn from *Rapid Assessment Procedures (RAP) to Improve Household Management of Diarrhea* (Herman, E. and M. Bentley, 1993).

- A *list of quotes* and key phrases about beliefs and local names for practices is also informative. Peoples' actual expressions provide clues on how to phrase effective nutrition messages.

**BOX 8.1: SAMPLE CHART ILLUSTRATING A SEQUENCE OF FEEDING DECISIONS
THE PROCESS OF WEANING AMONG THE LOWLAND POPULATION**



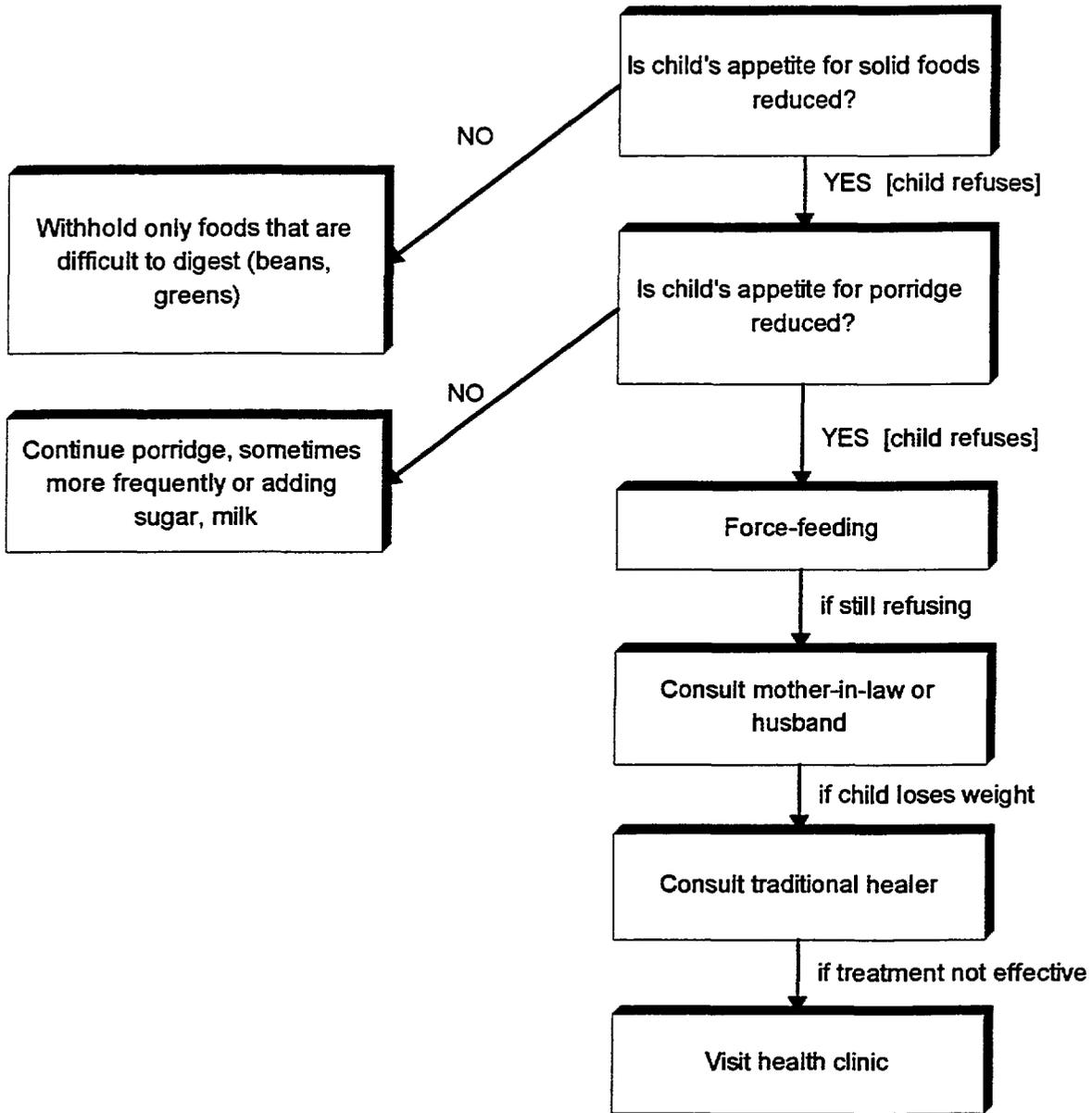
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Box 8.2: SAMPLE TAXONOMY OF MOTHERS' BELIEFS ABOUT BREASTFEEDING PROBLEMS

Breastfeeding Problem	Insufficient Breast Milk	Bad or Sour Breast Milk		Maternal Weakness from Breastfeeding
<i>Symptoms</i>	<ul style="list-style-type: none"> • child has diarrhea or vomiting or is not growing well • an ant dies when put in expressed breast milk 	<ul style="list-style-type: none"> • child refuses breast • child gets diarrhea • child cries after nursing • child vomits milk 		<ul style="list-style-type: none"> • mother feels tired and achy • mother loses weight, collarbones show
<i>Perceived Causes</i>	<ul style="list-style-type: none"> • poor diet of mother • small breasts • a curse 	<i>Emotional causes:</i> <ul style="list-style-type: none"> • mother is under much stress or becomes very angry 	<i>Other causes:</i> <ul style="list-style-type: none"> • mother breaks a taboo—e.g., walks in the sun or works hard • mother becomes sick • mother allows long intervals between breastfeeds 	<ul style="list-style-type: none"> • child is greedy • child needs more than breast milk • breastfeeding is "draining"
<i>Action or Treatment</i>	<ul style="list-style-type: none"> • mother drinks milk • incantations • herbal infusions • baby given drinks and foods other than breast milk 	<ul style="list-style-type: none"> • mother expresses and discards milk while illness or stress persist • incantations and care not to break taboos • mother stops breastfeeding • mother brings breast milk sample to specialist for examination 		<ul style="list-style-type: none"> • mother gives formula or other milk • mother reduces or stops breastfeeding

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**BOX 8.3: SAMPLE DECISION CHART OF COMPLEMENTARY FEEDING DURING DIARRHEA
BASED ON REPORTS OF MOST MOTHERS WITH CHILDREN 6-36 MONTHS**



Box 8.4

**SAMPLE CHART: COMPARISON OF MOTHERS' AND GRANDMOTHERS' BELIEFS
ABOUT THE APPROPRIATE PATTERN OF INFANT FEEDING DURING THE FIRST SIX MONTHS**

Mothers:

Food or Drink	Days			Rest of Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
	1	2	3						
Prelacteal feed	X								
Water		X	X	X	X	X	X	X	X
Breastmilk		X	X	X	X	X	X	X	X
Formula/milk					X	X	X	X	X
Porridge						X	X	X	X
Rice/beans									X

Grandmothers:

Food or Drink	Days			Rest of Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
	1	2	3						
Prelacteals	X	X	X						
Water		X	X	X	X	X	X	X	X
Breastmilk				X	X	X	X	X	X
Formula/milk									
Porridge							X	X	X
Rice/beans									

Legend:

- No shading = breastfeeding, water
- Light shading = complementary liquids and solid foods
- Dark shading = solid foods
- X = indicates when each food should be given according to the respondent's beliefs.

BOX 8.5: SAMPLE OF TWO 12-MONTH-OLD CHILDREN'S DIETS FROM SIMILAR VILLAGES AND SOCIOECONOMIC STATUS

Diet 1		Diet 2
<i>before breakfast</i>	• nothing	• ½ piece fried cassava (from evening before) • breastmilk
<i>breakfast</i>	• 1 medium glass coffee • ½ cup corn porridge with sour milk	• ¾ cup corn porridge with sour milk
<i>mid-day</i>	• ½ cup corn porridge • ¼ cup vegetable stew • sweet water-based drink	• ½ cup corn porridge • 2 small pieces of meat • ¼ cup vegetable stew
<i>afternoon</i>	• 1 biscuit	• 1 bread roll • ¼ cup porridge with stew (from an adult's plate)
<i>evening</i>	• ½ cup corn porridge • ¼ cup vegetable stew	• ¾ cup corn porridge • ½ cup vegetable stew • 2 small pieces of meat • 1 cup sour milk • breastmilk

Charts and diagrams are not ends in themselves—use them only when they make the message or interpretation clearer. Decide on the key points to make, then choose or design a format that summarizes the information. Include a sentence or two interpreting each chart for the reader. Show the draft chart to others, and ask them to explain what it says. Make changes if the meaning and message are unclear.

Completed charts are used to draw attention to important points; they also make good overhead transparencies for oral presentations. If the charts and diagrams are used for presentations, be sure that they do not contain too much information and are readable by the audience.

Interpret the Findings and Develop Recommendations

Interpreting the information means deciding what the respondents were really saying, the strength of their feelings and beliefs, and the reality of their intentions. In most countries, there are many different child nutrition and feeding problems. The purpose of the interpretation is to highlight which of those should be the program's priorities. If the research findings are to guide program planning, they must be presented in a form that answers program planning questions (see box below).

The interpretation should be as simple and direct as possible—this is not the place for detailed theoretical discussions. Pay attention to themes that are mentioned frequently, and look for

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relationships among various factors. Set the stage for the recommendations by drawing together evidence supporting your main conclusions.

Program planning questions:

- What **needs** to be changed?
- What **can** be changed?
- **How** can it be changed and **by whom**?

An easy way to handle conclusions in a report is to prepare a bulleted list of the main findings and write a highlighted conclusion at the end of each section. The conclusion statement outlines the program response to the evidence. The excerpts from research reports attached to Chapters 5, 6, and 7 are written in this way.

Be aware of personal biases and biases of the research team. Interpreting qualitative research is more subjective than quantitative, but subjective does not mean *biased*. Keep an open mind about what the results say and examine the conclusions from different points of view (e.g, policy, views of health officials, elder family members, etc.)

Base all final recommendations on the findings. The recommendations must reflect the needs and perceptions of the research participants, who will benefit from the program. The recommendations specify the actions to take, preferably listed in order of priority, within the overall program.

Examples of action-oriented recommendations:

- | | |
|------------------------|---|
| <i>Finding:</i> | <i>Mothers do not breastfeed optimally because of incorrect advice from health workers.</i> |
| <i>Recommendation:</i> | <i>Start an in-service course on breastfeeding techniques and how to counsel mothers.</i> |
| <i>Finding:</i> | <i>First foods have low energy density because they are diluted with water.</i> |
| <i>Recommendation:</i> | <i>Counsel mothers to make a mixed porridge for children by adding at least one available ingredient and reducing the proportion of water they usually use. Mothers need to know that their child will not choke on thicker porridge.</i> |

1-2

Presentation of Findings

Prepare a Summary Report

In general, it is easier to write (and later, to read) the final report if research findings are listed under topic headings and interpreted at the end of each section. Group together the findings from *all methods* on a given topic to make comparison easy. Don't write the results of each method separately.

The summary report is intended for program planners and in some cases, policy-makers. Keep the audience in mind at all times. Focus on the essential points and leave out details that do not relate directly to planning. Although a paragraph or two of background information is a good way to begin, it is not necessary to discuss the review of existing information in great detail. Simply cite the background report, mention a few key statistics to give the context, and make the report available upon request. A general report outline follows.

- **Executive summary (outlined first and written last; 3–4 pages)**
 - brief summary of the contents of the report (this may be all that some people read)
 - key recommendations and priorities for programs to improve child feeding
- **Brief summary of research methodology (1–2 pages)**
 - purpose of the research and how the selected methods achieve that goal
 - basic steps of the research methods
- **Description of population covered by the research (2–3 pages)**
 - background description of aspects such as geography, demography, ethnicity, degree of urbanization, literacy, occupations, and income
 - types of people who participated in the study, such as mothers of children under three years old, fathers, and health workers
 - lifestyle context: general outlook on life, maternal and child caring roles, hopes for children, use of health care services
- **Description of current nutrition and health situation and child feeding practices (5–7 pages)**
 - nutrition and health status of the children in the study

- summary of the practices related to breastfeeding, complementary feeding, transition to family diet, and feeding during illness, described by age and relevant subgroups within the sample
- comparison with previous studies
- interpretation of the findings, emphasizing factors that need to be addressed in the program
- **Specific description of possible practice changes, motivations, and constraints (5–7 pages)**
 - description of feeding practices, by age group, that are most possible to improve, how, and why
 - summary table of responses to recommendations tested with TIPs
- **Suggestions for a program strategy (3–5 pages)**
 - key constraints that prevent mothers, families, and communities from following optimal child feeding—include all factors: hygiene, child care, health information, lack of resources, seasonal availability of foods, etc.
- **Suggestions for a communication strategy (3–5 pages)**
 - key constraints that prevent mothers or families from following optimal child feeding, which include knowledge and attitudes and how they might be overcome
 - key phrases and ways to motivate improvements in child feeding
 - images of persons regarded as trusted sources of information on child feeding
 - access to various communication channels: interpersonal and mass media
- **Final recommendations for program design (2–3 pages)**
 - Priority feeding recommendations, messages and approaches that are suggested by the research results. This is a list against which the content of all the educational materials can be judged, to ensure that they reflect the expressed needs, attitudes, and context of the consumers of the program. Attachment 8.1 contains a sample of this part of a final report.

Arrange a Workshop and Disseminate the Report and Key Findings

Making research results accessible to those who can apply them is not simply a matter of writing an informative report. The findings, implications, and recommendations must reach key individuals and organizations in positions to act on the information. The report should be readily available to those who need it.

One way to share the research results is to hold a workshop where the findings are presented, discussed, and used as the basis for program planning. If key people have a chance to question the results and recommendations, they are more likely to feel that they helped to shape them. By involving planners in the process, they become aware of the findings and their implications. Furthermore, when planners participate in building the bridge from research to program action, they are more likely to follow-up actively.

The following steps are required to prepare for the workshop: 1) define the objectives; 2) identify participants, dates, and location for the meeting; 3) draft the agenda; 4) prepare and copy materials; and 5) invite participants and arrange all logistics. If possible, work with an experienced workshop facilitator to ensure the objectives are clear, the format is interesting, and the agenda and meeting are organized effectively.

In addition to preparing the final report and presentation transparencies, other types of materials are required for the workshop. For example, local media often are invited to the opening and closing ceremonies. A press release is drafted for their use or is submitted directly to radio, television, and news organizations. Also, if key policy makers, such as the health or agriculture minister, are invited to open and close the workshop, and prepare speeches and relevant talking points for their use.

The dissemination workshop usually requires a one- to three-day meeting, depending on local circumstances. No specific workshop agendas are provided in this manual because experience indicates that agendas vary greatly by country and program setting. The general objectives of the workshop are: 1) to present the key research methods and findings; 2) to reach consensus on the program-relevant conclusions and recommendations; and 3) to develop a list of follow-up actions to enable participants to implement the recommendations.

Implementation of the recommendations requires developing a program strategy, which is discussed in Chapter 9.

In Indonesia a workshop was held to present research findings and develop a program strategy. Some important lessons were learned:

- *The field team (researchers) should be present at the workshop because it is difficult for invitees to remember to base program decisions on the research findings and not on their **own** beliefs and experiences.*
- *The program development workshop should include recommendations for the communications strategy and other possible program components. The formative research provides many insights into people's knowledge, attitudes, behaviors, and living environment. Even if a program is not able to implement everything, it is helpful to draft a complete set of recommendations. Then identify others to implement the remaining activities or postpone them.*
- *Invite representatives of potential implementers of program activities, such as nurses or community health workers. As participants they receive important information on child feeding and contribute to the process of designing actions. Program managers are often more willing to participate if they are involved in developing the program.*
- *Invite the creative people who will design the communications strategy and materials. As participants they gain an understanding of the population to be served and the meaning of the research results.*

Attachment 8.1

SAMPLES OF FINAL RECOMMENDATIONS

(From: 1. Weaning Practices Assessment for the Extreme North Province of Cameroon—A Summary of Findings. CARE/Cameroon and The Manoff Group, 1987.

2. Weaning Practices Assessment for East Java and West Nusa Tenggara, Indonesia—A Summary of Findings. Ministry of Health Indonesia and The Manoff Group, 1986.)

Excerpts from Cameroon

VI. CONCLUSIONS

- For the majority, the recommendations concerning changes in child feeding practices tested during the household trials and the focus group discussions were acceptable to the target audience (parents of children 0 to 36 months old). Almost all the mothers who participated in the household trials were willing and able to do at least one thing to improve their child's diet in terms of quantity or quality.
- The most successful and nutritionally important recommendations to emerge from these trials appear to be:
 1. Breastfeed your child on demand; for the first three months mother's milk is the only food your baby needs.
 2. A mother must eat and drink more than usual as long as she is breastfeeding.
 3. Only give your child water to drink that comes from a CARE well.
 4. From four through nine months of age, you should give your child *bouille enrichie* every day. Only *bouillie* enriched with peanut paste or milk will calm you child's hunger and make him grow well.
 5. At ten months of age, you should give your child *boule* mashed in sauce, not just a taste of what others are eating, but an adequate amount served to the child on a separate plate.
 6. By the time a child is ten months old, he or she must be fed four meals a day in order to grow well and be strong. At least two meals must be *boule* with sauce; the other two can be *bouillie enrichie*.
 7. After being sick, your child must eat and drink more frequently than usual.
 8. Before feeding your child, you should always wash both your hands and the child's with soap and water.
- Other findings that are particularly important because of their influence on infant and child feeding practices are the following:
 1. The lack of resources to buy certain relatively inexpensive items recommended such as fruit, soap, or peanuts to enrich *bouillie*. The extreme poverty of the target population is a factor that must be kept in mind as messages are developed.
 2. Parents appear to leave many feeding decisions up to their children, e.g. they wait for an indication that their child wants to try a new food, and they

frequently let the child decide when he or she wants to eat or has had enough. Parents need to be encouraged to feel that they know what is best for their child and to take responsibility for ensuring that their child eats the right foods, in adequate quantities, every day.

3. The importance to a mother of her child being well fed and satisfied so that she can work uninterrupted was a point mentioned frequently. This benefit to the mother, as well as the health and nutrition benefits to the child, should be stressed.

Excerpts from Indonesia

VI. CONCLUSIONS

- Almost every mother who participated in the household trials was able to do something to improve her child's nutrient intake. Low family 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. to begin the child on food at four months, 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 child 7 to 10 months four times a day; three meals and something between meals;
 8. to feed children older than 10 or 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.
- 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 the 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 aspirations expressed by mothers of well and undernourished children indicate that offering some vision of the future (without raising aspirations falsely) could be an important motivator for improving feeding practices. However, these future goals need to be tailored to the culture: in Sasak NTB goals are more material and physical while in Balinese NTB 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 concerns new mothers have for the economic and time costs of new practices. It appears that although there are real 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 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 should be transferred to the "new" or modified practices advocated by the project.
8. The absence of information on child care 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 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 child care, 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.

CHAPTER 9: USING THE RESULTS FOR STRATEGIC PROGRAM PLANNING

At this stage in the process, the goal is in sight: an effective and locally appropriate program strategy to improve child feeding practices. Many view this stage as the great leap from research to program. If the research is done well and the outcomes are documented, the transition is not a leap, but a smooth ride across a strong bridge. By now, the program actions are evident; the strategy map is not guesswork. Begin by planning a broad program, including strategies that address barriers to improved practices that are not within the family's control. Then, focus on actions that can be communicated to families to help them make changes that are within their power.

The goal is to change child feeding practices. Experience indicates that individual counseling to deliver tailored information and support is required for behavior change. As mentioned earlier, an underlying assumption of this manual is that nutrition education can be effective in informing and motivating families to take action using their own resources. And to be effective, the nutrition education process itself must be shaped by those families to address their concerns and conditions. Enabling families to take action is the guiding principle of program strategy development.

Despite varying cultural and economic conditions, programs designed to improve child feeding in different countries often contain many of the same elements. This chapter presents a sample program framework for the main categories of actions. The specific program and activities, however, depend on the local setting and the results of the consultative research.

Task Box for Using the Results for Strategic Program Planning	
Develop a problem statement.	<ul style="list-style-type: none"> • Identify major conditions and practices limiting good child nutrition
Revise the program objectives.	<ul style="list-style-type: none"> • add, drop, and make more specific
Develop a strategy framework.	<ul style="list-style-type: none"> • identify main components • adapt headings in Worksheet 9.1
Select specific actions within the framework.	<ul style="list-style-type: none"> • address priority problems • consider motivations and constraints • identify resources • adapt to scope of project
Develop a communications plan.	<ul style="list-style-type: none"> • segment the population • identify key messages • select media, materials, communicators

Develop a Problem Statement

Use the research results to write a problem statement. List the key behaviors at the household level that are amenable to change, and that move families toward more optimal feeding practices; also note the household behaviors and other influences that enhance or impede the family's achievement of improved practices. Key factors such as child care, basic sanitation, quality and availability health services, and legislation are evident from the research. Identify these problems *clearly* and be realistic about what can be achieved with and without change in these areas.

For example, in Nigeria, the key problem was identified as low nutrient intakes of infants and young children. This was due to the very diluted porridge that was the preferred and most common food for this age group. Once the problem of low nutrient density was identified, several program options were considered, including enriching the porridge, or encouraging mothers to feed solid foods at a younger age.

Revise the Program Objectives

Return to the overall program objectives (not the research objectives) that were developed prior to the research (Chapter 3). Consider these objectives in light of the conclusions from the research process and the problem statements and revise them accordingly:

- Can the objectives be made more specific now, in terms of the people, problems, and practices they address?
- Have any of the objectives turned out to be low priorities that can be dropped?
- Are additional objectives needed to cover new issues that weren't anticipated at the beginning?
- Have expectations changed regarding the outcomes of the project?

As stated in Chapter 3, the effectiveness and efficiency of planning depends on having clear objectives, so a careful review at this stage is very worthwhile.

Develop a Strategy Framework

The next step is to develop a broad strategy framework that lists possible program components and activities at the institutional, community, and household levels. The framework describes a full range of activities, without restricting the plan to those activities required or feasible within the current program.

- At the *institutional level*, training programs, product development, food fortification, and policy change or legislation are possible options. Private sector actions are also considered.
- At the *community level*, child care, hygiene and sanitation, credit, or food production activities may be initiated.

- At the *household level*, the focus is likely to be on providing information and motivating improved practices within the family. There may also be supportive actions, such as food preparation demonstrations and training, to provide the skills necessary to implement recommended practices.

Examples of different program activities are shown in Box 9.1. Within this framework activities fall into five categories: legislation, training, communication, product development and marketing, and other activities. The activities listed are just a few examples of what is possible. Program planners will need to think carefully and creatively about what approaches are appropriate for their program and population.

Box 9.2 contains a strategy framework developed in Swaziland.

Box 9.1: SAMPLE STRATEGY FRAMEWORK FOR YOUNG CHILD FEEDING PROGRAMS

Legislation/Norms	Training	Communication	Products	Other
<u>Laws:</u> Code of Marketing of Breast Milk Substitutes Monitoring of marketing infant foods (breast milk substitutes and weaning foods) Improved laws/monitoring of maternity leave Food fortification and monitoring <u>Norms:</u> Norms concerning infant and young child feeding (hospital and clinic)	<u>Pre-service:</u> Curriculum changes for pre-service education of health and other professionals <u>In-service:</u> In-service training on concepts of child feeding and how to counsel mothers <u>Other:</u> Orientation for community leaders and traditional health care providers	<u>Advocacy:</u> To enhance the perceived importance of improving child feeding <u>Specific Behaviors:</u> Communicate specific behavior changes to mothers and other key audiences <u>Providers:</u> Strengthen skills in counseling and supporting community dialogue	<u>Homemade:</u> Develop recipes for improved homemade foods <u>Produced and marketed:</u> Prepackaged foods or special food ingredients A special child feeding bowl Clothes for breastfeeding in public	Hygiene and water supply Child care facilities Food production, small animals, micronutrient-rich vegetables and fruits Access to credit for mothers Maternal health services Family planning services

Use Worksheet 9.1 (a blank copy is in Appendix A) to draft a similar matrix with headings and types of activities suggested by your research findings. Think again of the program planning questions: What needs to be changed, how, and by whom? Brainstorm to come up with potential actions, then refine the list by discussing the feasibility and appropriateness of each action to your program objectives.

Fill out these worksheets during the dissemination workshop described in Chapter 8.

BOX 9.2: STRATEGY FOR IMPROVING YOUNG CHILD (0–24 MONTHS) NUTRITION IN SWAZILAND

Three major causes of undernutrition were recognized: low food availability (socioeconomic situation), morbidity, and feeding practices. This plan addresses the improvement of feeding practices only.

FACTORS	Knowledge of families	Knowledge of persons who influence families	Laws and norms	Products	Others
SPECIFIC PROBLEM	<ul style="list-style-type: none"> • Many critical practices are not known (detail in research report) • Mother's low self-esteem • Decisions made by child regarding food • Fatalism • Perception of busy-ness • Support of father 	<ul style="list-style-type: none"> • Give incorrect technical advice and/or advice not in accord with families' lives • Lack skill to tailor general advice to specific child problem • No standardization of advice 	<ul style="list-style-type: none"> • Don't permit optimal breastfeeding • Existing laws are not enforced • Lack of operational norms 	<ul style="list-style-type: none"> • Inadequate and improper use of growth monitoring 	<ul style="list-style-type: none"> • Lack of attention to work of mother and care for child
STRATEGY ELEMENTS	<p><i>Community education program using:</i></p> <ul style="list-style-type: none"> • mass media • educational agents in non-formal sector • educational agents in formal sector 	<p><i>Training and retraining professionals</i></p> <ul style="list-style-type: none"> • training of professionals doctors, nurses, social workers, nutritionists agriculture • in-service training: workers from different sectors directly responsible for infant programs, and community leaders 	<p><i>Reform/enforcement of laws and norms</i></p> <ul style="list-style-type: none"> • maternity norms • set norms relating to child feeding • laws to protect working women • enforce code on marketing of breast milk substitutes 	<p><i>Products</i></p> <ul style="list-style-type: none"> • community growth monitoring • production of a child bowl/plate • investigation of different snack foods 	<p><i>Child care</i></p> <ul style="list-style-type: none"> • community child care services

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Select Specific Actions within the Framework

Once the broad framework is outlined, define specific activities that are within the scope of your program. The activities selected for action address only the priority problems and populations, and they are adapted to your program's scope, resources, personnel, and infrastructure. Even though a particular activity may be attractive, if it does not meet these criteria, it should not be included. Following are some examples of specific activities:

Legislation: In many cases, policies and legislation are needed to support or reinforce program activities. These may relate to diverse issues such as maternity leave, infant formula marketing, and food fortification, for example.

In Swaziland the widespread availability of infant formula was interfering with optimal breastfeeding. Importance was placed on making the Code for the Marketing of Breast Milk Substitutes a law. Although project personnel per se did not undertake this work, they were able to motivate the breastfeeding promotion group to take the legislation up again with lawmakers.

In Cameroon, where project activities were focused in a small, remote area, it did not make sense for the program to tackle legislation.

Training: Whenever possible, it is useful to coordinate with existing in-service and pre-service training programs, but there may also be a need for special training efforts.

In Cameroon orientation on child feeding for community development (not health) workers was required because they were the most frequent visitors to distant villages in the extreme north.

In Swaziland in-service training for nurses was critical because they were well-respected and had been conveying misinformation on child feeding.

In Ghana orientation on child feeding for food vendors was necessary because they talked with women and could promote new foods and practices.

Communication: The channels used to reach an audience can vary tremendously. The Cameroon project used only community workers, while in Ecuador mass media (radio and television) played a major role. More details and examples of communication activities are given below.

Food product, recipe, or ingredient: The term product refers to the practice, recipe, or the single or mixed food that is being promoted. In many programs the product is actually a practice, such as frequent preparation of a more nutritious food for children. However, it also may refer to a packaged food or combination of ingredients that is bought from local vendors.

In Cameroon mothers were encouraged to make the child's bouille (porridge) thicker and add milk, egg or groundnut paste.

In Swaziland the mothers felt that young children could not swallow the family's thick corn porridge, so they were encouraged to thin it using malt flour instead of diluting the porridge

with water. (Malt flour breaks down the starch to produce a more liquid porridge without reducing the nutrient density.)

In Senegal a mixture of milk, oil, and sugar was being used nationally in nutrition rehabilitation clinics. This mixture was new to mothers, but gained a positive response from those who participated in TIPs, so it became a part of child feeding recommendations to prevent undernutrition.

Other activities: Many other aspects of child care directly affect feeding practices and, therefore, nutrition. Relevant activities to incorporate into programs include the following:

In Swaziland upgrading the child feeding knowledge of day care providers and encouraging the creation of more day care centers was an important program activity to improve child feeding and nutrition for children of working women.

In Indonesia mothers who worked at home for money were most likely to have the poorest child feeding practices. They were helped with child care and encouraged to use child care help for young children.

In The Gambia and Senegal programs were designed to reach mothers of children with diarrhea, so messages on hygienic food preparation techniques and child feeding during illness were priorities.

Finally, each activity in each component will need to be designed in detail, with input from the appropriate resource persons and program managers. To illustrate this step, the next section describes more detailed planning of the communication component.

Develop a Communications Plan

The major challenge for communication planners is how to disseminate the messages about specific behavior changes in a manner that is precise and targeted to the people in need of the message when they need it. The communications plan must specify;

- the audience;
- the product, often specific practices and foods to improve child feeding;
- the message context: motivations, resistances, tone, and authority; and
- the channels or mix of media to be used.

The Audience

Communication strategy planning begins with decisions about audience. Generally, the primary audience is mothers or principal caregivers, because they are usually the ones who prepare the food and feed the children. However, the secondary audience of influential people (fathers, children's grandmothers, and other family members or friends) are also important.

The tertiary audience is influential people who are one step removed from the family: community leaders, health care workers (traditional and nontraditional) and, possibly, vendors of food that is purchased for children, extension agents, and other relevant groups. Although some members of this audience may be trained to provide nutrition counseling, in many settings they also require specific messages to help them promote improved feeding practices.

Audience **segmentation** is also important. A segment is a portion of the audience that has different attitudes or practices and therefore needs to receive different messages. For example, mothers with newborn infants have different concerns from mothers of children in the second year of life. Age of the child makes a difference in the message. Appropriate segments are identified during the research. For child feeding, common segments are:

- pregnant women
- mothers of 0–4 month-olds
- mothers of 5–6 month-olds
- mothers of 7–11 month-olds
- mothers of 12–24 month-olds

Mothers who work outside the home are often an additional segment, as are mothers with children who are sick or recuperating from acute illness. Remember, each additional segment makes a communication plan more complicated and more costly, so include only those segments that research showed really do need different messages.

The Strategy

Develop an overall strategy that allows each audience to be reached. The strategy is based on the key practices to be changed, along with constraints and motivations related to these practices. It also specifies how to ensure that the messages reach the audience, are remembered, and lead to action.

Communication strategies in many of the programs reviewed had two complementary spheres of activities:

- messages and materials to promote specific changes in child feeding practices, and
- messages and materials to promote general principles and awareness of the importance of young child feeding.

1. Communication strategies for promoting specific changes in child feeding practices.

This strategy's activities aim to reach families with young children and focus on feasible and actionable improvements. Effective messages:

- describe specific actions, with clear, practical instructions;
- focus on a few recommendations rather than supplying too much information;
- promote behaviors that are culturally acceptable and feasible;

- suggest foods that are affordable and available;
- include motivating information and reasons for making changes; and
- acknowledge and suggest ways to overcome constraints.

The communications plan usually includes a variety of media to reach the family. However, to improve child feeding practices, the core action is counseling by a local health or community worker, who interacts directly with mothers and primary care givers. The counselors discuss recommendations tailored to a child's age and current feeding practices. Messages through other media confirm and support the direct counseling.

Following is a list of the types of materials used in various programs to promote specific behavior changes.

- **Counseling cards to help community workers tailor their messages.** Counseling cards have pictures on the front to illustrate the recommendation, and information on the back that includes questions to ask the mother and suggestions on how to counsel her to improve her current feeding practices. The set of cards can be color-coded by age group and sometimes another important factor, such as whether child is healthy, sick, or not growing properly. The worker can choose the appropriate card for a particular child, so the advice is directly relevant to the situation. Cards help workers avoid the problem of overloading a mother with too many messages, some of which may not apply.
- **Reminder sheets for the family and the health worker.** Reminder sheets are used in counseling, but remain with the family. In Cameroon reminders were mimeographed copies of the counseling card. In Indonesia a more elaborate reminder sheet, with pictures illustrating the entire framework of age-specific changes in feeding practices, was kept folded inside the growth card. In El Salvador and the Dominican Republic the reminder sheet contained all of the messages and was used to specify exactly what the mother agrees to do, without losing the goal of the more optimal practice.
- **Radio spots and cassettes on key behavior changes.** Radio spots in Swaziland and Indonesia used a dialogue format, featuring a character developed and promoted as a voice of wisdom on child feeding. She discussed specific practices for specific ages and addressed key resistances. Cassette recordings of the spots can be used as discussion-starters for group counseling or at growth-monitoring sessions.
- **Posters for health facilities or community centers.** Posters do not replace the need for counseling but can be effective in presenting specific messages to a particular audience segment. Posters were created in Ecuador for maternity hospitals, to remind women about early initiation of breastfeeding, and for health centers, to advise families to feed sick and recuperating children.
- **Food demonstrations and demonstration guides.** These effective and popular activities are the best way to provide practical information on how to prepare a new or enriched recipe. Health workers in Nigeria trained mothers to conduct cooking demonstrations at home

with small groups of friends and neighbors, teaching them how to prepare a recipe for children's porridge enriched with bean flour, palm oil, and sugar.

Messages promoting specific behavior changes need to do more than provide information. They need to motivate by presenting positive images and describing how the new practice benefits children and families. Again, research participants are the source of information on how to motivate families. For example:

- Gambian mothers often mentioned during trials of improved practices (TIPs) that in addition to child health, an advantage of feeding a child well was *noflie*, translated as a state of relaxation for the mother, because she would not have to face a crying, fussy child.
- Mothers who achieve fuller breastfeeding by feeding more frequently say the change is worth the extra time because the child sleeps longer and they can work.
- Mothers report an easier time getting their young child to eat by offering a new food.
- Mothers are often motivated to give an added food for its vitamins.

Rather than ignore the potential constraints that may prevent people from adopting a new behavior, it is more effective to address the constraint directly by mentioning it and providing alternatives to overcome the problem. Various reasons people might not be willing or able to try a particular recommendation are identified during the research, and TIPs provide information on how to overcome these resistances.

There are several effective ways to address common constraints in the communications strategy:

- Use *testimonials*.

"I thought I wouldn't be able to produce enough milk, but I could because I..."

- Use a *dialogue format*:

Mother 1 "You gave your child beans? They are too difficult for an eight-month-old to digest."

Mother 2 "Oh, Ami is doing fine. I took the skins off in the sieve and she can digest them fine."

Grandmother "My daughter, how can you give Pulo that egg with his porridge? I am expecting him to grow to be an honest man."

Mother "I was told that eggs will not spoil him, but will help him grow strong. It is our guidance that will make him an honest man."

- Include *alternatives* on the counseling card and instructions for negotiation.

During counseling always ask the mother if she is able to follow the advice offered. Can she get the ingredients required? Does she have time to follow the recommendation? Will anyone object? Tailor the recommendation depending on her answers.

2. **Communication strategies for promoting general principles and awareness of the importance of young child feeding.**

This strategy is aimed at a broader audience, including families, community leaders, health workers, policymakers, and other program managers. It includes general program messages such as the importance of child growth to health or the roles of family members in child care.

These general messages support the program by lending credibility to community counselors who provide individualized advice. They also promote awareness and acceptance of the program itself. Widespread recognition of the child feeding program increases its impact and sustainability.

There are several strategies for increasing program awareness and credibility and for promoting program messages:

- **Name, logo, and song.** Create a name, logo, and identifying symbols (including music) for your program. In Swaziland the logo was a three-legged pot that symbolizes the staple, corn porridge, and the song used a traditional musical form, the Umboloho.
- **Flip charts.** Flip charts are simple and versatile educational materials that can be used by community workers in a variety of settings and with different audiences. Their pictures and messages can address general concerns, such as the need for men to pay more attention to child feeding and to use family resources wisely.
- **Cassette tapes.** Tape recordings of dialogue and music can be effective in promoting general concepts and discussion. The tapes prepared in Swaziland were intended for use in *shibens*, gathering places of men.
- **Radio, television, and newspapers.** Documentary television programs, feature articles in the Sunday paper, and radio talk shows can enhance interest in child feeding. In Ecuador a half-hour documentary on the importance of child feeding was produced and broadcast simultaneously on all television channels. This created extensive interest in the activities that followed.
- **Community theater.** Plays that include general program messages often are an entertaining way to reach families and influential community members. When plays use community actors, the acting troupe learns the key messages and communicates them. If well done, stories also become part of the local lore, and messages are learned and shared among listeners.
- **Other media.** Other media include loudspeaker announcements in the community, and lesson plans for school children, for example.

Whatever messages and materials are chosen for the program, they must be tested with the intended audience. Phrasing of messages, preparation of creative briefs for media use, and development of draft materials require local attention. Qualitative methods such as those described earlier in this manual can be adapted for pretesting purposes. Pretesting is important! It is hoped that the consultative research guided program development in the right direction, resulting in materials and messages that are appropriate, practical, and motivating and that receive positive responses from the pretest audiences. Once messages and materials are pretested and revised, it's time to move forward with program implementation.

Implementation is the culmination of a consultative learning process that began with the review of existing information and followed a path of meaningful interaction with families and the people who care for young children. It is informative to look back and see how the depth and clarity of understanding of attitudes and practices related to child feeding has grown throughout this process. Box 9.3 provides an example of the learning process on issues related to dietary intake of vitamin A in West Sumatra, Indonesia.

BOX 9.3: SOCIAL MARKETING OF VITAMIN A-RICH FOODS: THE LEARNING PROCESS IN WEST SUMATRA, 1986–1987

(Adapted from Favin, M et al. Reducing micronutrient deficiencies:
a guide for investigators and program planners)

ISSUES	FINDINGS FROM IN-DEPTH INTERVIEWS, FOCUS GROUP DISCUSSIONS	FINDINGS FROM TIPs	MESSAGE STRATEGY	PRETESTING
Sources of vitamin A-rich foods	Lack of animal and fruit sources but green leafy vegetables (GLVs) are readily available in markets and growing wild.	No new findings.	In mass media, recommend several specific GLVs that are readily available and acceptable; in counseling materials also recommend papaya and mango.	This was well accepted, although mothers had trouble distinguishing GLVs from vegetables in general.
Main motivation to modify practices	No familiarity with vitamin A; some appreciation of vitamins as good for health and GLVs as good source of vitamins.	Consuming vitamins for better health was an effective motivation for eating more GLVs.	Improve the "image" of GLVs, especially wild greens, as an essential food for good health.	Image of vegetables as full of vitamins and good for health well-accepted but not for wild, free vegetables.
Authority figures/spokesperson	Doctors well-accepted as authorities although others have more contact with mothers.	Doctors were credible sources of advice on eating more GLVs.	On radio and posters use doctor; nurse-midwife and others can say, "Doctors say"; use Elly Kasim, popular regional singer, as spokesperson.	Elly Kasim excellent to create interest, but not credible as source of health/nutrition advice; this should come from doctor.
Frequency of consumption	Some GLVs, but not enough, commonly consumed by families.	All groups except 5- to 12-month-olds increased consumption.	Recommend eating GLVs "every day, every meal" in specific quantities for various audience segments.	This concept was not well-communicated in draft radio spots; it was decided to rely on counseling for communicating specific quantitative suggestions.

RESISTANCES				
Fear of big baby/ difficult delivery	The main reason for insufficient consumption of GLVs by pregnant women.	This resistance was easily overcome by doctor's advice.	Eating a small amount of GLVs at every meal essential for mothers' and babies' health; mothers feel healthier and stronger; doctors say will not cause big baby/difficult delivery.	Mothers readily believed the doctors' statements, a few even claiming that GLVs would make the delivery easier.
Digestibility	GLVs and oil considered hard to digest, especially for babies 5-12 months old.	This resistance was a major concern only for 5- to 12-month-olds and to some extent for wild vegetables.	Claim that GLVs cause no difficulty in digestion.	This claim given by doctor was readily believed.
Children don't like GLVs	Mothers claim this for children >12 months.	Emerged as a constraint for all children >5 months; reinforced by mothers' allowing children to choose their own food.	For 5- to 12-month-olds, agree that it takes time for babies to accept new foods but mothers must persevere because GLVs are so important.	This claim in radio spot believed.
Inability to chew GLVs	Mothers claim this for one-year-olds.	Not an issue, although new ones emerged (e.g., can't digest chilies).	Suggest adding GLVs, mashed or chopped, to child's normal food; also suggest giving without chilies or in sweet dish.	Ideas well-accepted.
Monotony/ boredom with regular consumption (every day, every meal)		Barrier for all children and for pregnant and nursing mothers.	Enhance the value of GLVs; monotony will not be an issue if you use varied recipes/creative cooking.	Monotony remained a minor concern.
Availability of GLVs		Perceived unavailability of GLVs emerged as a major barrier- could be proxy for mothers' lack of time.	Worth the effort to do a little work each day to avoid major work of caring for sick child; on radio, recommend that older children help by hunting for GLVs.	Messages did not convince some mothers that GLVs were readily available.

TRAINING

CHAPTER 10: ADAPTING THE APPROACH FOR USE IN TRAINING

In previous chapters, the manual provided information on formative research for nutrition program planning. In this chapter, the focus is on using the research process as a training tool to sensitize workers who implement nutrition improvement programs.

In the past, participation in consultative research resulted in more effective nutrition program strategies *and* had a positive impact on the interviewers themselves. Experience suggests that working closely with mothers and other caregivers to develop and test feeding recommendations increases workers' knowledge about child feeding practices. Involvement in the process also creates greater empathy and awareness of household-level constraints and enhances recognition of the need to listen to mothers when providing services and advice. We therefore recommend that exposure to and practice using consultative methods for adapting nutrition counseling messages when training all nutrition workers who work at the community level.

Types of Training Programs

Consultative research training can be offered to various levels of health, nutrition, or other personnel working on government, non-government, and community-based programs. Examples include:

- pre-service technical training in community nutrition offered at the university, graduate, and postgraduate levels;
- in-service training for health and other outreach workers who work in communities (in extension or community development, for example);
- training for community volunteers or women's groups involved in participatory assessment of the nutrition situation in their own communities; and
- short training sessions to sensitize planners or managers of nutrition programs to the needs and perspectives of program trainees.

The amount of recommended exposure to consultative research varies with the type of training being offered. In brief training programs (less than two weeks), it is not essential to include all the exploratory and checking methods discussed because trainees usually do not need to learn a wide range of research methods for their work. In these situations, training and practice with trials of

improved practices (TIPs) are recommended to influence trainees' attitudes about what families can and will do to improve child feeding, and to teach them ways to interact effectively with their clients. In longer programs, experience with additional methods and analysis are suggested.

The remainder of this chapter describes how to use the manual for in-service training of community level workers. Adaptations for other training uses are included at the end of the chapter.

Train Counselors to Promote Improved Feeding Practices

This section presents an outline for a module on teaching nutrition counseling skills to personnel who provide health, agriculture, development, or other related services at the community level. This training is suitable for workers who are not already trained in nutrition but who are responsible for helping mothers improve child feeding practices.

The activities are organized around learning to conduct trials of improved practices (TIPs). This is because the skills needed to conduct TIPs are the same as those needed on the job by a nutrition educator.

The objectives are for trainees to:

- learn about child feeding and existing nutrition messages or recommendations, and discuss possible modifications to the messages and whether they expect the messages to be successful in changing behavior;
- test recommendations in households using a counseling approach based on negotiation and asking mothers to choose the most acceptable new practices;
- become more empathetic to families' situations and the need for counseling and negotiation; and
- apply the lessons learned to improve content and techniques of their nutrition counseling.

Implementation of TIPs allows trainees to:

- identify feeding problems and appropriate solutions in their communities;
- assess motivations and constraints to improved practices;
- examine and improve their counseling skills; and
- provide supportive, follow-up action.

Box 10.1 contains an outline for a two-part, in-service training program with the fieldwork occurring between the two classroom sessions. The entire training program requires a period of about six weeks, with only eight days devoted to the classroom. The rest of the time is spent at work, gaining hands-on experience conducting TIPs and counseling because learning by doing is

more effective than listening to lectures. The course teaches that mothers benefit more when they are actively involved in the counseling process; the same is true for the trainees.

Box 10.1: Suggested Schedule for a Two-part In-service Training Program

First Session 5 days	<ul style="list-style-type: none"> ■ recommendations to improve child feeding practices ■ TIPs method ■ counseling skills
Practical Experience 4-week period	<ul style="list-style-type: none"> ■ return to work and conduct TIPs with mothers in the community ■ summarize results and lessons learned
Second Session 3 days	<ul style="list-style-type: none"> ■ discuss findings related to feeding recommendations ■ discuss findings related to counseling skills ■ apply lessons learned to daily work responsibilities

Topics and Activities for the First Session

The suggested topics and activities for the first session are summarized in Box 10.2.

1. Child feeding

Start by providing trainees with background information related to child nutrition and feeding practices, which is found in Chapter 2. Use a discussion approach to help trainees define the information needed to advise mothers effectively.

Next, discuss ideal feeding practices by age group, common feeding problems, ways to improve feeding, and motivations and constraints to changing practices. Ask trainees to work in groups to summarize the problems, motivations, and constraints for their program populations and identify the additional information required to answer these questions. Ask each group to fill in child feeding matrices for one or two age groups (use worksheets 3.1 and 3.2) and present their findings to the class.

During training it is also necessary to review the current national nutrition education messages that relate to breastfeeding and other child feeding practices. If many nutrition messages currently are being promoted, limit the review to only one aspect of child feeding, such as breastfeeding or introduction of complementary foods. Ask trainees to analyze existing messages by listing all the specific actions that must follow the messages' recommendations (see box below). If existing messages are very general, such as "feed a balanced diet," such analysis is difficult. Nonetheless, it illustrates the actions that must be taken to carry out the advice. Also discuss whether existing recommendations emphasize the most important behaviors and are specific and practical enough for mothers to follow.

Finally, ask the class to develop a list of recommendations for testing with mothers. Select among current messages or develop new ones if the current ones are not amenable to household trials. Test only those messages that require specific actions that can be tried over a few days.

Throughout this process, be sure that the trainees understand the point of the exercise—to see that messages must match needs and situations of the people who are expected to follow them.

2. Nutrition counseling skills

Trainees also need to learn about nutrition counseling. The main topics related to counseling are listed below.

- General counseling skills, such as asking open-ended questions, listening and observing, praising positive practices, checking mothers' understanding of new information, and providing supportive follow-up.
- The importance of providing specific, practical messages rather than general information on nutrition and feeding.
- The need to tailor nutritional advice—i.e., assess current feeding practices and family situation, to provide the right recommendations for a particular child and not overload the mother with advice.
- Nutritional negotiation: involving the mother in the problem-solving process, listening and responding to her concerns, and letting her make the final decision about what action to take.
- There may be various constraints to improving child feeding, not just poverty, and these must be acknowledged, regardless of whether they are based on attitudes or limited resources.
- Constraints and resistances can be overcome by presenting options and encouraging change in small, incremental steps. Use concepts and images that motivate parents to encourage them to take action.

Have the trainees practice their counseling skills through role play. Ask them to counsel each other and observe and discuss the interactions.

Behavioral analysis of the recommendation "breastfeed exclusively for six months"

- initiate breastfeeding successfully
- breastfeed frequently, day and night
- solve breastfeeding problems
- resist pressure to give water or other liquids or foods (be confident that your milk supply is adequate)
- maintain close contact with infant or express and store breastmilk for feeding when absent
- eat well and drink plenty of fluids
- seek family support

3. Trials of improved practices (TIPs)

After the preceding topics are covered, it is time to learn about TIPs. Explain that the purpose of TIPs is to test feeding recommendations and counseling skills in homes and to get feedback from the families who try the recommendations. Then provide training on the TIPs method. This training follows Chapter 6, using the three-visit protocol, with an emphasis on methods of:

- identifying child feeding problems and matching them with potential solutions (interviewing and dietary assessment);
- selecting and counseling on appropriate feeding recommendations and negotiating with a mother about what she will try (based on the counseling skills discussed above);
- allowing for the trial and follow-up; and
- filling in the forms and tabulating the results.

Discuss the initial analysis required after each visit. During training, focus on methods for understanding the motivations and constraints that affect the families' willingness to try new practices. The successes and problems encountered during counseling are discussed at length during the second training session.

Ask the trainees to help develop the question and counseling guides and forms that will be used to record information. Prepare draft guides and forms beforehand (see samples in Appendix B). Hold a brainstorming session to discuss the trainees' ideas about what information to collect, what feeding problems exist, and what recommendations can be suggested, *before* showing them the existing forms. Then incorporate these ideas into the existing forms, or develop new forms, if necessary.

Test the forms through role play in the classroom and practice interviews in a nearby community. Practice sessions are essential for in-service courses; they reinforce the training methods and messages. They are also necessary to identify and solve problems before trainees return to their work and conduct TIPs independently.

**BOX 10.2: SUGGESTED ACTIVITIES FOR THE FIRST SESSION OF AN
IN-SERVICE TRAINING PROGRAM ON NUTRITION COUNSELING**

Time frame: 5 days, including one day of practice in a community

- Discuss: what do you need to know to advise mothers effectively? What advice is being given currently?
- Reading assignment on child feeding problems, appropriate solutions, motivations and constraints to improving nutrition (Chapter 2 or other reference).
- Small group activity: Prepare summary presentations on specific aspects of child feeding.
- Fill in worksheets 3.1 and 3.2 and identify gaps in existing information.
- Discuss counseling techniques and communication approaches.
- Lectures and role plays for TIPs (see Chapter 6).
- Plan and draft question guides (include only topics relevant to the workers' job responsibilities).
- Review and revise counseling guides and recording forms.
- Plan how to conduct interviews and trials while on the job.
- Role play and practice doing TIPs in a community setting.
- Discuss pretest and necessary revisions.
- Discuss analysis: What do we want to find out?
- Discuss supervision, scheduling, and expectations for second session.

Be sure to adapt TIPs training so that it is compatible with the trainees' job responsibilities. For example:

- If growth monitoring is part of their work, the assessment portion of the initial visit can include interpretation of the child's weight gain (as is done during a growth monitoring session).
- Focus on issues related to child feeding during illness if health workers are involved in case management of childhood diseases.
- Include issues such as maternal diet during pregnancy and lactation, or food hygiene in TIPs if they are addressed routinely during the trainees' work.

During the training explore ways for trainees to conduct TIPs when they return to their posts. Draft a schedule for TIPs and initial analysis. Finally, provide instructions on how to obtain assistance and supervision during the practice period.

By the end of the first training session, trainees will have learned about common feeding problems and appropriate recommendations for solving them; practiced skills in open-ended interviewing, counseling, and negotiating for behavior change to improve nutrition; and learned how to use the question and counseling guides and data forms. They also leave with a plan for conducting TIPs, and with a clear understanding of what they are expected to do and the information they are required to bring to the second training session.

Practical Experience—Between Training Sessions

In the interval between the first and second sessions, trainees return to their jobs and conduct TIPs with at least six mothers. All tabulation and summary forms are completed (Appendix B.8) and a brief summary of the lessons learned about counseling is written.

The way TIPs are conducted between training sessions depends on trainees' usual job responsibilities. For example, if home visiting is done routinely, trainees can easily identify families with nutrition problems and visit them specifically for the trials. If trainees work mainly in clinics, initial interviews may take place in the clinic, although the second and third TIPs visits should take place in homes.

A four-week period is usually adequate to complete the six TIPs, as long as trainees get started soon after they return, when the training is still fresh in their minds. Advise trainees to begin TIPs with at least two mothers during their first week back.

Supervision is important during the practice period to discuss the results and help resolve difficulties with the method. Ideally, each trainee is visited at least once, and preferably during the first two weeks post-training. If field supervision is difficult, hold a one-day group discussion for all trainees during the practice period.

Topics and Activities for the Second Training Session

The objective of the second session is to guide trainees to an understanding of how information collected from their clients can be used to improve the services they provide. Suggestions for the second session are summarized in Box 10.3.

Trainees come to the second training session with their field notes, completed tabulation sheets (which summarize their results), and a list of lessons learned about counseling.

1. Debriefing and analysis

During the second session, the main activity is discussion of the TIPs experience. Start with a general debriefing focusing on the successes and difficulties encountered in conducting TIPs and motivating mothers to try new practices. Guide the discussions by posing some of the debriefing questions listed in the box below.

Debriefing questions:

- What happened? What was different from expected?
- What problems were encountered?
- How did mothers respond to the new style of counseling with negotiation?
- What points really motivated mothers to try new practices?
- What were the most important constraints? Why?
- How did the trainees feel? What did they like or dislike about counseling?

Analysis of the information obtained during TIPs is a new experience for most trainees. Remember to focus on issues related to provision of counseling, rather than those for planning a program strategy.

Have trainees work in groups to identify the recommendations that were well-accepted by mothers and those that were not. Then ask them to modify the nutrition recommendations and the counseling guide, based on their own results.

By comparing the results obtained in various places, trainees may find that different nutrition messages are needed for different areas of the country, or that different approaches are needed to motivate families to overcome constraints and improve feeding practices. Ask the class to identify the best ways to persuade mothers to take action in different circumstances and areas.

After the discussion, ask the class to revise the child feeding matrices (worksheets 3.1 and 3.2) that were filled in during the first session. Ask them to list the relevant motivations and constraints for the revised list of nutrition recommendations, based on the results of TIPs.

2. Applying the lessons learned

Group discussions during the second session focus on lessons learned about nutrition counseling and how to implement these lessons while providing services at the community level. Answer the following questions:

- What was learned about how to counsel mothers, and what will trainees do differently when they return to their posts?
- When is it most feasible to do counseling?
- What kind of follow-up actions are useful?
- What materials or other resources are required?

If nutrition counseling materials are being developed, ask trainees to plan prototype materials and messages based on their research findings. If new materials are not being developed, ask trainees to suggest ways to use existing education materials in combination with the TIPs counseling approach. If materials, or their use, are being modified in any way, it is advisable to involve local health education staff in the appropriate training sessions.

3. Dissemination and follow-up

Because it is usually impossible to train everyone, it is important to document and disseminate findings from the training session to others working in the field. A bulletin on the fieldwork and lessons learned is one means of communicating results to a broader audience. Other strategies are to ask trainees to hold a seminar for program planners and decision-makers (similar to but briefer than the workshop described in Chapter 8), or to prepare presentations for colleagues who did not attend the training but who may benefit from the information obtained. The recommendations and lessons learned also should be presented to members of the communities where the trainees work, followed by informal discussion.

If resources are available, plan a follow-up session six months post-training to see whether nutrition counseling has improved.

BOX 10.3: SUGGESTED ACTIVITIES FOR THE SECOND SESSION OF AN IN-SERVICE TRAINING PROGRAM

Time frame: 3 days plus 1 day for outreach seminar, if included

- Discuss what worked and what didn't.
- Presentations of each trainee's results: information obtained, usefulness of methods, unexpected findings.
- Discuss proposed revisions of counseling messages.
- Small group exercise: What were the most important lessons learned?
- Discuss how to apply these findings on the job.
- Prepare a summary report or presentation.
- Develop or modify counseling materials (optional).
- Present findings to program managers, supervisors, or colleagues.
- Prepare presentation to the community.

Other Types of Training Programs Using this Methodology

The training program described above can be adapted for use with other types of participants. Box 1.3 in Chapter 1 summarizes the relevant chapters for different types of courses. The following brief descriptions highlight issues related to two different types of training programs.

1. Pre-service training programs for community workers

Pre-service training programs cover many of the same topics and activities described earlier in this chapter, but in greater depth. Because training occurs over a longer period of time, pre-service participants benefit from more exposure to research, analysis, and program development and implementation activities. Pre-service training may emphasize program planning and improved counseling skills.

Pre-service training often takes place in facilities with direct access to libraries and other sources of information. Supplement the technical information on child feeding communicated in the curriculum with practical assignments. Ask trainees to review existing written materials or conduct key informant interviews to find out about child feeding in different areas. If time permits, have trainees conduct exploratory research such as household observations or recipe trials.

The possible uses of exploratory methods in pre-service training are summarized in Box 10.4; the protocols in previous sections of the manual can be used for training in these methods. Note that many of the skills used for interviewing and observation are also learned as part of TIPs.

BOX 10.4: PRE-SERVICE TRAINING USES OF EXPLORATORY METHODS

Method	Training Uses
In-depth Interviews	<ul style="list-style-type: none">■ developing open-ended questioning and probing skills■ understanding of context in which child feeding occurs■ interaction with community members■ qualitative data analysis
Observation	<ul style="list-style-type: none">■ observational skills■ introduction to household conditions, food preparation, and feeding techniques■ practice in recording and analyzing data
Recipe Trials	<ul style="list-style-type: none">■ skills in recipe preparation, demonstration, eliciting and recording mothers' ideas and reactions■ exposure to participatory technique■ to evaluate and modify feeding recommendations

TIPs are also recommended as the core method in pre-service training. Trainees recruit and select families, and plan and conduct each round of household visits in nearby communities. Between home visits trainees return to the classroom to analyze and discuss their findings and plan counseling and follow-up recommendations.

A suggested approach is to have trainees conduct initial interviews and dietary assessments in two homes. After the initial visits, return to the classroom to discuss the experience and give guidance on the changes to recommend during the counseling (second) visits. Conduct the counseling visits and discuss the results. Continue implementing the three-visit protocol, with classroom time in between to discuss, plan, and revise the question forms, analysis, recommendations, and follow-up. When trainees feel confident with the method, have them conduct the trials independently.

2. Training program managers to use consultative research in planning and monitoring child feeding activities, especially nutrition education programs

In this type of training, the goal is to strengthen program planning and management skills. The specific objectives are to ensure that participants understand the resources required to provide work environments that are conducive to effective nutrition counseling, and that they know how to design and manage programs that minimize barriers to effective communication.

In this type of training, program managers use TIPs to learn how to allocate time for home visits, develop appropriate counseling materials and messages, provide supportive supervision, and communicate with health workers. TIPs are also used to illustrate the need for practical and specific nutrition advice, to inspire confidence in mothers' willingness and determination to do what is best for their children, and to demonstrate a need for local adaptation of national nutrition messages and materials.

This type of training can be conducted in pre-service or in-service settings. It uses the materials provided in Chapters 4, 6, and 8. The results of TIPs are interpreted broadly, and their implications for strategic planning and policies are emphasized. The field practice is held during a single training session, rather than during the interval between two sessions.

In the contexts described above, consultative research is used primarily to improve the quality of nutrition counseling provided to families. The consultative research process energizes health workers, helps them recognize the concerns of the people they work with, and inspires them to work more closely with their communities. The skills developed are not just information-gathering, as in a survey, but those related to problem-solving, strategy-building, communication, and provision of counseling tailored to the needs of specific families.

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APPENDIX A
BLANK WORKSHEETS

- 3.1: Classification of Current Practices
- 3.2: Key Information for Assessment and Counseling Guide for TIPs
- 4.1: Planning the Scope of the Research
- 4.2: Sampling Frame for Exploratory Research
- 4.3: Sampling Frame for Trials of Improved Practices (TIPs)
- 6.1: Assessment and Counseling Guide for TIPs
- 9.1: Strategy Framework

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Worksheet 3.1: Classification of Current Practices

Age Group: _____ (Fill in one or more sheets for each age group.)

Ideal Feeding Practices: _____

CURRENT FEEDING PRACTICES	CLASSIFICATION			HOW COMMON? AMONG WHAT GROUPS?
	HELPFUL	HARMFUL	DON'T KNOW	

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WORKSHEET 3.2: Key Information for Assessment and Counseling Guide for TIPs

(Fill in one sheet for each age group. Add sheets for any population groups with major differences.)

Age Group: _____ Population Group: _____ (regional, ethnic, religious groups)

Ideal Feeding Practices: _____

CURRENT FEEDING PROBLEMS	BELIEFS, PRACTICES, AND INFLUENCES:		RECOMMENDATIONS
	MOTIVATIONS FOR CURRENT PRACTICE	CONSTRAINTS TO IMPROVING PRACTICE	

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Worksheet 4.1: Planning the Scope of the Research

A. Nutrition Problem. Nutrition problems are common among children aged _____ living in rural/semi-urban/urban or (specify) _____ areas, in the following regions zones: _____
 _____ and among the following (ethnic, religious, etc.) groups: _____

B. Population Segments. The research will focus on households with children aged _____ in _____ areas of _____ regions and those _____. (list other characteristics)

C. Population Units. The type of population that should be used in each area/segment

Segment 1 _____
 Segment 2 _____
 Segment 3 _____
 Segment 4 _____

D. Category of Participant. The research should include information from the following types of participants:

Mothers: _____
 Characteristics: _____
 Other family: _____
 Health care workers: _____
 Other: _____

E. Age Groupings. The age groupings that likely describe when local feeding patterns change are:

Age group (months)	Reason

Note: Usual age groups would be 0–5 months, 6–8, 9–11, 12–17, and 18–24 unless local feeding practices change at different times, which would result in other categories.

Worksheet 4.2: Research Plan for Exploratory Research

Participants	Methods	Population Segments			
		A.	B.	C.	D.
		Population Units 1. _____ 2. _____			
Mothers:					
Other family members:					
Health care providers:					
Other influential community members:					
Totals:					

Handwritten mark



Worksheet 6.1: Assessment and Counseling Guide for TIPs

Age Group 1: _____ (specify)

Problem # :

Recommendations:

Potential Motivations:

Problem # :

Recommendations:

Potential Motivations:

Problem # :

Recommendations:

Potential Motivations:

WORKSHEET 6.1 (continued)

Age Group __: _____ (specify)

Problem # :

Recommendations:

Potential Motivations:

Problem # :

Recommendations:

Potential Motivations:

Problem # :

Recommendations:

Potential Motivations:

15
16
17

Worksheet 9.1

STRATEGY FRAMEWORK				
Legislation/Norms	Communication	Training	Products	Other
Laws:	Advocacy:	Pre-service:	Homemade	
Norms:	Specific Behaviors:	In-service:	Produced and Marketed	
	Community Support:	Other:		

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APPENDIX B

EXAMPLES OF QUESTION GUIDES, FORMS, AND FORMATS

- B.1 Household In-depth Interview Guides**
- B.2 Observation Form**
- B.3 Recruitment Form**
- B.4 Summary Sheets for Scoring Behaviors**
- B.5 Sample Diet History**
- B.6 Recipe Trials Recording and Assessment Forms**
- B.7 Trials of Improved Practices (TIPs) Guides for a Three-visit Interview**
- B.8 TIPs Tabulation Form**
- B.9 Focus Group Discussion Guides**

Appendix B.1

**SAMPLE HOUSEHOLD IN-DEPTH INTERVIEW GUIDE
FOR EXPLORATORY RESEARCH**

(From: The Weaning Project, Department of Health Indonesia)

5.7 If the mother did not give milk immediately because she didn't want to (but she had milk) what did she give to drink/eat? (This is the prelacteal period. It may be short and possibly nothing is given.)

Had to have this period because

If yes, what food/drink was given and why?

5.8 If the mother didn't give the breast immediately because she says she didn't have milk, what did she give to eat/drink?

(INSTRUCTION: What is meant is the mother's reaction to a forced prelacteal period because she believes she doesn't have milk. In the context of this work the prelacteal period is defined by the mother not giving milk. If a wet nurse is used, this enters here.)

5.9 Does the mother breastfeed her child according to a schedule or not (every time her child wants to feed)? Explain. _____

5.10 If the mother is already giving breast milk, how does she know her child likes the breast milk? (Be careful that the mother doesn't just answer, "because my child cries", or "I give only a little because he has no appetite." Find out the mother's ideas about when the child is hungry or thirsty.) Explain. _____

5.11 Does the mother use both breasts when breastfeeding?

No, because _____

Yes, because _____

5.12 Approximately how long does the mother breastfeed during one feeding? _____ minutes.

(Note: If the mother cannot answer precisely, try to understand why she starts and stops feeding.)

Explain _____

5.13 How does the mother know that the child has received enough breast milk during one feeding? _____

5.14 Before I asked how you know that your breast milk was enough from one feeding. Now, I would like to know how you know when and why to stop breastfeeding completely (does not give breast milk again). Explain _____

When breastfeeding is stopped, is it by the mother alone or on the recommendation of other people? Explain _____

Finally, can you tell me when you decided to stop breastfeeding each of your previous children?

- > At what age?
- > Was this the same for sons and daughters?
- > Why did you wean each?
- > How did you stop/wean each?

Ask for each of her previous children. Probe to find out if the child was on an adult or restricted diet at this time.

Child	Age of completed Weaning	Method	Why weaned	Adult/ Restricted Diet
-------	--------------------------	--------	------------	------------------------

5.15 During the period when you are breastfeeding, are there any occasions on which you might stop for a short time (when giving a medicine)? Explain

5.16 During the time when the mother is breastfeeding all the time, how does she know or feel the quantity of milk she has?
_____normal/regular/enough for the needs of the child;
_____not enough _____more than enough

If not enough, what does she do? Explain also when/why she doesn't think it is enough:

What is your opinion of the milk of a wet nurse? What characteristics should she have? If more than enough, what does she do?

How does she feel about being a wet nurse?

5.17 Has the CHILD been given milk besides breast milk?

_____ no _____yes

(INSTRUCTION: If yes, complete the following matrix. Complete with the mother's answers about the type of milk, at which month it was given, before breast milk, as an addition to breast milk, as a replacement to breast milk, why was other milk used, what does she think of it and with what frequency was it given?)

Kind of Milk	At what age (months)	For what*	Why	What does she think about it	Frequency

- * Coding :
1. before breastfeeding—mother doesn't want to begin.
 2. before breastfeeding—mother says she has no milk
 3. breastfeeding but wants additional liquid.
 4. breastfeeding but wants a replacement
 5. breastfeeding but uses it as the main milk.
 6. breastfeeding but uses it as additional liquid for the solid food also given.

5.18 Enumerator what is your opinion of whether the mother is using (making) the other milk correctly and about how the mother gives the milk (look especially for bottles)?

5.19 Try to find out from the mother her interpretation of the use of the left and right breast. For example, does she have the understanding that the left breast contains food and the right drink to be given when the child is thirsty? Does she have other ideas?

B. GIVING FOODS OTHER THAN MILK

5.20 While being breastfed has _____ ever received any other foods? _____yes _____no

(1) If no, why, and on the advice of whom? _____

(2) If no, is it because it is forbidden or are you willing to give it as long as there is a good explanation of why and what food should be given?

(3) If she is willing to try, what kind of information would she want or would be important to her?

(4) From whom or by what means would she want to hear this type of information?

(5) If yes, at what age did you begin to given these? **Probe to find out when the child was given the FIRST foods—such as prelacteal foods, ritual foods, etc.—and ask about additional foods.**

(Use the national calendar or the verbatim _____.) _____days (child less than 2 months) _____ months (child older than 2 months)

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(6) Now I'd like to know something about the foods you give to _____. Let's start with the first food s/he ever ate.

- ⊗ food
- ⊗ characteristic of food—what is important (solid, refined, color, cooked...)
- ⊗ Why did you give *that* food?
- ⊗ How did you know that s/he was ready for this food? **Probe for behavioural and development cues; perceived needs; other reasons.**
- ⊗ How was this food prepared, introduced or served? **Probe for method of feeding. If foods are prechewed, ask why.**

Food	Age	Reasons for Choice of Food	Readiness Development	Comments/Cues
5.21	(1) If the mother gives other food, who advised her to do it? Explain			
	(2) If advice has been given, how did the mother follow it?			
	(3) Would the mother like to give the child more food (quantity) or another kind if she had advice about the purpose and a good type of food? Explain			
	(4) If she would like to try, what specific explanation concerning food purpose, kind, and characteristics do you feel are needed and important to change the CHILD's feeding pattern?			
	(5) According to the mother, who are the best people or what is the best way to give this explanation?			
5.22	When the mother is breastfeeding, does she usually give food before or after the breastfeeding? Why does she give it this way?			
	from her own plate? _____			
	eat alone? _____			
	on lap of mother? _____			

* Earlier, we discussed your work activities and whether _____ accompanies you when you leave the house. Now I'd like to ask some specific questions about **how** you feed _____ when you are not at home (working or other purpose).

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5.23 *In general, when you leave the house and _____ is WITH you, how do you feed him/her? How often? What foods? List where food is obtained (bought or homemade?)*

5.24 *When you leave the house but do not take _____ with you, how do you arrange his/her feeding?*

- > Do you leave food? ____ yes ____ no
- > Do you ever express breast milk? ____ yes ____ no
- > Who feeds _____?
- > Does _____ feed himself?
- > Other arrangement?

5.25 **OBSERVE: Does the mother carry child on her back most of the day? Describe how.** (slung to the side, for example.)

* Not when you are working, but at home:

5.26 When you are at home, does someone besides yourself ever feed _____?

Who?

When?

5.27 How do you decide when to feed _____? **Probe to find out whether child must demand food or express hunger before s/he is fed.**

5.28 How do you know when _____ has had enough to eat?

5.29 Do you ever force-feed _____? ____ yes ____ no

If no, ask if she has force-fed other children? ____ yes ____ no

If yes, why? _____

where? _____

when? _____

how? _____

5.30 If _____ refuses to eat—either spits, vomits, or has no appetite—what can be done in these situations?

- > Can anything be done to improve appetite?
- > If yes, what?

5.31 In general, can you tell me why some children are fussy eaters?

- > Can these children be changed?
- > If yes, how?

* So far, we've discussed what foods _____ eats, and how s/he is fed. Now let's talk about WHY some foods are given to young children, but others are not.

5.32 First, can you tell me if there are some foods that are considered unhealthy for children under 2? Fill in matrix, asking the following questions:

- What are they?
- How do you know or who told you they are unhealthy?
- What happens if these foods are eaten? (i.e. Why are they bad?)
- Does this happen for older children also?
- Both boys and girls?
- Are these foods also bad for children who are sick?

PROBE TO UNCOVER WHETHER FOODS ARE CONSIDERED UNHEALTHY ON THE BASIS OF DIGESTIBILITY, SPICINESS, OR OTHER FOOD CLASSIFICATIONS. FIND OUT IF THERE ARE OTHER FOOD TABOOS.

Unhealthy Food	Source of Information	Why/Effect	Age & Sex difference	Difference for sick
----------------	-----------------------	------------	----------------------	---------------------

5.33 What about healthy foods—are some foods considered healthy for young children?

- What are they?
- How do you know (source of information?)

- Why are they good?
- What happens when they are eaten?
- Is this the same for older children?
- Both boys and girls?
- What happens when they are eaten by sick children?

Good Food	Source of Info	Why/Effect Age & Sex differences	Differences for sick
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Appendix B.2

SAMPLE OBSERVATION FORM

(From: The Weaning Project, Department of Health, Indonesia)

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PMPA
Feeding Observation Guide #2
(one to be filled out for each visit)

Village (Desa): _____ Investigator name: _____

Mothers's name: _____ Date of Interview: _____

Family name: _____ Household visit (circle)

Ethnic group: J M B S 1 2 3 4

Notes on Breastfeeding: In the square below, put a mark each time you observe the child being breastfed. Remember to mark both boxes if the child feeds from both breasts at one feeding.

Record Number of Feeds

Example: Right Left

111 11

Notes: [Record below: pattern of feeding, (demand, scheduled, etc.), amount of time spent feeding (frequency per hour, duration); Does the child sleep while feeding?]

To be filled in:

Right Breast Left Breast

Other Observations of Child Feeding

1. Are feeding bottles observed in the house? ____Y ____N
2. Are they used for the target child (observed) ____Y ____N
3. Did the child receive other foods besides breast milk? ____Y ____N
4. If yes, what did the child receive?

5. Does child feed him/her self? ____Y ____N
6. If yes, what did the child eat?

7. If the child is feeding, is the child held by the mother during their interaction?

Handwritten notes:
15/10/09
10/10/09

OTHER NOTES:

- 1. How long did the observation last? _____
- 2. Who was present? _____
- 3. How did they treat you? _____
- 4. What is your evaluation of the interview?

Appendix B.3

SAMPLE RECRUITMENT FORM

1. The Project to Promote Improved Young Child Feeding,
National Nutrition Council, Swaziland.)

RECRUITMENT SHEET

IDENTIFICATION INFORMATION

REGION: _____

Name of area : _____ Description of area: rural: trad/remote
Name of chief: _____ not remote
Enumeration area: _____ peri-urban
(low income)
Ecological Zone _____ Urban (Mid income)
Homestead number: _____ Company Town

INTRODUCTION

The Office of the United Nations Children Fund on behalf of the Government of Swaziland is in the process of designing an education programme on family life.

The major objective of the programme is to improve the quality of life in all Swazi families.

We are here to arrange a meeting between you and people from the Office in which you will discuss aspects of family life, especially in relation to children.

We are now going to ask some questions in preparation for that meeting.

GROUP ELIGIBILITY

(Only mothers/fathers/caretakers of children equal to or less than 24 months of age)

- ___ Mother, low education (no form 3 certificate) and does not work.
- ___ Mother, first and only child (no form 3 certificate)
- ___ Mother, works outside the home without the child more than 6 hrs/day (no form 3 certificate)
- ___ Grandmother, has primary responsibility of a child equal to or less than 24 months of age whose mother lives/works away from the home. (Grandmother has no form 3 certificate.)
- ___ Father, of a child less than five years of age, i.e. less than 60 months.

QUALIFYING INFORMATION

Child's age (Equal to or less than 24 months of age—verify with clinic card)

Age in months _____
Birth date _____ Month: _____ Year: _____

IDENTITY

Head of homestead : _____
Child's name: _____
Mother's (or caretaker's name : _____
Father's name : _____

OTHER INFORMATION ABOUT ELIGIBLE PARENT (CARETAKER)

1. Religious denomination _____
2. Age : _____
3. Marital status
 - ___ single (never married)
 - ___ married (living with a man or with his parents)
 - ___ no longer married (widowed or divorced)
 - ___ if married, how many wives or bozakwenu are there?
4. ___ Do you have financial assistance in bringing up the child?
5. EDUCATION
 - ___ no formal, no adult education
 - ___ adult education only
 - ___ grade 1 & 2
 - ___ standard 1-5
 - ___ Form 1-3 (but no J.C. Certificate)
6. Number of children living with you _____ children.
7. Number of hours the mother spends outside the home without her child (either working or for another reason) on a regular basis: _____ hours outside the house/day.
8. Do you participate in any organised activities?
9. Which ones? _____
10. Do you take the child to the clinic for weighing?
___ no ___ yes
11. Which clinic?

12. When was the last time you took your child to be weighed?
(month)? _____

13. How far is the clinic?

14. Do you have a working radio at home?

15. Do you have a garden?

16. Date: _____ Day: _____
(in full) month/year

17. Time: _____

18. Reminder card

Appendix B.4

SAMPLE SUMMARY SHEETS

(These summary sheets are for the in-depth interview and observation guides in Appendix B.1 from The Weaning Project, Department of Health, Indonesia.)

GUIDE 5/6 : SUMMARY

I. BREASTFEEDING PATTERN	YES	NO
² given colostrum	—	—
² equal use of breasts: reported	—	—
² equal use of breasts: observed	—	—
² continues breastfeeding during infant illness	—	—
² feed on demand (at least 0-6 months)	—	—
² other milks <u>not</u> used as breast milk substitute	—	—
⁰ breastfeeds confidently at least during first 6 months (does not report feedings of not enough milk, too busy, or that child doesn't want)	—	—

PERFECT SCORE: 7

II. GENERAL FEEDING PATTERN

Birth	15 days	1mo	2mo	3mo	4mo	5mo	6mo	7mo	8mo
<hr/>									
prelacteal									
breastfeeding only									
breastfeeding & other milk									
breastfeeding & other food									
breastfeeding & other food & milk									
foods only									

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INSTRUCTIONS

For each phase of feeding experienced by the child, draw in a bar on the chart indicating the timing. For example: The bars represent a child who experienced a 2-day prelacteal period, an exclusive breastfeeding period of almost 2 months and then a mixed breastfeeding/food period until its current age of 8 1/2 months.

GUIDE 5/6: SUMMARY

III. FOOD DISTRIBUTION: From the food history and record of what is given now list the principal foods that are given in each category at the following intervals.

	CARBOHYDRATES	PROTEIN	VEGETABLE
1 month	bubur		
3 months	bubur, pisang		
5 months	bubur, pisang		
7 months	bubur, pisang	tahu	
9 months	nasi, pisang, krupak	tahu, tempeh	sawi
11 months	masi, krupuk	tempeh, ikan	bayam
1 yr., 3mo.			
1 yr., 6 mo.			
1 yr., 9 mo.			
2 years			

(filled out with example)

FEEDING	YES 3	SOMETIMES 2	NO 1
mother feeds child or is with child			
mother encourages child to eat when child loses interest or is distracted			
mother feeds child with appropriate small spoon			
mother has measured our food/is aware of quantity			
mother is conscious of hygiene			

PERFECT SCORE : 15

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Appendix B.5

SAMPLE DIET HISTORY

(From: Griffiths, M. et al. *Improving young child feeding during diarrhea: A guide for investigators and program managers*. Arlington, VA: PRITECH/USAID, 1988.)

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FOODS	MONTHS CHILD IS 11 MONTHS OLD																							
	BIRTH	1	2	3	4	5	6	7	8	9	10	11	1 YR.		14	15	1 1/2 YRS.			20	21	22	2 YRS.	

Adult Corn Porridge I————> o

Meat Relishes I————> o

Bottle

Cup I————I
 Spoon I————>

Plate/Bowl I————>

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Appendix B.6

RECIPE TRIALS RECORDING AND ASSESSMENT FORMS

(From: Samba, N.K. *Improving infant and young child feeding practices in the Gambia*. PRITECH/ USAID, 1992.)

RECIPE TRIAL RECORDING FORMS

FORM RT-1

Location : _____ Date : ____ / ____ / ____

NAMES OF PARTICIPANTS	AGE OF YOUNGEST CHILD (MONTHS)	USUAL FEEDING
1.		
2.		
3.		
4.		
5.		

Recipe for usual method of preparing pap:

AMOUNT OF INGREDIENTS	AMOUNT USED (LOCAL MEASURE)	AMOUNT USED (mls)
Millet: (fermented: Y/N)		
sugar		
salt		
milk		
water		
sour milk		
Size of serving		

Time began: _____ Time ended: _____

[Only record the time taken to prepare the recipe.]

Probes:

Ask why, when, how much, and how for ingredients and method, including method of fermentation, sieving, whether the solid or liquid fraction of "ogi" is used, order of adding ingredients. How do other mothers do it differently? Why?

Once pap is cooked, probe on serving size and number of meals, and how other mothers compare it with their usual pap in terms of consistency, taste, response of child, availability of ingredients, amount of time for preparation.

RECIPE TRIAL RECORDING FORM

FORM RT-2

Location: _____ Date: ____ ____/____ ____/____

Recipe No. _____

Ingredients	Amount used (local measure*)	Amount used (mls)
Millet (fermented: Y/N)		
Sugar		
Salt		
Milk		
Groundnut paste		
Groundnut powder		
Bean flour		
Vegetable flour		
Vegetable Oil		
Water		

*Specify local measure eg. spoon, plastic cup, tin cup etc.

Time began: _____ Time ended: _____
 [only record the time taken to prepare the recipe.]

Describe method of preparation:

Probe all mothers: why/why not for ingredients, amounts, methods.

Handwritten mark

Once pap is ready, probes

How much of this pap could your child consume at one meal? How many meals in a day?

Could you prepare this at home regularly? Why/why not? Would you change the recipe? How? Why?

Ask about the taste, thickness, response of the child, ease of feeding, acceptability for a sick child, availability of ingredients, time needed for preparation, willingness to prepare and feed this recipe at home and why/why not?

RECIPE TRIAL ASSESSMENT FORM

FORM RT-3

Location : _____ **Date :** ___ ___ / ___ ___ / ___ ___

Type of group : 4-6 month 7-9 month **Recipe no.** _____

Mother's name	COLOUR CODE (green (g), yellow (y) or red (r))						
	thickness of pap	taste by mother	taste by child	feed to sick	availability of items	prep time	willing to prepare
Total score							

NOTE : green =well-liked = 3 yellow = acceptable = 2 red = unacceptable =1

Handwritten mark

Appendix B.7

**TRIALS OF IMPROVED PRACTICES (TIPs)
GUIDE FOR A THREE-VISIT INTERVIEW**

(From: Dickin, K. *Trip report on qualitative research on infant feeding in Nigeria.*
Consultant report prepared for Wellstart International, 1995.)

HOUSEHOLD TRIALS: INITIAL VISIT

BACKGROUND INFORMATION:

DATE : _____ START TIME: _____

COMMUNITY _____ CODE: _____

INTERVIEWER _____ CODE: _____

CHILD'S NAME _____ I.D.: _____

Age in months _____ Birthdate: _____

Sex: _____ Mother's occupation: _____

Number of hours per week away from child: _____

Caretaker's name: _____

Relationship to child: _____

Address/compound: _____

Explain to the mother that we want to learn about her child's health and feeding.

HEALTH HISTORY

1. How is child's overall illness? Any problems? (Probe for frequent illnesses and mother's general impression of the child's health.)

2a. If possible, check the growth chart and note how well the child is growing. Also, note your own observations about whether or not the child looks _____.

3. Generally, how is the child eating? Any problems? How is the appetite?

BREASTFEEDING HISTORY

4. Is the child breastfed? _____ (Y/N)

a. If yes: Frequency? Day _____ Night _____
(estimate number of times)

On demand? day ___ night ___ (Y/N)

Until when does she plan to continue?
___ ___ (child's age in months)

b. If no: Ever breastfed? ___ (Y/N)

c. If yes: When did she stop? ___ ___ months

Why?

d. If never breastfed: Why not?

BREASTFEEDING OBSERVATION :

If mother breastfeeds during the interview, observe her and the child and make notes on breastfeeding style. For example, include points such as the following:

Does the mother seem relaxed about breastfeeding?

Does she feed from both breasts?

Does she begin the next breastfeed with the other breast?

Who initiates and ends the feeding: the mother or the child?

Does the child breastfeed frequently? For long periods?

FEEDING OBSERVATION

As part of the dietary assessment, observe any feedings that take place during the interview, noting issues such as type of food, consistency, amount served and consumed, method of feeding, and attitude of both the care-taker and the child. Make notes to supplement the 24-hour recall.

DIETARY ASSESSMENT

5. Conduct 24-hour recall for all foods and liquids (including water) other than breast milk.

Ask mother to tell you everything the child has taken by mouth in the previous day and night. Start in the morning and for each food, ask what the ingredients were, the amount and the mode of feeding (hand, cup, bottle, etc.)

Probe for snacks or pieces of fruit between meals, bites of family meals shared with the mother, foods purchased from vendors, drinks of tea, water or other liquids. Be patient and allow the mother to recall everything she can.

Hour	Food or Drink	Ingredients	Amount	Mode

6. Conduct a food frequency assessment about other foods, drinks or snacks that child commonly receives (other than those listed above). Ask the mother about foods she sometimes gives the child, but not yesterday. the idea is to learn about other foods that did not get included in the 24-hour recall, but that the child might eat at least once a week.

Probe for foods eaten only once in a while, such as when away from the house, on weekends, or just when available. Ask mother to estimate how much the child usually eats of this food, and about how often. Also ask about purchased foods and snacks.

Food/Drink	Ingredients	Amount	Times per week

Ask the questions below that apply to the child's age and diet. Probe and take detailed notes.

For all children 0–5.9 months:

7. What was the first thing given by mouth to the child after delivery? Why?

Who recommended it?

8. When was breastfeeding started?

Was colostrum given? Why or why not?

Would you be willing to start breastfeeding within one hour after birth? Why or why not?

9. What is the next new food or drink you are planning to add to the child's diet?

Why? When? How will you know the child is ready?

For all children aged 0–11.9 months, if ever breastfed:

10. Have you had any problems breastfeeding?

Probe insufficient milk, soreness, child crying, child refusing, being away from the child, etc.

What problems? [If none, skip to #11.]

What did you do to resolve these problems?

Who do you ask/where can you go for help with breastfeeding problems?

For all children aged 6–23.9 months:

11. Is there any change in the child's appetite or feeding during illness? **Probe: diarrhoea and respiratory infection.** Does the child take less, the same, or more of breast milk?

Of water and other fluids?

Of pap and soft foods?

Of solid foods?

If less, is it due to child refusing or you not offering?

Is appetite a problem? What do you do about it?

For all children

12. Where do you learn new information about child feeding? who is a good (trusted) source of information or help with child feeding problems? Why? **Probe: for VFW, TBA, CBD**

13. Do you listen to the radio? If yes, how often? What do you like to listen to? Have you heard any information about child health on radio? What messages? What did you think about it? What about television? **Same probes as for radio.**

By the end of the interview, try to carefully/indirectly find out the level of education of the mother, the number of children, and the birth order of this child (3rd, 5th, etc.)

Mother's level of Education (check one) :

None ____ Primary incomplete _____ Primary completed _____

Secondary incomplete ____ Secondary completed ____ post-sec ____

No. of children _____ Birth order of child in study _____

CLOSURE : Thank the mother for answering your questions and explain that you will return tomorrow to discuss the child's diet with her. Arrange a time to visit.

Counselling visit arranged for : _____

Time finished : ____ : ____

ANALYSIS OF DIET : (TO BE COMPLETED AFTER FIRST VISIT)

14. Analyze the dietary information and identify any feeding problems listed on the Assessment and Counselling Guide. Write a brief summary of the following aspects of the diet and indicate whether or not current feeding is adequate.

Breastfeeding practices (including frequency):

Feeding frequency: (other than breastfeeding):

Amount given:

Quality/variety:

Consistency/thickness:

15. Problems identified : ____

list numbers from Assessment and Counselling Guide)

Possible recommendations: _____

HOUSEHOLD TRIALS: COUNSELING VISIT

BACKGROUND INFORMATION:

Date: _____ / _____ / _____ Start time: _____
 d d m m y y

Community _____ Code _____

Interviewer _____ Code _____

Child's name _____ I.D. _____

Caretaker's name _____

Same person as interviewed on Visit 1 : _____ Y/N

If no, Relationship to child: _____

DISCUSSION OF DIETARY ASSESSMENT

Explain your assessment of the child's diet to the mother, remembering to praise her for any positive practices.

For example:

"Your child has / has not been receiving breast milk..."
[If receiving, note frequency and any problems.]

"In addition, your child is getting..."

_____ (milk/drinks) and

_____ (foods)."

[Note frequency, quantity, thickness for the mother.]

"Your child takes this from a bottle / cup / by hand / or from a common plate with the rest of the family, etc."

"As you have told me, your child seems to be healthy / ill in the past / frequently ill / ill today..."

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[Add any other important information the mother has mentioned. Ask if she agrees with your summary.]

Problem-solving:

[See discussion guide for ideas on how to begin talking about the child's diet and possible recommendations.]

Ask the mother if she would be willing to try something new to improve the diet for the child's health and strength.

Ask if she has any ideas—make general suggestions and try to get her to come up with some possible improvements.

Discuss the appropriate recommendations for the child's age and current feeding patterns, based on the Assessment and Counselling Guide.

On the following forms, record as much detail as possible about the mother's responses to the recommendations (how does she react, why is she willing or unwilling to try?)

Negotiate with the mother so that she chooses one new practice she would be willing to try for a few days. Explain that you will be coming back to get her opinion on the new practice.

RECOMMENDATION:

Recommendation # _____ :

Specific food options suggested :

Mother's initial response:

Willing to try? Why or why not?

Any other circumstances under which she would try the recommendations? When? What modifications?

[Insert additional sheets for as many recommendations as are planned for this counselling session.]

Ask the mother to explain to you the new practice she will try. Make sure she understands and agrees. Summarize (in her own words) what the mother has agreed to try:

Ask if she has any questions or comments (record them). Make sure that all the details of preparation are clear.

Write what she is going to try on a "Child Feeding Reminder" slip and give it to her to keep.

Arrange a date for follow-up in about 5 days (see schedule). Ask the mother when is a convenient time of day to meet her and try to arrange that she will be home when you come.

Follow-up visit arranged for: _____

Thank mother for spending time answering your questions and encourage her to really try the new practice.

Time finished : ____ : ____

HOUSEHOLD TRIALS: FOLLOW-UP VISIT

BACKGROUND INFORMATION:

Date : _____ / _____ / _____ Start time: _____
 d d m m yy

Community _____ Code _____

Interviewer _____ Code _____

Child's name _____ I.D. _____

Caretaker's name _____

Same person as interviewed on Visit 1 : _____ Y/N

If no, Relationship to child: _____

DIETARY ASSESSMENT

3.1 Begin with a 24-hour recall, following the same approach as during the first visit. Probe for all foods, beverages, and snacks consumed by the child in the previous day and night.

[Insert 24-hour recall table, as in form for initial interview.]

3.2 Analyze the dietary information and note any differences since the first visit. Is there any indication that the mother has added the new practices that were recommended? How is the adequacy of the diet now?

Breastfeeding practices (including frequency):

Feeding frequency (other than breastfeeding):

Amount given:

Quality/variety:

Consistency/thickness:

OUTCOME OF TRIAL:

Refer to summary of the agreement made with the mother during the second visit (after counselling). Using the following forms, note each practice she agreed to try, and ask the questions listed. Probe for reasons why and make detailed notes.

Fill in separate forms for each practice she agreed to try, or for what she tried instead.

Recommendation :

3.3 Has the mother tried it? ___ Y/N

3.4 If no, what are her reasons? Probe why not.

3.5 If yes, did she like it? ___ Y/N

3.6 What did she like about it?

3.7 What didn't she like about it?

3.8 How does she feel the child responded?

3.9 Did she modify the recommendation? How? Why?

3.10 Did other people say anything about it? Who? (Husband, in-laws, friends?) What did they say?

3.11 Will she continue the recommended practice? Why or why not? Will it be every day?

3.12 Would she recommend it to others? How would she convince them to try it? (in her own words?)

[Insert additional sheets as needed].

Closure: Encourage mother to continue practice and ask if she has any questions or comments. Provide counselling or information as needed. Thank her for her participation in the study.

Time finished : ____ ____ : ____ ____

Attachment B.8

SAMPLE TIPs TABULATION FORM

(From: The Weaning Project, National Nutrition Council, Swaziland.)

HOUSEHOLD TRIAL TABULATION FORM

AGE GROUP _____ COMMUNITY _____ INTERVIEWERS _____

No. interviewed: First visit _____ Second visit _____ Third visit _____

I.D.	Age	Feeding Problems	Recs Offered	Reasons/ Reactions	Recs Agreed	Tried	Outcome: Reactions/ Changes	Adopt

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Attachment B.9

SAMPLE FOCUS GROUP DISCUSSION GUIDE

(From: I. Dickin, K. *Trip report on qualitative research on infant feeding in Nigeria.*
Consultant report prepared for Wellstart International, Washington, D.C., 1995)



FGD GUIDE—MOTHERS OF CHILDREN <2 YRS

TOPIC	DISCUSSIONS/TRANSITIONS
Introduction.	Facilitator's and Observer's names
Topic of Interview.	We would like to talk to you today about your children, especially when they are young.
No right or wrong answers.	There are no right or wrong answers to any of the questions—this is not a test.
Your opinions.	We would just like to know about what you do normally and ask your opinions.
Child Health Project.	We are working on a project about child health in Nigeria.
Help other people like them.	We would like to know your experiences and thoughts to help other families. After we are finished, we will tell you more about the project.
Length of time of discussion.	The discussion will take about one hour.
Talking to one another.	As we will be discussing many things about ourselves, it will be important that we not all talk at once because we will want to hear each other so we can talk together.
Explain note-taking and tape recording.	_____ (observer's name) will be writing down some of the things we talk about so we can remember them later. Also, we would like to use a tape recorder. Does anyone object?
Confidentiality.	We are the only ones who will know your name and your baby's name and we will not use names in any reports.
Check understanding.	Do you understand what I said?
Clarification if needed.	Do you have any questions?

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TOPIC	DISCUSSION/TRANSITIONS	PROBES
Women's Introduction (warm up)	Please introduce yourselves and as you do, tell us how many children you have, the name and age of your youngest child.	- Observer should record this information for use during analysis
Motherhood (To establish emotional pulls)	As you all have young children, can you say something about how your child makes you feel?	<ul style="list-style-type: none"> - Happy, why? - Proud, why? - Tired, why? - Link to future - Aspirations
Good Mother (To establish tone)	There are many things your children do that make you happy. Now I would like to shift to you, the mother. These are some pictures of women here in Nigeria (place photos so all can see.) Which one of these women do you believe is a good mother?	<ul style="list-style-type: none"> - How can you tell? - What is it about her? - How would she care for her child? - Why are the others not good mothers?
Necessities for Children of Different Ages (To place feeding among other needs)	<p>Among us we have mothers with children of many different ages. Think of your youngest child and tell us: What was important for your baby right after birth?</p> <p>What was important for your baby during the first month?</p> <p>What about in the next months up to six months?</p>	<ul style="list-style-type: none"> - Care/ceremonies - Foods - Drinks/water/"agbo" - Breastmilk - Why? - Food, drinks - Care/ceremonies - Care/development - Food, drinks - Why started?
<u>Child Feeding Decisions</u>	<p>Some of you mentioned breastmilk as important for a baby (may have to rephrase, depends on response)</p> <p>Who has breastfed their youngest child? Why did you breastfeed/why did you prefer breastfeeding? Who has influenced your decision to breastfeed?</p>	<ul style="list-style-type: none"> - Advantages of breastfeeding - Problems with giving bottles or cow's milk - People and reasons for influence—doctor, husband, relatives, friends.

No breastfeeding	Has anyone not breastfed their baby? Why didn't you breastfeed? (or if everyone breastfed) Why might a mother not breastfeed?	<ul style="list-style-type: none"> - People and reasons influenced? Husbands? VHWs, CBDs, etc.? - Health? - Work? - Inconvenience? - Image of breastfeeding?
Use of other milks	<p>Earlier, some of you mentioned that young babies need milks other than breastmilk. Who among you is giving other milk to your youngest child?</p> <p>Why did you decide to do this?</p>	<ul style="list-style-type: none"> - Benefits of milk to child? - Which type of milk? Why? - Insufficient milk, what can be done, who do you ask? - Does cost limit use? - People and reasons influenced? Husbands? Grandmothers? VHWs, CBDs, etc.?
Pictures of women	<p>Many of you have received advice about how to feed your child. Please look at the photographs I showed you earlier.</p> <p>Which one of these women looks like she could have given you advice?</p>	<ul style="list-style-type: none"> - Why? - From your neighborhood, health center, etc.? - Modern vs. traditional views? - Why not for those not chosen?
Attitude/Images of BF and Bottle-feeding Pictures of women	<p>Please look again at the photographs. Who do you think would have breastfed their child and not used a bottle?</p> <p>Who do you think would be using a bottle?</p>	<ul style="list-style-type: none"> - Why? Why not others? - Would she give anything besides breastmilk? What? Why or why not? - Why? Why not others?
Neighborhood Woman	Which of these women might live in your neighborhood? Let's say this woman who lives in your neighborhood had a child of one month. She had been breastfeeding her baby, but now came to you for advice on what to do next. What would you recommend?	<ul style="list-style-type: none"> - Why? (probe for image of someone like themselves) - Beginning other milks, water feeds, pap? - Depends on whether child is sick or healthy?

Children's Pictures	Now please look at these three children. How have they been fed? Why?	<ul style="list-style-type: none"> - Fatness, strength - Health - Other things than milks?
Breastfeeding and bottle-feeding problems	<p>Finally, I would like to ask you if you have heard of any problems associated with breastfeeding? What problems?</p> <p>What about bottle-feeding? (probe on cow's milk)</p>	<ul style="list-style-type: none"> - Maternal weakness - Lack of milk - Nipple soreness/infection - Ability/ways to overcome? - Child illness/behavior - Nutrition - Cost - Ability/ways to overcome?
Contraceptive effects	<p>Can you get pregnant while breastfeeding? How soon after the previous birth?</p> <p>Is it good to become pregnant soon? If not, how can you avoid getting pregnant too soon?</p>	<ul style="list-style-type: none"> - Breastfeeding and menstruation? (LAM) - Is postpartum abstinence practiced? How long? - Importance of spacing? - Child's need for breastmilk? - Use of contraceptives?
Closure	<p>Recap main points discussed.</p> <p>Thank you for your time. Now do you have any questions you would like to ask? I am not sure I will be able to answer them all, but I will try. (Record all questions. Do not lecture on child feeding.)</p>	

APPENDIX C

Guidelines for the Dietary Analysis during TIPs¹

This appendix provides guidance on analysis of dietary information obtained during the dietary assessment portion of the trials of improved practices (TIPs) and the recipe trials. Use of this guide requires familiarity with nutritional science and experience calculating nutrient requirements and the composition of foods. It is intended for use by the team nutritionist.

The dietary analysis initially requires three estimates: 1) dietary requirements (for energy, protein, other nutrients); 2) the portion of these requirements being met by breastmilk consumption; and 3) the portion of these requirements that must be met through complementary foods. This information is used to identify dietary needs, and alternative foods and feeding practices that will improve consumption of energy and other nutrients.

Nutrient Requirements

To determine whether a child's diet provides adequate energy and other nutrients, refer to Table 1 for estimates of the child's nutrient requirements at different ages.

Table 1: Estimated (rounded) Energy, Protein, and Other Nutrient Requirements by Age*

Nutrient	Age in months			
	0 up to 6	6 up to 9	9 up to 12	12 to 24
energy (kcal/day)	400-550	680	830	1100
protein (g/day)	9.1	9.1	9.6	10.9
vitamin A ($\mu\text{g RE/day}$)	350	350	350	400
iodine ($\mu\text{g/day}$)	55	60	60	70
zinc (mg/day)	4.0	5.0	5.0	6.5
iron (mg/day)				
- low bioavailability	21	21	21	12
-medium bioavailability	11	11	11	6
-high bioavailability	7	7	7	4

* Derived from the International Dietary Energy Consultative Group (IDECG) for energy and from the Dietary Reference Values for the United Kingdom for all others, as cited in Brown, et. al. (1996).

¹ This appendix focuses on estimating energy intake because this is the most important calculation. The same process is used to estimate the adequacy of protein, vitamin A, iron, and other nutrient intake. References in the text may be made to issues related to other nutrients, but complete information is not given.

Estimating the Energy Contribution from Breastmilk and Other Foods

Estimates of the calories and other nutrients contributed from breastmilk at different ages are calculated next. This calculation is important because the total energy requirement minus the amount from breastmilk indicates the calories that must be obtained from non-breastmilk liquids and foods in the diet.

Estimates of energy from breastmilk are included in Table 2 for children of six months up to two years. For children under six months, this calculation is not done because it is assumed that breastmilk alone provides adequate energy for most infants as long as nursing is frequent and on demand.

Table 2: Approximate (rounded) Estimates for Energy Requirements and Energy Supplied by Breastmilk and Other Foods, by Age Group

Age Group (months)	Total Energy Requirement (kcal/day)*	Energy from Breastmilk (kcal/day)	Remainder (obtained from other foods) (kcal/day)
6 up to 9	680	400	280
9 up to 12	830	380	450
12 to 24	1100	350	750

* As noted previously, these estimates are based on energy expenditure and come from the International Dietary Energy Consultative Group. FAO/WHO/UNU (1985) uses more conservative estimates based on energy consumption. For total energy, these estimated requirements (rounded) are 800, 900, and 1200 kcal/day at 6 up to 9, 9 up to 12, and 12 to 24 months, respectively. The remaining calories from complementary foods, therefore, are 400, 520, and 850 kcal/day at 6 up to 9, 9 up to 12, and 12 to 24 months, respectively.

The breastmilk energy estimates in Table 2 represent the average consumed at different ages. They are taken from a variety of longitudinal studies that included weighed intakes (Brown et al., 1996). If children in the population are *not* breastfed frequently, the contribution of breastmilk needs to be modified. Use Table 3 as a guide.

Table 3: Estimates of Energy Consumption (kcal/d) from Breastmilk*

Nursing Frequency	Kcal contribution
Child nurses 6–8 times in 24 hours	400 kcal
Child nurses 4–6 times in 24 hours	300 kcal
Child nurses 3–4 times in 24 hours	200 kcal
Child nurses 1–3 times in 24 hours	100 kcal

*Adapted from Doloksaribu, D., M. Griffiths, and M. Zeitlin. *Rapid Assessment Tool for Dietary Adequacy: The Indonesia Precorded 24-hour Food Recall*. Jakarta: Ministry of Health, 1980.

The energy density of breastmilk is approximately 65kcal/100gm. Any food replacing breastmilk that is not at least as dense calorically will contribute to undernutrition.

Analyzing the 24-hour Recall Data

Data in Tables 1–3 are used to estimate nutrient requirements, the contribution from breastmilk (based on actual practices), and the deficit that must be filled by other foods and liquids in the young child's diet. This deficit will be the same as the estimates found in Table 2 if children are breastfed frequently (on demand). If children nurse fewer than six times per day, then the energy requirements from complementary foods must be increased accordingly (by subtracting the corrected estimate in Table 3 from the total energy requirement in Table 2).

These requirements are then compared to the estimates obtained from the 24-hour food recall. It is important to recognize that 24-hour assessments may not be representative of a child's usual intake, because young children's appetites and food consumption vary substantially from day to day. Twenty-four hour assessments are appropriate for the TIPs because only rough estimates of intake are being made in order to identify where the major dietary problems are and to assess realistic ways to improve practices. All 24-hour dietary assessments, however, should include probing, qualitative questions to evaluate whether consumption on the day being measured was typical, and if not, why and in what ways it differed from usual diet and feeding practices, as described in Chapter 6.

To assess the nutrient contribution of non-breastmilk foods, all foods and liquids consumed are converted to their nutrient values. The 24-hour recall assessment does not involve weighing of food, so the amount a child consumes is more likely to be estimated in volumes or local measures than in grams. It is important to identify standard household measures and to make sure interviewers know the volume of these measures. Information on the nutrient content of common foods, preparations, and portion sizes needs to be assembled in each country, based on local recipes and common serving utensils. In many countries, quantitative studies of dietary intake or laboratory assessment of recommended weaning foods have been conducted. These studies often provide information on the nutrient content of prepared foods. Likewise, the World Food Database and International Mini-List of the nutrient composition of local foods should be consulted.

Many of the required nutrient calculations can be done ahead of time, before analysis of the dietary assessments. There are several steps for calculating the nutrient composition of cooked foods (ready for consumption). Once again, keep in mind that the dietary assessment for TIPs is not intended to be exact, only to identify areas where a child's diet can be improved. Steps to follow are:

- **Examine the local diet.** First, data on the energy (nutrient) content of local foods are obtained from food consumption tables. Food consumption tables usually state values for 100 gram portions of raw foods. These raw foods must be adjusted for factors such as water absorption during cooking and the variety of ingredients in a recipe to determine nutrients per cooked food.

Further information on these types of calculations can be found in Cameron and Hofvander, 1983; and Mitzner, Scrimshaw, and Morgan, 1984. Common sources of data on food composition include regional food composition tables, and the World Food Database and International Mini-List. For East Africa, useful data can be found in Burgess A et al., *Community Nutrition for Eastern Africa*. Nairobi, Kenya: AMREF, 1994.

- **Identify frequently used utensils and portion sizes.** Once cooking factors have been applied, the quantity of 100 gram of food is converted to local household measures, such as serving spoons, cupfuls, etc.
- **Identify recipes, variations, and alternative foods and preparations.** If there are a variety of ways to prepare a food such as pap or porridge, the different consistencies need to be considered and their caloric density calculated for each variation. For example, there may be a pap that is served in a bottle, and other ways to prepare pap for drinking from a cup or feeding with a spoon.
- **Calculate consumption.** Once nutrient values are estimated for prepared foods in common serving sizes, calculate the energy and other key nutrients consumed by the child.
- **Categorize and rank alternative foods and recipes.** To aid the task of identifying appropriate recommendations for improving child feeding, rank foods (and recipes) by their energy density (if calories are the major problem) or their value in terms of providing other essential nutrients. (See Box C.1 at the end of this Appendix).

Balancing the Trade-offs between Energy Density, Feeding Frequency, and Food Quantity when Making Recommendations

During the analysis, all the dietary data (recall and qualitative information) are used to formulate concrete recommendations for improving intake. Deciding what to recommend requires consideration of the composition of the local diet (primarily energy density)², how often children

² These factors are the same for other nutrients: vitamin and mineral intake depends on their density per 100 grams of food (or breastmilk), the amount eaten at each feeding, and the frequency with which foods containing these micronutrients are consumed. An additional consideration for some vitamins

are fed, and the style of feeding, which often determines the amount consumed by young children.

Total energy consumed in the diet depends on three main factors:

- energy density (the amount of energy or calories per 100 grams of food).
- amount consumed at each feeding³
- frequency of feeding (including meals and snacks between meals).

The data presented in Table 4 show the trade-offs among these three factors. Clearly, a food that is low in energy density must be fed more frequently and in greater amounts than a high density food. For example, if an eight month-old child receives only porridge and breastmilk, and at each meal he only consumes about a small cupful of porridge (150 ml) with an energy density of 50 kcal/100 grams (and diluted maize porridge often has an even lower density), this same porridge (recipe and quantity) must be eaten at least four times a day, with no reduction in breastfeeding, to meet the child's requirements and avoid energy deficits.

Table 4: Examples of Amounts and Number of Servings Needed for Foods of Different Energy Densities, by Age Group

Age Group (months)	Maximum Serving Size (ml)	Number of servings	Amount (g) needed per serving, by energy density		
			50 kcal/100g	100 kcal/100g	200 kcal/100g
6 up to 9	~200	3	not possible*	130	70
		4	200	100	50
		5	160	80	40
9 up to 12	~ 250	3	not possible*	170	80
		4	250	125	60
		5	200	100	50
12 to 24	~300-350	3	not possible*	250	130
		4	not possible*	200	100
		5	300	160	80

* "Not possible" indicates that the amount of food needed per serving exceeds the estimated maximum serving size.

and minerals (e.g., vitamin A, iron, zinc) is their bioavailability. This depends on the source of the nutrient as well as the other foods consumed at the same meal. A detailed discussion of the bioavailability of different nutrients and their combination is beyond the scope of this manual.

³ This has an upper limit of about a teacup or 200 mls for 6 up to 9 month old children; about 250 ml for children 9 up to 12 months; and 300-350 ml for children 12 to 24 months of age.

For older children, who have greater energy requirements, a porridge with only 50 kcal/100 grams is even less appropriate because it is not possible for older children (more than 12 months) to consume enough calories during a reasonable number of feedings (five or fewer per day) or given realistic serving sizes (300–350 ml). On the other hand, energy-dense foods such as fried bean cakes provide many calories in just a small serving (also see Box C.1).

During the dietary assessment and analysis, it is important to assess the energy (or other nutrient) density of the child's usual diet, frequency of feeding, and total consumption. Next, identify ways that either energy density or feeding practices can be modified to increase total intake, paying attention to the qualitative data collected. Evaluate the trade-offs among modifying existing recipes (frying or adding new ingredients), encouraging additional meals, promoting snacks between meals, and offering more food at each sitting. **As a general rule**, if the usual foods consumed by young children contain fewer than 65 kcal/100 grams, give priority to practices that increase their energy density.

It is important to remember that, in reality, each child's diet usually includes breastmilk and a variety of foods of different energy densities that are eaten together at meals and snacks throughout the day. In the field, it is often impossible to obtain precise estimates of usual energy and other nutrient consumption. The dietary assessment and analysis described here is intended to produce a rough estimate of energy consumption. This estimate permits an assessment of whether energy (or other nutrient) intake appears adequate for age. If intake is not adequate, the assessment is intended to identify factors or behaviors that cause the gap and how they can be improved.

TIPs recommendations are supposed to be realistic. They may not lead to ideal or optimum nutrition, and diets often must be improved in small, incremental steps. Recommendations frequently suggested include: feeding one additional meal per day (if frequency is low); increasing the amount served to the child by two spoonfuls each meal and encouraging the child to finish it all (if amount eaten is low); or preparing more nutrient-dense foods by adding energy-rich ingredients (if energy density is low). If energy intake is adequate but variety is poor, a recommendation to feed fresh fruits and/or animal products once or twice daily can be offered.

Example of a how to Analyze a 24-hour Food Recall

Box C.1 shows an example of how the foods commonly consumed by Yoruba children in Nigeria were categorized by approximate energy density. This information is used below to determine how to improve the sample diet of a 10-month-old child who was breastfed on demand, 10 times over a 24-hour period:

Time	Food/ingredients	Amount	Estimate of Energy (kcal)
9:00 a.m.	plain maize pap	¾ cup	50
11:30 a.m.	banana	½ fruit	50
2:00 p.m.	rice and beans stew (palm oil, tomato, pepper)	½ cup 1 ladle	100 50
4:00 p.m.	boiled egg	½ egg	30
7:00 p.m.	plain maize pap akara (fried bean cake)	¾ cup 1 piece	50 100
Estimated total energy intake from foods other than breastmilk:			430

The rough calculation shows energy intake to be borderline, because a frequently breastfed child at this age needs about 450 kcal/day in addition to breastmilk (Table 3). Feeding frequency is adequate, at three meals plus two snacks a day, so the best ways to improve the diet are through gradual increases in serving sizes or increasing energy density by adding ingredients to the pap or replacing pap with a more nutritious family food such as yam or stew.

**BOX C.1: ENERGY-DENSITY CATEGORIES TO GUIDE ANALYSIS OF
24-HOUR RECALL INFORMATION IN NIGERIA**

Amount of foods that provide about 100 kcal (using estimated energy density)

Food	Weight	Local measure
Energy density = 25 to 50 kcal/100 grams		
plain pap (maize or guinea corn)	340 g	1 ½ cups*
pap with sugar	250 g	1 cup
Energy density = 50 to 100 kcal/100 grams		
pap with groundnut, soya, or bean & oil	125 g	½ cup
<i>ewedu</i> (spinach) soup without oil	130 g	½ cup
plain cooked cowpea	125 g	½ cup
<i>gbegiri</i> (bean) soup		¾ cup
mango	150 g (edible portion)	one small fruit
banana	120 g (edible portion)	one 6" fruit
fresh orange juice	250 g	1 cup
Energy density = 100 to 200 kcal/100 grams		
<i>moin-moin</i> (steamed bean cake)	60 g	
beans with oil	80 g	⅓ cup
<i>egusi</i> stew (pumpkin seeds, dried fish)	50 g	1 serving spoon
<i>okro</i> soup w/ fish	50 g	1 serving spoon
cooked beef	60 g	
egg (boiled, medium size)	75 g	1 ½ eggs
<i>ewedu</i> soup with oil and fish	60 g	
cooked rice	100 g	⅔ cup
Energy density = 200 or more kcal/100 grams		
<i>akara</i> (fried bean cake)	20 g	1 piece
fried fish	20 g	
groundnuts (roasted)	20 g	
soybean flour	30 g	⅓ cup
palm or vegetable oil	14 g	1 tablespoon

* Cup refers to 250ml. Local cups used for feeding children will need to be calibrated to allow estimates of the volumes consumed.