

PN-ACD-803

# **The Pakistan NGO Initiative Health Network**

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**Taking Charge—What Families in  
Pakistan Can Do to Improve the Health  
of Mothers and Young Children**

***Findings from Interviews and  
Trials of Improved Practices***

**MotherCare/The Manoff Group  
The Asia Foundation and Collaborating NGOs**

**September 1998**



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# Table of Contents

Acknowledgements	I
Glossary	III
List of Contributors	v
I Project Background	1
II Maternal Health Findings from Interviews and Trials of Improved Practices	2
A Summary of Findings	2
B Research Methodology	8
C Study Participants	10
D Perceptions and Practices Regarding Women's Nutrition and Health	12
1 Pregnant Women	12
2 Lactating Women	18
E Trials of Improved Practices (TIPs)	20
1 Pregnant Women	20
2 Lactating Women	23
F Major Findings on Maternal Health	26
G Recommendations and Implications for Program Design	29
III Child Health Findings from Interviews and Trials of Improved Practices	34
A Summary of Findings	34
B Research Methodology	38
C Study Participants	40
D Perceptions and Practices Regarding Child Nutrition and Care	42
E Trials of Improved Practices (TIPs)	60
F Recommendations and Implications for Program Design	95
IV Data on Communication Preferences	107
A Pregnant and Lactating Women	107
B Husbands and Mothers-in-law (MILs)	108
Annexes	
Annex A - Maternal Health TIPs Interview Summary Tables	
Annex B - Child Health TIPs Interview Summary Tables	

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In 1996, MotherCare Country Representative Judith Standley, with technical assistance from Wellstart/The Manoff Group, and in collaboration with Mark McKenna, TAF's Program Director for PNI, initiated activities to strengthen NGOs' community-based promotion of improved breastfeeding practices. These activities built on the communication strategy that had been developed as a result of qualitative research carried out by the national Breastfeeding Steering Committee in 1990. Supported by TAF, Wellstart, and The Manoff Group, Standley coordinated the work of a group of NGOs who developed and tested guidelines for breastfeeding support groups and a set of counseling cards and cassette tapes on breastfeeding with individuals and groups. Many of the NGOs established mothers' support groups. The collaborating NGOs included HANDS, BRSP, Pak-CDP, MCWAP (Sindh and Punjab), APPNA-Sehat (Punjab and NWFP), AKU, AKHS, OPD, and MDM (see NGO profiles, Annex-A).

In 1997/98, these same NGOs collaborated in formative research on infant feeding, maternal nutrition, and pregnancy-related care with the intention of informing program activities in areas beyond breastfeeding. Ms. Naveeda Khawaja, Program Coordinator for MotherCare and Resident Health Adviser to PNI, led this second phase of formative research and IEC materials and curriculum development. The first step was a literature search on maternal and child health issues undertaken by MotherCare/Manoff consultants, Dr. Fehmida Jalil and Ms. Anila Daulatzaï. Dr. Jalil (a senior researcher and leading Pakistani pediatrician), Ms. Abida Aziz (an anthropologist with vast experience in qualitative research), and Ms. Khawaja formed the core team that oversaw the research activities. They were responsible for development of the research plan, pretesting and revision of question guides, training of the NGO partners, coordination of data collection, data tabulation, data analysis, and initial report writing.

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Ms. Naveeda Khawaja  
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## Glossary

Aarq	Essence of flowers diluted in water
Amaltaas	Herbal remedy of flower petals ground with water
Baqarkhani	Bakery product
Cerelac	Local brand, ready-made, semi-solid diet including wheat, barley, oats
Chella	Ritual period of 40 days after childbirth
Choolay	Grams
Choori	Roti mashed with sugar and ghee
Dahl	Cooked dried legumes, usually lentils
Dai	Traditional Birth Attendant (TBA)
Dalya	Wheat porridge
Farex	Cereal
Firni	Sweet dish made of rice, milk and sugar
Gajreela	Sweet dish made of carrots, sugar, milk and dry nuts
Ghee	Clarified butter
Ghutti	Mixture given as ritual first food to newborns, and later to soothe infants
Gound	Tree sap (used to make panjeeri)
Gravy	Broth
Halwa	Sweet dish made of semolina, ghee and dry nuts
Imlok	Type of dried fruit
Jaleebi	Sweetmeat made from flour, sugar, food coloring and fried in ghee
Kalakand	Sweetmeat made from milk and sugar
Kheer	Sweet dish of rice, sugar and milk
Khichri	Rice and daal
Khun ki Kami	Deficiency of blood (anemia)
Lassi	Yogurt mixed with water to make a drink
Nimko	Snack made up of fried grams, lentils, potato chips, peanuts, etc
Pakoray	Deep-fried salty snack (graham flour and vegetables)
Palak	Spinach
Panjeeri	Sweet dish made of semolina, dried nuts, sugar, gound and ghee/oil
Pao	A portion, a standard measure
Paratha	Roti fried in oil/ghee
Qaawa	Green tea
Roti	Flat bread made of flour
Rusk	Dried-up bread
Saag	Spinach/mustard leaves
Salan	Curry
Saunf	Aniseed
Sheera	Thick mixture of water and sugar
Sherbat	Drink made of water with some fruity artificial flavoring
Suji	Semolina
Tandoor	Big oven where flat bread is baked
Taqat	Energy
Urq-shirin	Poppy flower extract
Yakhni	Soup

## Abbreviations

<b>AKU</b>	Aga Khan University
<b>APPNA-Sehat</b>	Association of Pakistani Physicians in North America
<b>ARI</b>	Acute Respiratory Infection
<b>BHU</b>	Basic Health Unit
<b>BRSP</b>	Balochistan Rural Support Program
<b>DIL</b>	Daughter-in-law
<b>FIL</b>	Father-in-law
<b>HANDS</b>	Health and Nutrition Development Society
<b>IDI</b>	In-depth Interview
<b>LHV</b>	Lady Health Visitor
<b>LHW</b>	Lady Health Worker
<b>MC</b>	MotherCare
<b>MCH</b>	Maternal and Child Health
<b>MCWAP</b>	Maternity and Child Welfare Association of Pakistan
<b>MDM</b>	Medicine du Monde
<b>MIL</b>	Mother-in-law
<b>NGO</b>	Nongovernmental Organization
<b>NWFP</b>	North West Frontier Province
<b>OPD</b>	Organization for Participatory Development
<b>ORS</b>	Oral Rehydration Salts
<b>Pak-CDP</b>	Pakistan Community Development Program
<b>PNI</b>	Pakistan NGO Initiative
<b>SIL</b>	Sister-in-law
<b>SSS</b>	Sugar-salt solution
<b>TAF</b>	The Asia Foundation
<b>TBA</b>	Traditional Birth Attendant
<b>TIPs</b>	Trials of Improved Practices
<b>USAID</b>	U S Agency for International Development

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Medicine du Monde (MDM)  
Organization for Participatory Development (OPD)  
Pakistan Community Development Program (Pak-CDP)  
U S Agency for International Development (USAID)

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# I Project Background

The Pakistan NGO Initiative (PNI), launched in 1995, is a USAID-funded project implemented through The Asia Foundation (TAF). The project was designed to strengthen NGO capacity to work with local communities to access and deliver improved social sector services, with emphasis on maternal health, child survival, female education, and family planning. Technical assistance in health is provided by cooperating agencies MotherCare/The Manoff Group, BASICS, and Wellstart International's Expanded Promotion of Breastfeeding Program (EPB).

In December 1995, an initial dialogue with a select group of NGO partners representing all provinces revealed a demand for low-literacy health education material to promote breastfeeding. With technical assistance from Wellstart and The Manoff Group, the NGO workers developed, pretested, and revised educational and counseling cards and cassette tapes, as well as a community-based health and nutrition curriculum. Women's support groups were established at the community level to accommodate the needs of breastfeeding women, pregnant women, and mothers of babies over six months, engaging local women in dialogue and action to strengthen their knowledge and ability to promote and practice positive health and nutrition behaviors.

At a PNI planning meeting held in December 1996, the need was expressed for more formative research in the areas of infant nutrition and feeding during illness and recovery, maternal nutrition, and prenatal care in order to develop more educational and counseling materials. Partner NGOs have been integral to conducting this formative research in preparation for the development of a second series of counseling cards and revision of several chapters of the curriculum.

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## **II. Maternal Health: Findings from Interviews and Trials of Improved Practices**

### **A Summary of Findings**

With maternal mortality at 270 per 100,000 births in 1998 (Pakistan Demographic and Health Survey) and 105 infant deaths per 1000 live births in 1996 (Pakistan Integrated Household Survey, 1996-7), improvements in maternal health and nutrition can contribute significantly to the well-being of current and future generations in Pakistan. The aim of this research was to find ways to improve the health-related behavior of pregnant and lactating women, their families, and health care providers, so that their actions can help reduce preventable deaths of mothers and young children.

The research targeted pregnant women and lactating mothers with a child currently under five months of age. Trials of improved practices (TIPs) were conducted with 32 pregnant women and 46 lactating women to determine what behaviors would be acceptable and feasible for mothers and families. In addition, in-depth interviews were conducted with the main influencers of women's health decision-making: mothers-in-law, husbands, lady health volunteers (LHVs), doctors, lady health workers (LHWs), and dais (traditional birth attendants). A total of 188 interviews and trials were conducted between November and December, 1997. All provinces in Pakistan were represented. Samples were drawn from urban and rural areas, although participants were predominately rural. The sample of women, husbands, and mothers-in-law (MILs) were low income and have the same level of literacy as the low-income population of Pakistan.

All those interviewed considered pregnancy a vulnerable time in which pregnant women need special care. The minimal prenatal care that women currently receive does not fully meet their needs. Family members and pregnant women themselves are unaware of many actions they can take to protect mothers' and babies' health. Many women believe they are healthy and consider it normal to be weak, tired, and have other unpleasant symptoms during pregnancy and lactation. Family members reinforce these views. Pregnant women only see doctors when they believe that they are truly ill.

The pregnant women interviewed all felt a good diet is important during pregnancy, a belief shared by their families. They add foods like milk and fruit to their diets but don't eat larger-than-normal quantities of food. They are unaware that women need more food during pregnancy. While health care providers know about these increased needs, this information is not reaching the women or their families. When women are aware of the need to eat well, their ability to do so is impeded by their inability to control food purchasing and intra-household distribution of food. In addition, many women are concerned about gaining too much weight, as this might

result in a big baby and a dangerous delivery

A gap exists between what health care providers know about prenatal care and what women know. Most pregnant women do not get tetanus immunizations and iron pills, even though they are available and families claim to be willing to get them. There is confusion about the correct dosage of iron pills, and inaccurate information is disseminated by all levels of care providers on when and how to take iron supplements.

Pregnant women and their families recognize danger signs but don't understand the causes, levels of severity, or treatments for their problems. As a result, women delay treatment and often suffer unnecessarily. The preference to deliver at home compounds some problems, because the dais' lack of hygiene contributes to sepsis. Unsanitary practices seem to go unnoticed by families attending the birth.

The lactating women interviewed universally breastfeed and continue to do so for two years. Despite this, however, the majority of these women do not follow optimum practices. Most don't initiate breastfeeding during the first hour or even the first day, all give prelacteal feeds, and most supplement breastmilk with water and sometimes other milks and semi-solid foods before six months. Mothers' concern about having insufficient milk is usually addressed by doctors prescribing other milks. Lactating women also don't know about the increased caloric and fluid demands of lactation. They may eat milk, lassi, eggs, or meat, but do not increase their intake and consume on average a little more than half of their caloric needs.

The trials of improved practices (TIPs) that were part of this research offered pregnant women recommended behaviors that addressed their need for more calories, a greater variety of foods, and iron pills. Once the women learned that they needed to eat more, they were able to increase the amount of food they ate. They received the support of MILs and husbands, who purchase the foods. Families, despite their low income, were able to purchase more food, fruits in season, and meat or eggs on an occasional basis. Many women who had skipped meals and were not eating snacks, were able to increase their number of meals to three and the average number of snacks to three. Within the week that they tried out the advice, their symptoms of weakness, dizziness, and breathlessness abated. New practices that women did not want to follow included increasing their caloric intake by eating every two hours, adding ghee to foods, and eating while cooking.

Almost all of the women in the sample have heard of anemia, but most do not treat it properly, relying on foods alone to relieve the symptoms, rather than taking iron tablets. Iron tablets are available from a number of sources, many of them free. The majority of women weren't taking them even though they had symptoms of anemia that they recognized. Once clearly directed during the trials to take iron tablets, the number of women who took them increased four-fold. Families seem to prefer to purchase tablets at the bazaar with a prescription. However, a minority made the effort to get them free from government health workers or facilities.

Complaints of side effects from iron tablets were rare

To address the main problem that lactating women were not eating or drinking enough, the 46 women were given alternative behaviors to improve their diets. Women were able to increase their food intake by increasing the variety of foods and the number and size of meals and snacks they ate. The women frequently increased the number of roti they ate. After following these suggestions, the women immediately felt better and reported that their milk supply increased. All liked the recommendation to increase their fluid intake as well. Water was a popular addition, because it is available and free. They drank before each breastfeeding and felt this also contributed to an increased milk supply. Despite all the positive improvements, most lactating women still did not reach their caloric requirements.

Many of the problems identified for pregnant and lactating women resulted from lack of understanding about these problems. Once empowered with information, the women found many of the suggested behavior changes acceptable and easy to implement. They had the support of their families, who were concerned about the health of both the woman and the child. Although the women were all from low-income families, almost all recommendations seemed to be within the means of the families. While health care providers tended to know more about the ideal behaviors, they often were not effective educators, or they promoted actions in a way that families did not understand clearly.

Based on the in-depth interviews and the TIPs, the following final recommendations can be made

*All pregnant women need to increase their food intake*

- This includes increasing the amount of food, the variety of foods, and the frequency of meals and snacks. (The overall caloric value of the foods also needs to be increased by eating more calorically-dense foods. This concept has yet to be tested.)
- They should eat three meals and three snacks each day and include a variety of foods.

*Pregnant women should get at least three prenatal check-ups during pregnancy*

- At these check-ups, women should receive two tetanus injections, iron-folate pills, and nutrition information.
- Health workers and pregnant women need to plan for a safe delivery.

*Pregnant women need to take iron tablets*

- Multiple sources of iron tablets should be recommended, because many families prefer the convenience of buying them in the bazaar with a prescription, and others can find government workers or facilities to get them free.

- Medical providers/pharmacists must provide correct and clear information about how many tablets to take, when to take tablets, and how to increase absorption
- Pregnant women and their families need to know which foods are the best sources of iron so they can include them in their diet
- If women experience side effects, they need to know how to limit them

*Mothers and families need to know the danger signs of pregnancy and birth*

- Mothers need to seek assistance for delivery from a trained person who will carry out a clean delivery

*Women should initiate breastfeeding right after birth and give breastmilk exclusively until the end of the fifth month*

- They should feed the traditional ghutti to the newborn no more than one time

*Lactating women need to increase their food intake*

- Increase the amount of food, the variety of foods, and the frequency of meals and snacks
- Eat three meals and have at least three snacks each day
- Have an additional roti with each meal
- Add some vegetables and fruits to each meal
- Eat high-protein foods like meat or eggs every other day

*Lactating women need to increase their fluid intake*

- Drink a glass of water before each breastfeed
- Drink more liquids, milk, juice, water, or lassi to help produce more milk

*Lactating women need iron tablets throughout lactation*

- Multiple sources of iron tablets should be recommended, because many families prefer the convenience of buying them in the bazaar with a prescription, and others can find government workers or facilities to get them free
- Iron tablets help relieve the weakness many women feel during lactation and help build the blood supply. The tablets should be taken even if the symptoms disappear
- Eat a small amount of meat every other day, because it will help build healthy blood

Other factors that need to be considered are

- Families are concerned for the well-being of the woman, but are often ill-informed about their needs, the dangers involved, and treatment for any of the problems that might arise

Once information is provided, families tend to support the required actions

- Families rely on health care providers for guidance when ill and follow their advice. However, health providers rarely take a preventive approach and do not clearly explain problems, treatment, or desired behaviors in a manner that is understandable to families
- Families appear to have resources to buy more expensive food items periodically, purchase medicines, and pay for medical treatment in emergencies or when ill. However, some of these expenses could be redirected by following preventive advice and encouraging families to first eat more of their traditional foods like roti, milk, yogurt, and vegetables and then add some higher-cost foods periodically in small amounts

## People Speak about Maternal Health and Nutrition

### **Pregnant mothers**

*'I did not feel happy at all I felt remorse about having kids without any spacing Also I tried to abort it "*

*"I suggested to my husband that he let me go for sterilization but my mother-in-law voted against it and said children are God's gifts to us '*

*"If a child grows big, I will have trouble in delivery That is why I do not eat much, only enough to satisfy my hunger pangs I do not eat additional foods "*

*"I used to feel weak After taking these iron capsules, I feel better and I can go about my daily routine well I feel that due to the medicine I am able to do my household chores as usual "*

*'I do not know This is my first time No one has told me anything All I know is that it is very difficult to delivery, and am so afraid '*

*"In our village women take about two or three days to deliver "*

### **Nursing mothers**

*"The mother does not have or produce milk on the first day "*

*"The milk of the first day is water-like It is stale Both the doctor and elders have advised me to waste the milk of the first two days "*

*"For three years, because if I continue breastfeeding I will not get pregnant again "*

*Whatever is cooked at home I have to eat My mother-in-law does not let me eat what I want to*

*"My husband is the only bread winner in the family and we are a family of 10 persons so I eat whatever is cooked for the whole family "*

*"Some medicines are hot These can cause abortion That is why a doctor should be consulted before taking iron tablets "*

*'One benefit of iron tablets is that my daughter-in-law used to have abortions, after taking these tablets she stayed pregnant "*

### **Mothers-in-law**

*"Now the labor pains prolong because women don't have enough strength to deliver a baby We used to have pain for half an hour only, because we used to eat well and had lots of strength "*

*"Milk is thick on the first day Therefore a baby can't digest and vomits it out "*

*"It [colostrum] is stale milk which had accumulated in the breast over 9 months "*

*'Mothers milk is free of germs, very clean, and therefore doesn't cause diarrhea*

### **Husbands**

*A man cannot help a woman Only women can really understand other women '*

*How can a child be born without pain? Women have to go through some pain*

## **B Research Methodology**

### **Objectives**

The objectives of the research were as follows

- Improve understanding of mothers', fathers', and mothers-in-law's beliefs about maternal nutrition, anemia, and danger signs during pregnancy and delivery, the reasons for current practices related to these issues, and the constraints to changing behavior
- Investigate the attitudes and beliefs of various community and facility-based health workers on prenatal care, and assess their motivations and constraints to providing effective counseling
- Test, at the household level, the acceptability and feasibility of potential recommendations for improving prenatal care and nutrition during pregnancy
- Test, at the household level, the acceptability and feasibility of potential recommendations for improving mothers' nutrition during lactation
- Inform the revision of existing counseling cards and the development of new counseling cards
- Revise three chapters of the mothers-support-group curriculum
- Build the capacity of NGOs to conduct qualitative research and design community-based nutrition interventions

MotherCare/Manoff, through two local consultants, conducted a thorough review of qualitative research studies on maternal care during pregnancy. The purpose was to develop a comprehensive synthesis of current information available on the issues of maternal and child health in Pakistan. This synthesis, based on published and unpublished documents, included an analysis of current behavioral practices related to maternal child health and also barriers to changes in those practices. The literature review collected information in the following areas

Beliefs and practices surrounding

- Delivery
- Newborn care
- Initiation of breastfeeding
- Complications during pregnancy

Understanding of

- Antenatal care

- Recognition of danger signs during pregnancy
- Reproductive health services, i.e., quality of care
- Importance of maternal nutrition
- The use of iron supplementation for the control of anemia

From this review, researchers developed behavioral grids, which identified the information available as well as the information gaps that needed to be filled

After the review was complete, the NGOs involved in community-based counseling were asked to nominate master trainers trained in counseling skills to participate as researchers. In a national training workshop, the research team was oriented as to the purpose of the research and trained in skills for conducting qualitative research. In addition, the team helped modify the research instruments. At the training site in Murree, participants learned to conduct 24-hour recalls, apply the TIPs techniques, and conduct in-depth interviews. Tools were modified based on the field experience. Five-day training sessions were then held in each province to improve the research and supervisory skills of the NGO master trainers, to train the NGO research teams to conduct the formative research on MCH, and to finalize detailed plans for conducting the research.

The research targeted pregnant women and lactating mothers with a child currently under five months of age. Critical to understanding these groups were the *Trials of Improved Practices (TIPs)* conducted with 46 lactating women and 32 pregnant women. This participatory research technique invites program participants to pretest potential program “products” or practices prior to their inclusion in the program. Besides helping to define practices, TIPs also indicate the relative ease or difficulty of people adopting the practices, the nature and strength of barriers to carrying them out, and benefits and other motivations to help overcome these resistances.

Researchers conducted three interviews with pregnant and lactating women. In the first interview, each woman’s 24-hour recalls were recorded. Teams then analyzed the 24-hour recall using the calorie charts and went back to the same woman to give her feedback on the dietary analysis and any problems identified. In this second interview, researchers offered recommendations of improved practices along with motivations for the identified problem, and the researchers and the woman agreed on two recommendations for the woman to try over the next five days. The interviewers returned on the sixth day, did another 24-hour recall, and discussed the mother’s experience of trying the recommended practices.

Due to the fact that decisions related to health care and nutrition are not made in isolation from other members of the society, three main categories of persons who could influence decision-making were identified. In-depth interviews were conducted with mothers-in-law, fathers, and health care providers including LHVs, doctors, LHWs, and dais.

## C Study Participants

The research targeted pregnant women and lactating mothers with a child currently under five months of age, as well as the main “influencers” -- mothers-in-law, fathers, and health care providers. More than half the sample were drawn from rural populations. All provinces were represented. The 188 interviews included 33 participants in Balochistan, 47 in NWFP, 51 in Punjab, and 57 in Sindh. In general, the sample was low-income, illiterate (except for fathers and some health workers), and rural (see chart below)

### Formative Research Sample for Maternal Health

Participants	Methods	Population Covered								Totals
		Balochistan		NWFP		Punjab		Sindh		
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	
Lactating mothers	TIPs	8	0	11	3	8	2	8	6	46
Pregnant mothers	TIPs	8	0	6	2	7	2	4	3	32
<i>Sub Total</i>		16	0	17	5	15	4	12	9	78
IDI with mothers in law regarding mothers	In depth Interview	5	0	3	1	4	1	4	3	21
IDI of fathers regarding maternal health	In depth Interview	4	0	3	2	4	1	3	4	21
<i>Sub Total</i>		9	0	6	3	8	2	7	7	42
IDIs of LHV's/doctors regarding maternal health	In depth Interview	4	0	1	4	5	3	3	5	25
IDIs of LHWs regarding maternal health	In depth interview	1	0	3	1	3	1	2	4	15
IDIs of TBAs regarding maternal health	In depth Interview	3	0	4	3	7	3	4	4	28
<i>Sub Total</i>		8	0	8	8	15	7	9	13	68

The *pregnant women* were generally 20-30 years old and unemployed outside of the home. They were low-income and fewer than a quarter were literate. More than three-quarters of the pregnant women were from rural areas.

Pregnant women in this sample had mixed reactions about having a baby. Women are happy if they are pregnant with their first or second child or if they are expecting a boy. Others express ambivalence because they are concerned about the pregnancy's impact on their health, the impact on the youngest child because of poor child spacing, or because they feel they already have too many children. Some claimed failure of family planning methods. “I am worried how I

will take care of six children. That is why I was using pills for the last nine months. Still I got pregnant, also tried to abort it.”

A total of 21 *husbands* were interviewed. They were either low-paid public or private sector employees or low-income and self-employed. In contrast to the women, most of the husbands have 10 years or formal education. About half can read well, and only a few husbands can not read at all. Half the sample was under 30 years of age and only a few were over 40. Families had from 1 to 11 children, with over half having three or fewer. Many reported the death of at least one child.

Husbands were asked about their view of their wives' current or most recent pregnancy and the need for prenatal care. More than half of the husbands reported that their wives are healthy when pregnant. They believe their wives are healthy because they accomplish their normal household work and don't complain of any "pain or illness." Urban husbands are much more likely to know their wives are healthy because "they were seeing a doctor for regular checkups." Husbands who reported their wives are not healthy mentioned the following problems: anemia, back-ache, pale complexions, weakness, stomach ache, and high blood pressure.

The majority of the husbands believe pregnant women need prenatal care either to have a healthy baby or to keep the mother healthy. Prenatal care is defined by the husbands as eating well, not carrying heavy things, and consulting a doctor if the woman doesn't feel well. None of the husbands mentioned taking extra rest or seeing a health care provider, except for treatment of symptoms. Husbands and mothers/mothers-in-law are the key care-givers mentioned. They buy food and help carry heavy things. Husbands suggested that only other women can understand pregnant women.

Twenty-one *mothers-in-law (MILs)* were interviewed. They were mostly 46-65 years old, illiterate, and living in an extended family situation. All had pregnant daughters-in-law at the time of the interviews. Almost all the MILs believe a pregnant woman needs prenatal care. They define prenatal care as husbands do, but elaborate on a good diet by specifying the inclusion of fruits and ghee. MILs believe they are the best providers of that care. They also don't mention reducing work load or resting. Because doctors are expensive, they are only seen for serious problems, usually after consulting first with a dai. Husbands usually take their wives to the doctor or hospital. Urban women are more likely to consult doctors for check-ups, tetanus injections and for registration in hospitals.

*Lactating women* interviewed live chiefly in rural areas, all had a child under five months of age and almost all were 20-35 years old. Almost all are housewives, but a few are involved in income-generating activities. The majority are illiterate, but some (mostly urban) women can read well, having completed 10 years of formal schooling. More than half the sample live in extended families, including all urban women. Women from Punjab and Sindh are more likely to live in nuclear families.

Lactating women were asked about self-care support, recreation, and time with their children. Despite the demands of normal family work and breastfeeding, more than half of the sample women find time to rest and relax. However, almost all of those spend less than an hour each day relaxing. Most women also take time to talk with relatives and neighbors, but these are casual encounters rather than regular, planned activities. A demanding work load is the reason given most often by those who do not have time to rest. Playing with children is a concept that lactating mothers had trouble articulating. Half said they do have time to play with their children, usually their youngest, but couldn't specify what they do with them.

A total of 28 *dais* were interviewed, 18 rural and 10 urban. They were 35 to 70 years old, but the majority were less than 50 years of age. The majority of the *dais* are illiterate, but some have 6-8 years of formal education and can read well. Only six of the 28 *dais* were attached to an organization, the rest worked independently. *Dais* in this sample had an average of over 11 years of experience, and the majority had received some training. Urban *dais* reported delivering more babies than rural *dais*, two stating that they deliver 300 babies a year. Most *dais* deliver fewer than 30 babies a year.

A total of 15 *LHWs*, six urban and nine rural, were interviewed. The majority have completed 10 years of formal education, but are much less experienced than the *dais* and see fewer women in a year. Almost all work for the government and have received their training from the district health office or hospital. They describe their main responsibilities as "giving advice related to mother and child health." This includes family planning, immunization, water and sanitation, information on infantile diarrhea, and ARI. Some said they also give advice on antenatal care, growth monitoring, breastfeeding, and maternal nutrition.

There were 12 *LHVs* interviewed, eight from rural areas. Of the 13 *doctors* in the sample, eight were urban. Most *LHVs* have less than four years work experience and the *doctors* have slightly more experience. Most of the *LHVs* have 10-12 years of formal education and 1-2 years of *LHV* training. The majority of the *LHVs* and the *doctors* work for the government.

## **D Perceptions and Practices Regarding Women's Nutrition and Health**

### **1 Pregnant Women**

In order to fully understand the pregnant woman's situation related to nutrition, anemia, prenatal care, delivery, and care of the newborn, researchers carried out in-depth interviews with pregnant women, *MILs*, husbands, and health care workers who provide care for pregnant women. On most topics, there is a fair amount of consistency among the answers.

## **Dietary practices**

### *Good Foods*

Improved diet was synonymous with good pregnancy care for a large majority of the pregnant women, husbands, and MILs in this study. Urban women mentioned increased egg and meat consumption as components of a good diet during pregnancy, while rural women mentioned increased fruit and milk consumption. Very few mothers mentioned the importance of increasing the amount of food eaten, increased roti consumption was not mentioned either. Vegetables seem to be less highly valued in the diet in general, as well as during pregnancy. Dahl is not mentioned as a healthy food.

Almost all dais and LHWs consider foods important during pregnancy and view foods as the first treatment for many of the problems of pregnancy. Milk, fruit, vegetables, and meat are recommended, as well as increased roti consumption. Eggs are added to this list for anemia. LHWs said that pregnant women should eat more, eat more often, and include more variety of foods in their diet.

Underlying some of the food choices pregnant women made seems to be the sacrifice of their health for what they think benefits the rest of the family. Little or no understanding was expressed of the importance of pregnant and lactating women's diet as something that they are doing for the well-being of their families, not only for themselves.

### *Taboos*

There are no strongly-held food taboos during pregnancy. In fact, women have a pragmatic approach to food, as the following quote indicates: "Food is cooked for the whole family so I can't cook a separate dish for myself. I have to eat what the others are eating." Of the one-third of the women who avoided certain foods, gas-forming foods (mostly vegetables and lentils) and foods with bad taste were what pregnant women found objectionable. Pregnancy is seen by some as a "hot, vulnerable state," so hot foods are not encouraged. Hot foods are viewed as causing abortion and vaginal bleeding. The food items having hot properties included egg, meat, fish, bitter melon, peanuts, and other nuts. Some dais also support avoiding hot foods and eating cold foods during pregnancy. Most LHWs also support the hot/cold theory, but the complete restriction on these foods is only for the first three months and does not present a strong barrier to diet improvement.

### *Food distribution/purchasing*

The majority of the pregnant women interviewed were not responsible for food purchasing and intra-household distribution of food. In rural areas, cooking is often a shared responsibility among the women of the household. All the women from Sindh and the majority of the rural

women said they eat after the male family members and children have finished. In contrast, all the urban women in this sample reported cooking for the family, distributing the food to family members, and also eating with their family. Almost all women reported that male family members control the money, shop for the food, and can influence when the women eat and the amount and choice of foods available to them.

## **Pregnancy-related care**

### *Health-seeking Practices*

Pregnant women in this sample did not report going to health care providers for prenatal care unless they were ill. However, because pregnancy is considered a vulnerable state, all urban and the majority of rural women did see a health professional during pregnancy. Pains, weakness, bleeding, and fever were the most common reasons given for consulting a health practitioner. The rural women who didn't see a health care provider chose not to because they were healthy or the health facility was far away.

Women were just as likely to see doctors at private health facilities as at public health facilities. In both settings, however, medical providers often did not provide women with appropriate information about preventive measures to be taken during pregnancy (i.e., tetanus toxoid immunizations, iron folate, and physical examinations). In some cases, this may have been due to the provider's lack of correct information, while in others, it may be due to the provider's inability to communicate effectively with the women.

Dais report having a more preventive and broader approach to prenatal care. Besides mentioning a good diet, staying clean, and not lifting heavy things, they also mention checkups, extra rest, and tetanus injections. Most dais report examining women at every visit, half seeing them on a routine basis and the other half visiting them for delivery or when problems arise. Dais refer pregnant women to doctors for many reasons. Dais are key care givers and need to understand the importance of preventive prenatal care. They could be a major conduit for iron tablets and tetanus shots.

### *Danger Signs*

Pregnant women consider edema, weakness, and dizziness to be normal conditions of pregnancy. Most women experience them, do not consider them problems, and don't understand what causes them. Headaches and breathlessness were other common problems mentioned by the study sample. Many said they do not seek medical attention because the symptoms disappear after delivery.

## *Diet*

About half of the women in the sample said that improving their diet is either under their control or something for which they would receive family support. Those who were reluctant to increase the amount that they ate mentioned indigestion as their main concern. Financial limitations were rarely mentioned as constraints to improving diet.

However, when interviewers probed further on the subject of weight gain, it became clear that women don't know how much weight they should gain, why they should gain weight, and that the weight doesn't all go to the baby. Weight gain is associated with large babies and the need for hospitalization (expenses and inconvenience), or a life-threatening home delivery. The majority of LHWs promote improved diet and increased food intake, but are still concerned about weight gain, a big baby, and difficult delivery. The majority of pregnant women in this sample ate less to avoid having a big baby. While most doctors told women to gain weight by "eating better," LHWs gave more practical advice, telling women to "eat until full" or to "eat more frequently." Pregnant women seem to make a distinction between *improved diet* and *eating more*.

## **Anemia**

All of the urban and most of the rural pregnant women had heard about anemia, which is called *khun ki kami* in Urdu. Most women did not know what causes anemia, some attributed it to unrelated conditions such as worrying and asthma. However, most did know the symptoms, which is not surprising given the frequency of anemia. Between 40-50% of low-income women were found to be anemic in the National Health Survey of Pakistan (1990-1994). While half of the husbands had heard of anemia, they didn't understand the causes or the potential dangers either. Most MILs had also heard of anemia and knew the symptoms -- both from their own experience and from observing their daughters-in-law.

Almost all MILs consulted a doctor when their daughters-in-law experienced symptoms. Less than half of the women interviewed mentioned iron tablets or changed diet as treatment for anemia. However, almost all of the husbands said that "a good diet can prevent anemia." MILs believed anemia could be cured with a treatment of diet and medicine. No MILs mentioned prevention of anemia.

Foods both husbands and wives consider "good" and "blood-forming" (fruits, egg, milk) were mostly not high iron food sources, except for meat. There was no mention of dark green leafy vegetables or dahl at all. At the time of the interview, about two-thirds of the women thought they were anemic, but only one-third were taking iron supplements. For those who saw a health provider, iron supplements and/or B complex preparations were suggested. When tablets were taken, husbands and wives both saw the benefits and rarely mentioned side effects. Almost all women remember to take the tablets, but few have taken them over extended periods of time.

Almost all dais had heard of anemia, knew the symptoms (but also attributed some unrelated symptoms to anemia), knew the causes, and believed it could be cured. However, less than half the dais distributed iron tablets. Dais mentioned foods such as milk, meat, vegetables, and fish as the primary source for treating anemia. A majority of dais also mentioned medicine, but only two specifically mentioned iron tablets. In contrast, all LHWs specifically recommended iron tablets. Most dais who recommend iron tablets give it in the third month of pregnancy and prescribe more than two tablets a day. There was considerable confusion among LHWs about the correct dosage, as they reported prescribing one to four tablets per day, with the majority prescribing three.

Almost all doctors and LHVVs provide iron tablets to pregnant women starting in the fourth month. Most LHVVs and half the doctors recommend three tablets per day. Side effects were only reported by some dais, LHVVs, and doctors. Doctors and LHVVs did not know the best strategies to relieve side effects. Dais and doctors refer pregnant women to the government health care system for iron tablets. Almost all LHVVs provide iron tablets free-of-charge. Most LHWs report that they don't use up their supply of iron tablets, but if they ran out, families are willing to buy them. Most LHVVs and doctors believe that only about half of all the women receiving iron tablets actually use them. Most LHVVs give pregnant women less than a week's supply of iron tablets and believe that they will come back for more. Most doctors give them a month's or less supply of tablets. This may be a barrier to regular intake of iron pills as women tend not to return for more if they are feeling better.

## **Childbirth hygiene, obstetrical emergencies, care of newborns**

### *Knowledge and Practices*

Pregnant women, MILs, and dais identified prolonged labor, excessive bleeding, and retained or delayed placenta delivery as the most common obstetrical problems. Many women (especially primiparas) and husbands have no idea of possible problems. Many husbands view delivery as the women's domain and have only vague ideas about it. The most common problems that mothers, MILs, and dais think require hospitalizations or seeing a doctor include prolonged labor, excessive bleeding, breech baby, and retained placenta. Home remedies are still tried first by some rural women. Most LHWs said "women go to the hospital" for prolonged labor.

Almost half of the pregnant women sampled didn't know the length of normal labor. The majority of MILs, LHWs, LHVVs, and dais believe that normal labor lasts eight hours or less. The others had no idea or answered 12 or 24 hours. While postpartum hemorrhage is considered a problem, it is not considered urgent. Bleeding is considered normal and excessive amounts difficult to determine. If problems arise during delivery, the pregnant woman relies on her husband or MIL to make the decision and arrangements. Most women and husbands said they can reach a health facility in under an hour and would use private transportation to get there.

Dais refer pregnant women to the hospital, although almost half use injections during labor to help speed up delivery or other procedures to stop bleeding. Doctors and LHVs feel confident that women whom they refer to a hospital for obstetrical problems will go.

The majority of women in this sample, as in the nation (86%), preferred to deliver at home. Reasons given include tradition, presence of family members, dais' experience, and difficulty to reach a hospital or lack of faith in hospitals. However, families aren't aware of the proper hygiene required and seem to focus their attention on special foods for the mother after delivery and clothes for the newborn. A few mentioned having money available in case of an emergency.

The lack of proper sanitation during home deliveries is still a significant problem. While almost all mothers have something under them when they deliver, the majority of mothers put an old sheet or mat under them. Some use plastic or ashes. The need for something that has been cleaned and washed for the delivery is not considered, because it will get dirty anyway. Half the women have also experienced a delivery with a dai who didn't wash her hands or boil instruments before delivery. While the majority of dais report washing instruments, they do not boil them and only a few mention soap or a disinfectant.

#### *Newborn care/postpartum care*

The practice of keeping a baby warm after delivery is not universally practiced. Half of the women in this sample wrap the baby before the bath and the other half after. The time lapse between birth and wrapping varied from immediately to 10 -15 minutes. LHWs, LHVs, and doctors give a wide range of advice on the care of the newborn, including feeding and immunizations.

About one-third of the women initiated breastfeeding within three hours of delivery. Almost half of the husbands think breastfeeding should start the first day, a few even within the first hour. More than half the MILs support initiation on the first day, but only after discarding a few drops of "stale" milk. Most of the dais, LHVs, and LHWs recommend initiating breastfeeding within one hour. Overall, there is more resistance to giving colostrum, but LHWs and some urban fathers support feeding colostrum. Discarding a small amount seems to satisfy the dais' concerns about colostrum. Doctors and LHVs have no reservations about colostrum and know the benefits.

Breastfeeding practices are still less than optimum. Just over half of the women stated they would initiate breastfeeding after 24 hours and most of them on the third or fourth day. The most common reason for delayed initiation is that the mother doesn't have milk on the first day or the milk is stale. MILs have very specific ideas concerning breastfeeding and newborn care and all give advice to their daughters-in-law.

### *Postpartum fever*

Postpartum infection and fever (sepsis) is considered a normal occurrence after delivery by all family groups, LHWs, and dais interviewed. Almost all women experienced it and attributed it to weakness of the mother, woman catching a cold, or excessive sweating during summer deliveries. Dais only refer women with high fevers to the hospital. Half the mothers reported seeing a doctor when they have fever, but they usually waited many days before consulting a doctor. Despite LHWs' up-to-date training, more than half reported giving tablets for fever and some don't believe seeing a doctor is necessary. LHWs and doctors prescribe antibiotics for fever, because almost all of them understand that infection from unhygienic conditions of delivery causes the fever.

## **2 Lactating Women**

### *Initiation of Breastfeeding*

Most women reported delaying initiation of breastfeeding. While some initiated within the first hour and others during the first day, the majority had misconceptions about initiation that appear to be strongly held. They include the belief that milk production is delayed until the baby is born and that the milk is stale. Although doctors and dais promote early initiation of breastfeeding with the pregnant women and their families, the delaying behavior still persists.

### *Prelacteal Feeding*

All babies are given one or more prelacteal feeds. Most rural dais recommend ghutti, but most of the urban dais and all LHWs in this sample are discouraging ghutti. Doctors and LHWs said that ghutti is not needed but don't appear to actively discourage families from the tradition. Honey and other sweet substances are most common. Often multiple purposes are associated with one prelacteal, such as cleaning the stomach, satisfying hunger, and fulfilling ritual.

### *Breastfeeding*

Mothers reported having many good breastfeeding practices. They breastfeed on demand, day and night, and most feedings last more than 10 minutes. However, exclusive breastfeeding during the first six months is almost non-existent, except for a few urban women. Those who reported feeding only breastmilk said that the child was too young for other liquids and would get diarrhea if not breastfed. Other mothers supplemented with therapeutic liquids, water, and semisolid foods. The therapeutic liquids, such as gripe-water, qaawa/tea, ghutti, satti, and honey, are given to keep the child's stomach clean, to facilitate passing gas, and to avoid stomach aches. The baby's stomach is a focal point and preventive measures are taken to avoid problems related to the stomach.

About one-third of all the babies in the sample were given water. Because the research was conducted in the coldest months of November and December, one may assume (based on previous research) that the incidence would be much higher in summer. Water is usually given to quench thirst. "When it is hot and baby's mouth gets dried, only then I give water." Mothers believe that water is needed and this strongly-held belief is supported by family, friends, and health care providers.

Some babies under six months are given semi-solid foods and other milks. The mothers who give their children other milks do so on their doctors' advice or because they are concerned that their milk is insufficient. The few mothers who started semi-solids also did this because of concern that breastmilk was not enough or because they believed that four months was the correct age to start.

The majority of MILs do not support supplemental feeding, because it might cause diarrhea. Urban MILs are more likely to support feeding additional milks and supplemental water. Most MILs feel a baby needs water for one of the following reasons: avoiding dehydration, jaundice, stomach ache, and constipation.

Most mothers believe they have sufficient milk. A baby who sleeps well, doesn't cry, and is fat and playful is thought to be consuming enough milk. Mothers consider crying an indication of hunger and could benefit from some explanation of other reasons that babies cry. A few mothers complained of the following problems their babies had and attributed them to breastfeeding: stomach ache, weakness, and palpitations. None of their remedies would increase milk supply or solve the problems. Doctors were most frequently contacted for help with all problems.

Although the majority of the mothers reported changes in their health during breastfeeding (such as weakness, dizziness, fatigue), almost all mothers planned to breastfeed for two years. This is normative behavior, and is considered good for the child's health and for child spacing. Mothers believe that breastmilk is produced from mothers' blood. Symptoms such as weakness, dizziness, palpitations, breathlessness, and sweating are therefore attributed to breastfeeding. Only a few mothers associated increased appetite with breastfeeding or the need to eat more. Some mothers were reluctant to take medicine prescribed by doctors.

### *Infant feeding and growth*

Mothers consider weakness in an infant (small face and thin hands and feet), crying, inactivity, and a child who feels light when carried as indicators of inadequate growth. Only one woman, a Punjabi, mentioned weighing or the charting of weight at a health center.

Mothers feed children foods they consider filling and that they think will help them sleep well. They include semi-solid foods, such as banana, khichri, cake (rural Sindh only), biscuits, roti,

and cerelac. Mothers consider many foods inappropriate for infants, such as potato, sweet potato, sag, lentils, family foods, apples, and guava. These are seen as hard to digest, gas-forming, and causing diarrhea. Half of the mothers want their babies to eat more than they currently do.

### *Diet during lactation*

Women linked eating well with increased milk production and satisfying their baby's hunger. Therefore, many do change their diets by adding milk, lassi, eggs, meat, and fruits, (only meat and vegetables in urban areas). The focus for most, however, is on special foods rather than eating more quantity of the usual foods. Lactation is considered a "cool" state, making foods like meat and eggs acceptable. Increased roti consumption was not mentioned. Increased fluid intake is almost non-existent during lactation and should be actively promoted as a means of increasing milk supply.

Most of the lactating women in this sample are not allowed to buy food for their families. The husbands buy the food or delegate this task to other family members. Although women cook for themselves, only one-third eat with the family (more common in urban areas). The rest eat when the other family members have finished.

A significant number of the women did not make any changes in diet during lactation. The main reason was lack of support from family members. "Whatever is cooked at home I have to eat. My mother-in-law does not let me eat what I want to."

## **E Trials of Improved Practices (TIPs)**

Whereas the in-depth interviews conducted with pregnant and lactating women and their "influencers" provided researchers with important insights into present practices regarding maternal and child health and nutrition, the Trials of Improved Practices (TIPs) gave researchers opportunities to explore with the study participants the feasibility and acceptability of alternative practices. TIPs were carried out with pregnant and lactating women. Tables with the numeric summary results of the TIPs interviews on maternal health are provided in Annex B of this report.

### **1 Pregnant Women**

Initial dietary recalls with pregnant women revealed the following three main problems:

- They are not eating enough food
- They are not eating a sufficient variety of foods

- They are not taking iron tablets

The TIPs survey methodology requires two 24-hour recalls with counseling in-between. Researchers took the first recall at the first meeting with the women and used it as the basis for recommending improved practices. The first recall revealed that the overall food consumption of these pregnant women in the second and third trimester was well below the recommended 2500 calories. Half were consuming less than 1500 calories and, with the exception of two, the rest were under 2000 calories. In general, their food intakes were varied and had sources of vitamin A and C. Practically no one was taking iron tablets. The main contributor to the low caloric intake was the inadequate frequency of meals. Almost half of the rural women and more than half the urban women were only eating two meals per day. More than half the sample had snacks, but snacks were of inadequate quantities, too small to be a significant contributor to their caloric intake.

After counseling, the second 24-hour recall showed that many of the pregnant women were able to increase their caloric intake, the frequency of meals, and the size and frequency of their snacks. *The women with the lowest caloric intakes, for the most part, were able to double their caloric intake. However, half of the women were still eating less than 1700 calories after the counseling session.* Unfortunately, women did not want to add ghee while cooking or eating because it is seen as promoting jaundice and indigestion. (See annex pages 1-3)

### **Problem 1 Pregnant women are not eating enough**

Women who had an insufficient food intake were advised during the counseling stage of TIPs to increase the amount of food they ate and were given many food choices (Recommendation 1b). Most were able to follow that advice because they believe that a good diet is important for health. They didn't know before the trials that they needed to eat more. They did not complain about lack of availability of food and did not voice concerns about gaining too much weight or having a big baby.

After eating more, they said they felt better, were less dizzy, more energetic, and had a better appetite. The foods that these mostly rural women chose to eat more of were roti (saving some from the night before for the morning), milk/lassi, fruits, ghee, and leftover food. One mother ate more frequently. Only occasionally did women choose to eat more meat, curry, or vegetables. Dahl was not mentioned.

There were very few constraints. One woman couldn't eat more because there were no leftovers, another had no appetite, another reported having indigestion from overeating, and another said she wouldn't try to eat more because she doesn't like what she eats now. One mother said she thought eating more food is good advice, but her family does not have enough money for the additional food.

Women liked and followed the recommendation to add two snacks to their daily diets (Recommendation 1c). Some ate whenever they were hungry. The common snacks were fruit, roti, pakorays, or rusks with tea. The family supported the snacking and the women felt more energetic. Women felt this practice was easy to follow.

When advised to avoid skipping meals (Recommendation 1d), all pregnant women gave positive responses. The meal most often added was breakfast. Women stated that they were no longer feeling weak or breathing heavily after adding the additional meal, and that they ate meals even when they were not hungry. Eating for their unborn child was another motivator.

Empowering women with an understanding of what they need to eat and why seemed to yield positive results. Women who tried to eat more meat or eggs by eating one every other day (Recommendation 1f) gained support from their husbands and MILs. Almost all women liked meat. Constraints included a lack of availability of meat in some rural areas, inability to afford meat, and competition among children and husbands for a limited number of eggs. Given meat's high content of easily absorbed iron, women should be encouraged to eat meat when possible. All four women who said they would try this did and said they would continue it. The pregnant women were willing to follow similar advice to improve the variety of foods during meals and snacks and to continue to eat more fruits and vegetables.

## **Problem 2 Pregnant women are not taking iron tablets**

Researchers used TIPs to probe use of iron tablets as well as present use and acceptability of potential sources of iron tablets. While LHWs (Recommendation 2a) don't seem to be considered dependable sources, most women are able to get the tablets themselves or have their husbands or MILs get them from a health center, hospital, or bazaar (Recommendation 2b). Husbands, in the in-depth interviews, said that they preferred purchasing iron tablets at the chemist because of the convenience. Having a prescription seems to increase compliance. Most women liked the idea of buying a large quantity of iron tablets (Recommendation 2c) and agreed to try it, but ultimately were not successful. This was more related to the lack of urgency to get the tablets than the undesirability of the recommendation. When the person who buys the medicine is available, it will be purchased. Some identified free alternative sources, such as the basic health unit (BHU) or hospital, and therefore did not need to purchase iron tablets.

Following the advice, half the women were taking iron tablets, a four-fold increase. Family members don't recognize the need for iron tablets and make obtaining them a low priority. Iron is sometimes considered a medicine and some families forbid medicine during pregnancy.

Only one woman complained of any side effects she attributed to the iron tablets.

### **Problem 3 Pregnant women are not eating enough variety of foods**

A small number of women were given the recommendation to increase the variety of foods in their diet (Recommendations 3a, 3b, 3d), but only a few agreed to try it. From the limited sample, women found support for dietary improvement and variation once husbands and MILs understood that eating more fruits or vegetables was good for their health.

Women were not interested in growing a garden (Recommendation 3c). This lack of interest may be due to the extra work involved and the relatively easy access to vegetables they enjoy now. Some women mentioned the lack of space for a garden.

## **2 Lactating Women**

Household trials were conducted with 46 lactating mothers of children between the ages of 0 and 5 months. The sample included 35 rural women and 11 urban women. Researchers identified the following three major problems during the initial 24-hour recall:

- The women were not eating enough food or drinking enough fluids
- Their diets lacked enough variety to provide needed nutrients
- They were not taking iron tablets

Almost all of the lactating women had an initial daily intake below the recommended 2700 calories. Only two rural women were consuming 2700 calories daily. More than half of the sample was taking in less than 1500 calories. While urban mothers' inadequate intake (average intake 1435) was mainly due to small quantities of food consumed at each meal, many of the rural women (average intake 1597) ate only two meals per day. Almost all women were eating inadequate quantities of snacks.

After following the recommendations, the caloric intake of almost all of the lactating women increased. Urban women increased their average intake to almost 1900 calories. However, only four women consumed over 2000 calories, and none achieved the recommended 2700 calories. *Rural women had approximately the same 400 calorie average increase, starting at almost 1600 calories and increasing their average intake to 2055.* Eighteen women consumed over 2000 calories, about the same proportion as urban women. Three rural women were able to achieve the 2700 calorie level, and only one woman had an intake of fewer than 1000 calories. Many of the women were able to increase their number of snacks, but seven rural women reported that they were still not eating any snacks.

Generally, lactating mothers were eating more food than they had during pregnancy. This could be because the burden of having a big baby is gone or because the women have increased appetites during lactation. (See annex pages 4-6)

## **Problem 1 Lactating women are not eating enough food or drinking enough fluids**

Lactating women were able to increase the amount of food they ate (Recommendation 1b), add snacks (Recommendation 1c), avoid skipping meals (Recommendation 1d) and drink a cup of liquid with each breastfeed (Recommendation 1h) to address their caloric and fluid deficiencies. There were a few negative reactions to some of the suggested dietary improvements, but both urban and rural women followed them equally well.

Lactating women in this sample chose to increase their food intake by having more roti at meals, adding roti to breakfast, drinking more milk, and adding yogurt, fruits, vegetables, and rice to meals. The women said they felt more energetic, less out-of-breath, and had increased appetites. They could tell they were producing more milk, and felt it was good for them and their children. No constraints were mentioned.

Women liked increasing their fluid intake and found it easy. Most of the women drank more water, which was easily accessible, free, and satisfied their thirst. They drank before breastfeeding, at meals, and whenever thirsty. They also drank lassi, milk, and soft drinks. The women felt better and healthier, and felt that they were producing more milk, and better satisfying their children. The only two negative comments were related to the need to urinate more frequently with increased fluid intake.

Lactating women also agreed to avoid skipping meals (Recommendation 1d) and to increase the quantity and frequency of snacks (Recommendation 1e). They all felt better when they added a meal or snack. More energy, more milk, feeling healthier, and less hunger between meals were some of the positive responses to the change. Some added breakfast, others lunch. Adding roti, biscuit, or paratha with their tea was a common snack, as was fruit. A few women mentioned the poverty issue as the reason they do not eat more food.

The other recommendations were tried by fewer people and had some negative reactions. Adding ghee to foods (Recommendation 1g) seemed more acceptable during lactation than it did during pregnancy, but a smaller number of women actually tried this recommendation.

## **Problem 2 Lactating women not eating enough of a variety of foods**

The lactating women were offered four recommendations to improve the variety of foods in their diet. The only recommendation that was not acceptable was growing a garden (Recommendation 2c). The majority of women who responded negatively mentioned the lack of space for a garden. The recommendation to add a small amount of fruits and vegetables to each meal (Recommendation 2a) was followed by almost all of the women who said they would try it. Some women chose to add small amounts of vegetables to their meat dishes. Radishes, carrots, apples, and bananas were mentioned most frequently. Positive reactions included a better complexion, feeling healthier, and being able to eat foods that they had previously thought

were bad for their babies

Women followed the recommendation to include a fruit in their daily snack (Recommendation 2b). They liked fruit, although some mentioned that it wasn't always available at home, in which case they would eat something else for a snack. A small number of women mentioned that they were too poor to afford to buy fruit.

The recommendation to "add meat or eggs every other day" (Recommendation 2d) was easier for rural women to follow than for urban women. The women liked both meat and eggs. One woman mentioned eggs are "hot" and therefore she wouldn't eat them in the summer. A few women mentioned eating fish also. A woman mentioned feeling more energetic in general and specifically after breastfeeding. Some women had meat only every four days. Families adapt to their economic situations and decrease the frequency or amounts eaten.

### **Problem 3 Lactating women not taking iron tablets**

Researchers used TIPs to probe the present use and acceptability of potential sources of iron tablets. Lactating women, especially the rural women, did not consider the LHW or the health center as a source for iron tablets. Many women knew the LHW or knew there was not one nearby. Fewer than half the women who said that they would try to get iron tablets from the LHW or health center were successful.

Purchasing iron tablets from a pharmacy was the most viable option. All knew where to get them. A three-months supply was only Rs 10.30, which was considered inexpensive. One woman preferred buying a small amount first to see if they helped and then buying more. The women felt better after taking the iron tablets. Their backaches and dizziness disappeared, and they felt more energetic. A number of women said they would continue to take them until their symptoms disappeared.

## F MAJOR FINDINGS ON MATERNAL HEALTH

The results of the qualitative research described above may serve to assist program planners in deciding about the route to take, the obstacles, and the resources available to a program for reaching the defined objectives. The table below presents the objectives or ideal practices for pregnant and lactating women. Along with the objectives and the resistances or constraints to achieving the objectives (both attitudinal and other more practical/situational constraints), positive or motivating factors to aid in their achievement are also presented. In some cases, key phrases have been suggested for motivating improvements in behavior.

IDEAL PRACTICES (OBJECTIVES)	ATTITUDINAL RESISTANCES	OTHER RESISTANCES	MOTIVATING/SUPPORTING ATTITUDES/PRACTICES
<p><i>Pregnant Women</i></p> <p>1 Eat more than usual at each meal eat 3 meals and 3 snacks and include a variety of foods</p>	<ul style="list-style-type: none"> <li>* Many women believe too much food increases baby's size causing hard delivery</li> <li>* They don't recognize that weakness is related to poor diet</li> <li>* They don't know that they need to eat more during pregnancy</li> <li>* 'Hot' foods are not considered good for pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>* Pregnant women don't shop for the food or control the money that is spent</li> <li>* Mothers eat last in many families after others have finished</li> <li>* Health care providers don't see women early in pregnancy don't advise increasing food</li> <li>* Health care providers don't have visual tools to describe how much women should eat</li> <li>* Many women eat low calorie snacks (fruit, tea, rusk)</li> </ul>	<ul style="list-style-type: none"> <li>* Mothers and husbands want a healthy baby and healthy mother</li> <li>* Most mothers and fathers know what good food is and connect it to a healthy pregnancy</li> </ul>
<p>2 Get at least 3 prenatal check ups during pregnancy to receive 2 tetanus injections, iron pills, nutrition information and plan for safe delivery</p>	<ul style="list-style-type: none"> <li>* Pregnant women and families think it is normal to be weak and tired during pregnancy</li> <li>* Families are concerned about the expense of seeing a doctor</li> <li>* Families are wary of taking medicine during pregnancy</li> <li>* They don't realize need for injections and iron tablets and consider prenatal care to mean eating good foods not lifting heavy things and only seeing a doctor if sick</li> </ul>	<ul style="list-style-type: none"> <li>* Women only see a health care provider if they have problems during pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>* Most mothers are able to leave the house for a visit to a health worker</li> <li>* Most fathers feel women need good food and care during pregnancy</li> </ul>

<p>3 Obtain iron tablets from HW or pharmacy From the fourth month take 2 tablets one time per day with water or fruit juice but not with meals tea or milk Continue to take tablets throughout pregnancy and while breastfeeding the baby</p>	<ul style="list-style-type: none"> <li>* Women don't want to take medicine during pregnancy</li> <li>* Iron tablets are considered treatment for anemia, not a preventive measure</li> <li>* Many women and families don't know what causes anemia or how to cure it</li> <li>* Women and many health care providers believe that certain foods can cure anemia</li> <li>* MILs mothers and husbands are not aware of the potential danger of anemia during pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>* Health care providers prescribe incorrect amounts of tablets and without proper guidelines for taking them</li> <li>* Iron tablets are dispensed in small amounts requiring frequent visits for refills</li> <li>* Access to tablets is difficult often not with LHW or at clinic</li> </ul>	<ul style="list-style-type: none"> <li>* Husbands are willing to buy iron folate tablets from the pharmacist, especially with a prescription</li> <li>* Tablets can be obtained free or inexpensively in the bazaar</li> </ul>
<p>4 Mothers and families need to know the danger signs of pregnancy and birth Mothers need to seek assistance for delivery from a trained person who will carry out a clean delivery Families must have a plan ready beforehand in case emergencies arise</p>	<ul style="list-style-type: none"> <li>* Men believe that issues surrounding pregnancy and birth are not things they need to understand</li> <li>* Many women and most men do not know the severity and scope of danger signs</li> <li>* Many women and MILs think edema, weakness, and some vaginal bleeding are normal in pregnancy and will go away after delivery</li> <li>* Proper hygiene is left up to the dai, most women don't understand link between infections and dirty hands and supplies</li> </ul>	<ul style="list-style-type: none"> <li>* Families have to arrange transportation and have money when they seek medical attention</li> <li>* Mothers have to stay away 2-3 days</li> <li>* Many families wait to see if the symptoms disappear and try home remedies, rather than seek medical attention immediately when problems arise</li> </ul>	<ul style="list-style-type: none"> <li>* Most husbands are willing to take wives to hospital in an emergency</li> <li>* MILs know time for normal labor and recognize referral as necessary if labor is prolonged</li> <li>* The majority of mothers and some husbands know that postpartum hemorrhage (PPH), prolonged labor, edema, and headache are potential problems</li> <li>* Dai has influence in decision-making concerning referral</li> </ul>

<p><b>Lactating Women</b></p> <p>1 Initiate breastfeeding right after birth feed the traditional ghutti no more than one time, and give only breastmilk until the end of the fifth month</p>	<ul style="list-style-type: none"> <li>* Many mothers and families believe that the first milk is stale or doesn't come in until the baby is born, so they delay initiation for 3 or 4 days</li> <li>* Almost all mothers and families, as well as many health workers believe that additional water for the baby is essential, especially in summer</li> <li>* Pre-lacteal feeds are universal and culturally have many positive characteristics associated with them</li> <li>* Many MILs mothers and husbands believe women need to supplement with milk in a bottle because they don't have enough breastmilk</li> <li>* Some mothers perceive bottle feeding as convenient</li> </ul>	<ul style="list-style-type: none"> <li>* Some doctors are still advising supplemental milks</li> </ul>	<ul style="list-style-type: none"> <li>* Dads support early initiation and could start the mother breastfeeding at the delivery</li> <li>* MILs and fathers are willing to have women breastfeed early</li> </ul>
<p>2 Increase food intake during lactation Eat at least 3 meals and 3 snacks that contain 2700 calories total Drink more water milk and sherbat</p>	<ul style="list-style-type: none"> <li>* Women don't know that they need to eat more when lactating</li> <li>* Women don't recognize their weakness is related to poor diet</li> <li>* Lactating women and families support eating special foods rather than increasing amounts of food eaten</li> </ul>	<ul style="list-style-type: none"> <li>* Women don't shop for the food or control the amount of money spent</li> <li>* Many women don't eat until all others in the family have finished</li> </ul>	

## **G Recommendations and Implications for Program Design**

Many of the problems identified for pregnant and lactating women resulted from a lack of understanding. Once empowered with information, they found many of the suggested behavior changes acceptable and easy to implement. They had the support of their families, who were concerned about both the woman's and child's health. Although they were all low-income families, nearly all of the recommendations seemed to be financially feasible. While medical providers tended to know more about the ideal behaviors, they often were not effective educators or they promoted action in ways that were not clear to the families.

The following are the most important recommendations to emerge from the research with pregnant and lactating women, their families, and health care providers. Each recommendation is accompanied by a number of implications for program design.

### **Recommendation 1 All pregnant women need to increase their food intake**

This includes increasing the amount of food, the variety of foods, and the frequency of meals and snacks. Women need to eat three meals and have at least three snacks every day.

#### *Implications for Program Design*

- Families should be provided with clear pictorial guidelines about how much and how often a woman should eat during pregnancy. The importance of an improved diet must be promoted to all family members so that the right types of foods are bought and the woman can increase her food consumption by enough with the food left over after others have eaten.
- All health care providers should discuss a pregnant woman's food intake with her and give the same guidelines each time they meet.
- Because weight gain is a strongly-held concern of pregnant women, an approach must be identified for overcoming this potential resistance.
- Based on the trials in which pregnant women willingly ate more, felt better, and agreed to continue the practice, the best approach is probably to focus on an improved diet, including eating more, without any specific discussion of weight gain.
- Additional research is needed on the acceptability of energy-dense snacks.
- Efforts to improve the nutritional status of pregnant women should target husbands, because they shop for food.
- Women need to understand that eating well is not selfish, but rather an action undertaken for the good of the family. This might encourage them to be less self-sacrificing and more equitable in the food distribution.
- Key phrases might include "An extra roti at each meal makes pregnant women energetic and keeps weakness and the doctor away."

## **Recommendation 2 Pregnant women should get at least three prenatal check-ups during pregnancy**

Just as all pregnant women should eat more food and a variety of foods, they need at least three visits to a health care provider, including receiving tetanus injections and iron tablets

### *Implications for Program Design*

- Women and their families need to hear from all health care providers that prenatal care means preventing illness for the mother and the child and possibly preventing trips to the hospital later during delivery
- Key phrases might include “Women can feel good and have energy during pregnancy if they follow this prenatal plan ”

## **Recommendation 3 Pregnant women need to take iron tablets**

Iron tablets relieve the weakness of pregnancy and must be taken from the fourth month through lactation

### *Implications for Program Design*

- Pregnant women need to understand that tablets are preventive and need to be taken even without symptoms of anemia or even after symptoms disappear
- One key motivator for taking iron supplements and/or avoiding iron deficiency is how much better the woman will feel as a result
- Multiple sources of iron tablets should be recommended, because many families prefer the convenience of buying them in the bazaar with a prescription, while others can find government workers or facilities to get them free of charge
- Medical providers/pharmacists should provide women and their families with correct and clear information about how many tablets to take, when to take tablets, and how to minimize side effects
- To address pregnant women’s concerns about taking “medicine” during pregnancy, iron tablets may be promoted as a nutrient rather than a medicine
- Talking about anemia in support groups can be an effective way to communicate, inform, and motivate women
- To improve pregnant women’s access to iron folate tablets, health workers should give women larger amounts and multiple prescriptions and/or encourage women to return for routine revisits to refill supplies
- Key phrases might include “I used to feel weak, but after taking these capsules I feel better and can go about my daily routine ”
- Pregnant women and their families need to know which foods are the best sources of iron so they can include them in their diet

#### **Recommendation 4 Mothers and families need to know the danger signs of pregnancy and birth**

Pregnant women and their families should be able to recognize the danger signs of pregnancy and birth, so that they may seek medical assistance when necessary

##### *Implications for Program Design*

- Pregnant women and their MILs should interview dais and ensure that they select only those who have received training and will carry out a clean, hygienic delivery (Families might benefit from a visual checklist of things that they need for a safe delivery )
- Pregnant women, MILs, and husbands should be able to describe a normal delivery, recognize possible problems and consequences, and what needs immediate medical attention
- Because mothers-in-law have a strong voice in family decision-making and tend to have control over their sons, they should be well informed and positioned as the experienced ones who ensure that if danger signs appear, the woman is immediately referred to a doctor
- The practice of keeping a baby warm after delivery should be promoted
- Pregnant women, MILs, and husbands should be able to describe the cause of postpartum fever, the need for treatment, and methods of prevention

#### **Recommendation 5 Women should initiate breastfeeding right after birth and give only breastmilk until the end of the fifth month**

##### *Implications for Program Design*

- Newborns should be fed the traditional ghutti no more than one time
- Because dais are trusted sources of information who are already present at deliveries, they should start the mother breastfeeding immediately This should not be too difficult since the research showed that dais support early feeding With some additional information, they could be the main promoters of optimum breastfeeding initiation and newborn care
- The importance of colostrum and early initiation of breastfeeding needs to be actively promoted to all people who participate in the birth rite, perhaps as part of the birth ritual
- Positioning mother's milk as "the natural, God-given ghutti" may be one way to satisfy both tradition and health needs
- Helping mothers understand that breastmilk contains a lot of water might help convince them to refrain from giving water to children less than six months old
- Because mothers have made the link between other milks and diarrhea, water should be positioned with other milks as a possible cause of diarrhea

- Mothers and families should get clear and consistent messages about exclusive breastfeeding for the first six months and the dangers of other liquids, including water
- Key phrases “Immediate breastfeeding helps the mother to stop bleeding and brings in the milk supply ” “The newborn is hungry and needs milk right after birth ” “The first milk from the breast is God’s natural ghutti ”

### **Recommendation 6 Lactating women need to increase their food intake**

This includes increasing the amount of food, the variety of foods, and the frequency of meals and snacks Women need to eat three meals and have at least three snacks each day Women should have an additional roti with each meal, add some vegetables and fruits to each meal, and eat foods like meat or eggs every other day

#### *Implications for Program Design*

- Ways to increase calories, such as giving panjeeri and enriching milk drinks, should be explored While fruit is desirable, it is not high in calories when eaten fresh with nothing accompanying it Conducting some recipe trials could test the acceptance of various high-calorie snacks and combination foods Another useful approach would be a more in-depth study of the eating habits of the women who are able to eat the recommended caloric intake, in order to identify practices that would be acceptable to other women
- Lactating women, as well as their families, should receive the recommendation to add meat or eggs to the lactating woman’s diet every other day, thereby empowering women to ask their husbands for food for their health
- Key phrases “Mother will have more energy and be better able to take care of the baby and family ” “Mother will have more milk to feed the baby and ensure his health ”

### **Recommendation 7 Lactating women need to increase their fluid intake**

A lactating woman should drink a pao of water before each breastfeed and drink more liquids, milk, juice, water, and lassi to help produce more milk

#### *Implications for Program Design*

- Key phrase “Instead of giving water to the baby, mothers should drink the water themselves The water goes into the breastmilk and the baby gets all the water it needs ”

## **Recommendation 8 Lactating women need iron tablets throughout lactation**

### *Implications for Program Design*

- Multiple sources of iron tablets should be recommended, because many families prefer the convenience of buying them in the bazaar with a prescription, and others can find government workers or facilities to get them free of charge
- Iron tablets help relieve the weakness many women feel during lactation and help build the blood supply
- It is important to promote the use of iron tablets even after symptoms improve to help build and maintain healthy blood Any iron tablet promotion should clearly specify how long they should be taken and why
- Eat a small amount of meat every other day as it will help build healthy blood
- Key phrases “Taking iron tablets will help women feel better soon ” “Iron is not a medicine but a necessary nutrient to help mother and baby be strong ”

### **Additional Implications for Overall Program Design**

- 1 Families are concerned for the well-being of the woman but are often ill-informed about their needs, the dangers involved in pregnancy and childbirth, and cures for any of the problems that might arise Once information is provided, families tend to support actions that are required
- 2 Families rely on health care providers for guidance when ill and follow their advice However, health providers rarely take a preventive approach and don't clearly explain problems, treatment, or desired behaviors in a manner that is understandable to families Additional training and resources for all levels of health workers is critical
- 3 Families appear to have resources to buy more expensive food items periodically, purchase medicines, and pay for medical treatment in emergencies or when ill However, some of these expenses could be redirected by following preventive advice and encouraging families to first eat more of their traditional foods such as roti, milk, yogurt, and vegetables and then add some higher-cost foods periodically in small amounts

### **III Child Health: Findings from Interviews and Trials of Improved Practices**

#### **A Summary of Findings**

During the past decade the Government of Pakistan has been working to change existing infant feeding practices that contribute to poor infant nutritional status and high infant morbidity and mortality rates. The results of the formative research described here will be used to inform the development of educational and counseling materials and activities designed to help improve the way mothers feed their young children. Researchers carried out in-depth interviews with mothers of healthy young children, young children with diarrhea, and young children who were recovering from illness to gain a better understanding of their beliefs and practices regarding the care and feeding of their children. Due to the fact that decisions related to health care and nutrition are not made in isolation from other members of the society, researchers also identified three main categories of persons who could influence mothers' decision-making. In-depth interviews were therefore conducted with mothers-in-law (MILs), fathers, and health care providers, who comprised doctors, lady health volunteers (LHVs), lady health workers (LHWs), and dais (traditional birth attendants).

Researchers' interviews with mothers of healthy children from six months to twenty-four months old revealed that most of the mothers are still breastfeeding their children and intend to continue doing so until the children are anywhere from two to three years old. Many mothers, however, also bottle-feed their children, often because they fear that they do not produce enough milk to satisfy them. Anywhere from one-third to one-half of the mothers interviewed indicated that they bottle-feed their children to be sure that they receive enough nourishment, and many add that they have been encouraged to do so by their MILs, husbands, or doctors.

Mothers also reported introducing complementary foods to their children at a variety of ages, ranging from four to twelve months old. More than half of the mothers started their children on semi-solids later than the recommended time (six months of age). Although the decision about when to introduce complementary foods seems to be influenced by advice from relatives, such as a mother's own mother, her mother-in-law, or her husband, the women interviewed also reported that they took cues from the children themselves in regards to their feeding. Several mothers reported waiting to start their children on semi-solids until they reach out for a food or indicate interest in some other way, and many mothers report deciding how much food to feed a child as a result of the child's level of interest in eating. Approximately one-half of the mothers feeding their children semi-solids reported giving the children their own bowl or plate of food, while the other half have the children share their bowls.

The research indicates that there is not enough nutritional variety in what the children are eating

to assure them of a balanced diet. Most notably, the children are receiving too little vitamin A, vitamin C, and iron. A number of food taboos restrict feeding children many of the foods that would provide some of the nutrients they are lacking. For example, few mothers report giving their children fruits, vegetables, or meat, because these are often seen as harmful to or hard to digest for a young child. Children are often not fed the same food or at the same time as the rest of the family.

During interviews with mothers of children zero to twenty-four months with diarrhea, researchers found that although breastfeeding mothers tend to continue to breastfeed their children through episodes of diarrhea, many of them have a number of questions and concerns regarding how to deal with the child during illness. For example, they expressed doubts about how often to suckle the child, whether to begin complementary feeding of a child previously only breastfed, and whether to give the child medicine to stop the diarrhea. Some mothers said that certain foods, such as bananas, are beneficial for the child with diarrhea. Many mothers mentioned food taboos that affect the diet not only of the child with diarrhea, but also of the lactating mother. Although only a few mothers of children under six months old with diarrhea reported bottle-feeding their children, nearly one third of the mothers of children ages six to twenty-four months with diarrhea were bottle-feeding their children at least some of the time, many upon the advice of their husbands, MILs, and mothers. A majority of the mothers also reported beginning complementary foods with their children at seven months of age or later.

When researchers interviewed mothers of children recovering from illness, they found that some mothers increased breastfeeding during this period, while others decreased it or kept it at the same level. Opinions regarding when to introduce semi-solid foods varied, and a number of food taboos were mentioned.

Mothers-in-law seemed to be well-informed of and very involved in the care and feeding of their young grandchildren, and many of them reported offering advice to their daughters-in-law regarding what and how to feed them. Fathers tended to know much of what their children ate, but did not often know how much or how often they ate. This may be because fathers often shop for the food, but mothers (or sometimes mothers-in-law or other female relatives) usually feed the children and prepare the food.

Doctors, LHVs, LHWs, and dais (trained or untrained traditional birth attendants), reported providing families with advice concerning child nutrition. There is, however, considerable variation in the advice they report giving, not only among the members of each group of health workers, but among the groups as well. LHVs, LHWs, and dais reported making house visits although dais limit theirs to the postpartum period.

The Trials of Improved Practices (TIPs) that were part of this research tested recommendations with mothers of healthy children, children with diarrhea, and children recovering from illness regarding breastfeeding, introduction of complementary foods, variety of foods, frequency of

feedings, and quantity of food given at each meal. Of particular concern to researchers was that most children involved in this research were receiving fewer calories per day than necessary for their age and state of health.

Most mothers were able to significantly improve their children's diets in at least one of the following ways:

- Increasing frequency of breastfeeding
- Mixing milk in foods (as opposed to serving it as a drink)
- Giving soft foods between breastfeeds
- Increasing the frequency of meals
- Improving variety by giving children the same foods as the rest of the family and adding seasonal vegetables and fruits to the child's diet.

Despite significant improvements in caloric intake, only children in the younger healthy group (ages 6 - 11 months) reached an optimal number of daily calories. Improvements in the diets of younger and older sick or recovering children and older healthy children did not sufficiently raise their caloric intake. In a number of cases, children were receiving so many fewer calories to begin with that the improvements made by mothers were still not enough to raise their caloric intake to an appropriate level.

Mothers reported that they were able to adopt these practices for at least one of the following three main reasons: they wanted to improve their children's health and believed that these recommendations would help them do so, the practices were easy to carry out, and they were practices that did not take a lot of extra time.

A majority of the recommendations that may be made as a result of this research focus upon specific ways in which mothers can improve the diets of their children under two years of age. Many suggestions are also made regarding the support that influential family members, such as husbands and mothers-in-law, and health care providers, such as doctors, lady health visitors, lady health workers, and dais, can provide to the mothers in their efforts to improve the nutritional status of their children. In addition, the research suggests a need for improved sanitary practices on the part of the mothers as they prepare food and serve it to their children. It also indicated the need to ensure improved vaccination coverage of children under two years of age.

## Mothers Speak about Child Health and Nutrition

*"I had joint pains and was advised by the doctor to switch from breast to bottle-feeding for the child "*  
*'I suckle the child less frequently [during illness] If it suckles more often, the diarrhea will get worse '*  
*'My husband felt good when he brought a tin of cerelac, so I started giving it to my child "*

### Reactions to new feeding practices

*"This is good Every time I breastfeed I have a sinking-heart feeling Now I will increase my diet "*  
*"I will increase the intake of water I live with my in-laws That is why I cannot increase my diet They will say I feel hungry all the time "*  
*"The child is very small I feed him only when he is hungry "*  
*'The child doesn't have teeth How can he eat?'*  
*"The child has started eating and his cheeks are becoming red "*  
*"After eating semi-solids, the child is satisfied and sleeps well '*  
*"Okay, I will give milk to the child in a cup, as I don't have to boil the cup again and again, and I don't have to ask permission from anyone "*  
*"I've tried to feed the milk in a cup, but the child can't hold it and dropped it So I restarted bottle-feeding the child "*  
*"I cannot give milk in a cup The child is used to the bottle and I do not have enough breast milk If I do not give it with a bottle, she will starve '*  
*"I will tell my brother and sister to feed their children in this style so that their children get healthier "*  
*Now because he eats he does not bother me when I am eating "*  
*"I cannot do this because I am alone in the house and have three more kids I'll make firni for him whenever I have the time "*  
*"I cannot do this because my mother-in-law says that rice is a cold food "*  
*"I cannot give vegetables because his mouth gets blisters I like the recommendation but will start when he grows a little bigger "*  
*"My mother-in-law was not happy about it She said by feeding more the baby will pass more stools and will also get diarrhea "*  
*"Cleanliness is half of your faith "*  
*"Cleanliness is part of our religion "*  
*"We think that diarrhea is caused by weather heat and cold, and falling off the bed I am understanding a little bit '*  
*Four of my children have already died due to diarrhea All four did not pass urine and would faint, their lips were dry, and they died If I knew I would have tried earlier and would have practiced cleanliness I would not have used the bottle would have given Nimkol [ORS] I am pained to think they died because of diarrhea "*  
*"We can make it [ORS] at home too now Quickly show me how to do so I want to give it to the child There is no sugar My mother-in-law has locked it Now when my mother-in-law comes, I will make it You give me the salt quantity Thank you "*

## **B Research Methodology**

### **Objectives**

The objectives of the research were as follows

- Gather information to guide the development of IEC strategies at macro and micro levels
- Increase program planners' understanding of mothers', fathers', and mothers-in-law's beliefs about infant feeding, their reasons for current practices related to child nutrition and the constraints to changing behavior
- Investigate current beliefs on infant feeding of various community and health facility-based health workers, and assess their motivations and constraints to providing counseling on infant feeding
- Build capacity of NGOs to do qualitative/formative research and to design community-based nutrition interventions
- Test the acceptability and feasibility of potential recommendations for improving young child feeding at the household level
- Revise behavioral grids, which were based on literature research, in the light of new research
- Develop and revise new counselling cards
- Revise three chapters of the curriculum (Child Health and Nutrition, Maternal Health and Nutrition, and Child Spacing), counselling cards, and support group chapters

The MotherCare Program Coordinator and two local MotherCare/Manoff consultants conducted a thorough review of qualitative research studies on breastfeeding and other child-feeding practices. Their synthesis of the research, based on published and unpublished documents, included analysis of current behavioral practices related to child health and child feeding, as well as barriers to changes in those practices.

The literature review collected information in the following areas

### *Beliefs and practices surrounding*

- Young child feeding
- Childhood illnesses
- Control of diarrhea
- Traditional foods for infants

### *Understanding of*

- Importance of diet in young children
- Danger signs from diarrhea

From this review, researchers developed behavioral grids, which identified the information available as well as the information gaps that needed to be filled. After the review was complete, the NGOs involved in community-based counseling were asked to nominate master trainers trained in counseling skills to participate as researchers. In a national training workshop, the research team was oriented as to the purpose of the research and trained in skills for conducting qualitative research. In addition, the team helped modify the research instruments. At the training site in Murree, participants learned to conduct 24-hour recalls, to apply the TIPs techniques, and to conduct in-depth interviews. Tools were modified based on the field experience. Five-day training sessions were then held in each province to improve the research and supervisory skills of the NGO master trainers, to train the NGO research teams to conduct the formative research on MCH, and to finalize detailed strategies for conducting the research. Three more NGOs contributed staff to participate as researchers, and a second round of provincial trainings were held for all of the research teams.

The research targeted mothers of children under two about whose care and feeding specific messages were to be developed. Critical to understanding these practices were the *Trials of Improved Practices (TIPs)*, conducted with 91 mothers whose children were either healthy, suffering from diarrhea, or recovering from illness. This participatory research technique invites program participants to pretest potential program “products” or practices prior to their inclusion in the program. Besides helping to define practices, TIPs also indicate the relative ease or difficulty of people adopting the practices, the nature and strength of barriers to carrying them out, and benefits and other motivations to help overcome these resistances.

Researchers conducted three interviews with each mother. In the first interview, each child’s 24-hour dietary recalls was recorded. The research teams then analyzed the 24-hour recalls using the calorie charts and held a second interview with the mother to give her feedback on the dietary analysis and any problems identified. In this second interview, researchers offered recommendations of improved practices along with motivations to try the recommendations, and the researchers and the woman agreed on two recommendations for the woman to try with her child over the next five days. The interviewers returned on the sixth day, did another 24-hour recall, and discussed the mother’s experience of trying the recommended practices with her

child

Due to the fact that decisions related to health care and nutrition are not made in isolation from other members of the society, researchers also identified three main categories of persons who could influence mothers' decision-making. In-depth interviews were therefore conducted with mothers-in-law, fathers, and health care providers, including doctors, lady health volunteers (LHV), lady health workers (LHW), and dais/traditional birth attendants. The criteria for recruitment of the sample were as follows:

- Fathers with children 4 to 18 months old
- Mothers-in-law with grandchildren 4 to 18 months old
- Health care providers working in a community or a health facility. Teams were asked to recruit doctors/LHVs from both the private and the government sectors
- LHVs trained at public health schools and working with complete explanation of how to use each question guide, as well as how to record responses and discuss TIPs and 24-hour recalls
- 30% trained dais and 70% untrained dais

The sample included rural and urban communities in all four provinces (except Balochistan, where no urban sample was done). The NGO supervisors were asked to choose communities and villages where they were not working. Recruitment was done by field coordinators one day before the initial TIPs interviews. Recruitment of IDIs was done while the teams were doing the TIPs interviews.

## **C Study Participants**

The research targeted mothers of children under two years of age. A total of 87 mothers were interviewed to learn about their knowledge, attitudes, and practices regarding young child nutrition and care. Sixty-seven of these mothers were from rural and 20 from urban areas. Their ages ranged from 15 to 40 years. The mothers from both urban and rural areas had from 1 to 10 live children. Although most of the women were illiterate, some could read and some had even attended a few years of school, while one was a school graduate. Fifty-five lived in extended families ranging from 6 to 14 members, and 32 lived in nuclear families with 2 to 8 members. The study also included the main "influencers" -- fathers, mothers-in-law, and health care providers (see chart below).

All mothers were doing household chores, such as cooking, cleaning, and washing, but some were doing other work as well. Many mothers were additionally bringing fodder from the fields,

cutting it for the cattle herd, milking the cattle, and making cow dung cakes. A few mothers were also stitching and sewing to generate income. Their husbands tended to be low-paid employees in public and private sectors, while some were self-employed as farmers or fishermen. One husband was a teacher in a primary school.

## Formative Research Sample for Child Health

Participants	Method Used	Total	Rural/ Urban	Balochistan	N W F P	Punjab	SINDH
				28	32	36	32
				0	18	21	24
<b>Mothers</b>							
6-11 Healthy Child	TIPs	22	Rural 14	4	4	3	3
			Urban 8	0	2	4	2
12-24 Healthy Child	TIPs	20	Rural 16	5	3	4	4
			Urban 4	0	2	1	1
0-5 Child suffering from Diarrhea	TIPs	8	Rural 6	1	1	2	2
			Urban 2	0	1	0	1
6-24 Child suffering from Diarrhea	TIPs	14	Rural 10	1	3	2	4
			Urban 4	0	0	2	2
0-5 months Recovering Child	TIPs	11	Rural 9	1	4	2	2
			Urban 2	0	1	0	1
6-24 months Recovering Child	TIPs	16	Rural 12	1	3	5	3
			Urban 4	0	0	1	3
<b>Family Members</b>							
Father regarding Child's Health	IDIs	22	Rural 16	4	4	4	4
			Urban 6	0	2	2	2
Mother-in-law regarding Child's Health	IDIs	22	Rural 14	4	4	3	3
			Urban 8	0	2	3	3
<b>Health Care Providers</b>							
LHVs regarding Child's health	IDIs	38	U / R 10	1	2	4	3
Doctors regarding Child's health	IDIs		U / R 11	1	3	3	4
LHWs regarding Child's health	IDIs		U / R 17	2	5	5	5
TBAs regarding Maternal & Child Health	IDIs	28	Rural 18	3	4	7	4
			Urban 10	0	3	3	4

A total of 22 fathers were interviewed regarding the nutrition and care of their children under two years of age. Sixteen lived in rural areas and six in urban settings, and they ranged in age from 22 to 48 years. In general, they were low-paid private- or public-sector employees or low-income and self-employed. One was unemployed. The fathers tended to have much more education.

than the mothers, with 19 having attended from 4 to 12 years of schooling and only three unable to read at all. Sixteen fathers lived in extended-family settings, and six lived in nuclear families. They had from 1 to 10 living children, although nearly half reported having lost at least one child (In one family, five children had died.)

Researchers interviewed 22 mothers-in-law (MILs) regarding the nutrition and care of their grandchildren under two years of age. Fourteen MILs lived in rural areas and eight in urban areas. They ranged in age from 45 to 70 years and had from 1 to 14 grandchildren each. The grandchildren were from 5 to 18 months of age.

Eleven doctors were interviewed regarding the nutrition and care of their patients under two years of age. Six of the doctors practiced in rural areas and five in urban settings. Of the eleven, seven were male and four were female, and they ranged in experience in their communities from six months to 13 years.

Researchers interviewed ten lady health volunteers (LHVs) regarding the nutrition and care of their patients under two years of age. Nine worked in urban settings and one in a rural area. All ten were female, and their experience in their communities ranged from four months to 15 years.

Seventeen lady health workers (LHWs) were interviewed regarding the nutrition and care of their patients under two years of age. Of these 17, 10 worked in rural areas and seven in urban settings. Sixteen were female, and one, a medical technician, was male. Their experience in their communities ranged from one month to three years.

Twenty-eight dais were interviewed regarding the nutrition and care of their patients under two years of age. Of these 28, 22 had received professional training in maternal and child health (of from 2 weeks to 1 1/2 years duration) and six had not. Five of the six who were untrained were practicing in rural areas and one was in an urban area.

## **D Perceptions and Practices Regarding Child Nutrition and Care**

Researchers carried out in-depth interviews (IDIs) with mothers, fathers, mothers-in-law, doctors, LHVs, LHWs, and dais (TBAs) to learn about their knowledge, attitudes, and practices regarding the care and feeding of children under two. On most topics, responses were fairly consistent.

### **Mothers' perceptions and practices regarding the feeding and care of healthy children ages 6 - 11 months**

*Health status* Twenty-two mothers of healthy children from 6 to 11 months of age were interviewed. Review of their vaccination status revealed that only four of their children were completely vaccinated according to the standards of the national Expanded Program for

Immunization (EPI) Five were unvaccinated or incompletely vaccinated, and eight mothers could not recall what shots or how many their children had received. When asked about episodes of child illness, mothers responded that diarrhea, fever, coughs, and cold were rare.

*Breastfeeding* Twenty of the 22 mothers reported that they were still breastfeeding their child and gave the following reasons as support for the practice: "mother's milk gives energy," "saves from diseases," "development is better," "less expensive," "satisfies the child," "easy to digest," and "is always fresh." When asked how long they intended to breastfeed the child, most answered that they would continue until the child was two years of age, for religious reasons as well as because they were so advised by "elders in the family." About one half of the mothers believed that they had sufficient milk for their children, and the other half believed they did not. The latter group explained their belief by saying that the child kept crying, was getting weak, was not playing, and took a bottle eagerly. Those who believed they had sufficient milk supported their statement by saying that the child was satisfied, playful, slept well, and did not cry, and the mothers had a feeling that their breasts were full of milk.

*Bottle-feeding* Almost half of the mothers were bottle-feeding their young children. Four mothers had introduced the bottle during the first two months of life and the rest between five and nine months. They supplemented breastfeeding with bottle-feeding to be sure that the child received enough to eat or to help the child sleep through the night. Some mothers decided on their own to bottle-feed, while others were influenced by advice from their MILs or sisters-in-law (SIL). The most commonly-given milk was buffalo milk, in large part because of its easy availability, but cow's milk was also given. Mothers report that they are the ones who usually give the child the bottle, although the MIL or SIL -- or at times the father -- will give it.

*Semi-solids* Although almost half the mothers reported starting to give their children semi-solids between four and six months, almost one-fourth of them waited until seven to eight months, a few began at nine to ten months, and the rest after ten months. Buffalo milk was the most common food given, although bananas were also frequently cited, as well as cerelac/farex, khichri/rice, egg, and kheer. Some of the mothers said they began to give semi-solids because the child began to grab for food, while others believed they did not have sufficient milk for the child. In general, the mothers seem to have responded to what the child has indicated as his/her preference (i.e., "child is satisfied as he refuses to take more", "The child can only eat as much as he can, I can't force him.") The quantity that the mothers reported giving per serving was insufficient, however, indicating that perhaps they do not have a good idea of the amount that a child in this age group should eat.

Although mothers of children in this age group reported giving a variety of foods to their children, they were, in fact, giving a variety of cereals, but not enough of other types of food. Few mothers mentioned giving their children any fruits or vegetables, and none reported giving any meat. In general, sources of vitamins A and C as well as iron were missing from the children's diets.

*Food taboos* The majority of mothers reported withholding from the children in this age group foods that were served to the rest of the family, because they believed that these foods would harm the children. Vegetables such as brinjal, squash, cauliflower, spinach, ladyfinger, and potato were withheld, because they would bring “badi” and garam, leading to diarrhea or sore mouth. Such lentils as “masoor” and gram dahl were not given for the same reason, with the additional fear that these would produce “gas.” Wheat or corn roti and vermicelli were hard to digest in the opinion of six mothers, and lassi was “cold” and could cause bad chest. Meat curry was difficult for a child to digest, and biscuits “stick in the stomach.” Citrus fruit and grapes were bad for the throat and worse still for the chest. Banana, if given in small quantities, caused constipation, but if given in large quantity, caused diarrhea. Roti could cause choking in small children and rice might lead to distention, being “badi.”

Meat was mentioned by five mothers as heavy and harmful, and lentils were hot and “badi.” Less commonly fed foods that were cited as causing problems were kachalo, spicy food, egg, colostrum of buffalo, and biscuits.

Mothers were informed about these feeding guidelines by their mothers (seven), MILs (six), neighbors (five), or their own experiences (five). Interestingly enough, no mother mentioned mass media or health workers as a source of information regarding these practices.

*If the child refuses to eat* Most of the mothers reported that when a child refuses to eat, they “just leave the matter” and try again after a while. A few said that they would offer alternative food, while two mothers mentioned that they would coax the child to eat. Some mothers did not respond to this question. A few said force feeding makes the child sick or stubborn.

### **Mothers’ perceptions and practices regarding the feeding and care of healthy children ages 12 - 24 months**

*Health status* Twenty mothers of healthy children ages 12 - 24 months were interviewed. Half of the mothers (10) reported that their infants were fully vaccinated, five said that their children were incompletely covered, two were unvaccinated because of lack of access to health care, and for the rest, information was incomplete, because the mothers could not recall when, what, and how many shots the infants had received.

When asked about the kind and frequency of episodes of illness in their children, mothers mentioned episodes of diarrhea, acute respiratory infection, colds/coughs, and fever. The proportionate difference in the frequency of illness was not significant between the urban and rural areas. When asked about frequency of illness episodes, equal numbers of mothers reported that their children got sick “often (five),” “sometimes” (five) and “rarely” (six).

*Breastfeeding* Thirteen mothers were still breastfeeding their children for anywhere from four

times a day to “on demand,” and were planning on continuing to do so for anywhere from one month more to until the child reached three years of age. Mothers reported that they were breastfeeding still for religious reasons, on the advice of elders, and for the health of the child.

*Bottle-feeding* Seven of the 20 children were being bottle-fed. Bottle-feeding was introduced within a month for six children and at 11 months for one child. Reasons mothers gave for bottle-feeding included being able to see how much the child was consuming, being able to allow others to feed the child, and the advice of a doctor, MIL, or other relative.

*Semi-solids* Seven out of 20 mothers introduced semi-solid food to their children between four and six months, another seven mothers at seven months and four between eight and twelve months. At one year of age, two infants were not yet on semi-solids. Mothers often cited bananas, khichri, and roti as preferred semi-solids, but also mentioned cerelac/farex, egg, halwa, kheer/firni, vermicelli, vegetables, and yoghurt. It should be noted that food choices are affected somewhat by seasonality. For example, yoghurt is less popular during winter, when this study was conducted. In most cases, mothers reported that they fed their children, although sometimes it was the elder daughter or SIL. Rarely was it the husband, MIL, or FIL.

*Food taboos* As in the case of younger children, children from 12 to 24 months are often not given the same foods that are consumed by other members of the family. Examples of foods not given to young children include vegetables, such as carrots, cauliflower, spinach, and lady fingers, because these can cause indigestion, while apples, oranges, and cold drinks are believed to lead to “bad chest.” In addition, some mothers believed that young children can not digest daal and meat, that tea can cause diarrhea, as does spicy food, and that egg is “hot” (‘Garam’).

*If the child refuses to eat* Mothers reported responding to the children’s preferences as to what and how much to eat. More than half of the mothers were satisfied with the amount that their children ate, although no mothers indicated just how much and how often they were feeding their children of this age. Sixteen mothers thought that their children were growing well, while four did not. Most mothers who thought their children were growing well used developmental milestones as their points of reference, while others looked at growth, absence of illness, the tightness of clothes, and the children’s demands for food. Mothers reported receiving advice on these matters most often from their mothers, but also from their MILs. Less often, it was from husbands, neighbors, or SILs, and only once it was from a TV program.

*Eating with the other family members* Slightly more than one half of the mothers said that their children enjoy eating with the family or that when the family sits for food the child automatically crawls or walks up to them, and also this creates a good habit of sitting together as a family. The rest of the mothers did not include the children with the rest of the family at mealtime, because they did not want to spoil the child, or have the child be a bother, or for fear of “nazar.” When asked at what age a child should begin to eat with the rest of the family, mothers said at

anywhere from three to seven years of age, between 15 to 24 months, or when the child learns to walk

Half of the mothers said that their young children had their own bowl or plate for eating, while half said that they did not. Those who said that a child should have his/her own bowl maintained that the "mother can make a better guess of the amount consumed" (three), "children feel happy to take food from their own plate," and that "mothers liked it this way" (two)

### **Mothers' perceptions and practices regarding the feeding and care of children ages 0 - 5 months with diarrhea**

*Health status* Eight mothers of infants 0-5 months of age (two urban, six rural) were interviewed to explore the feeding practices during acute illness. Of the eight, the five who were exclusively breastfeeding their infants reported that their children rarely got diarrhea, while the two who were totally bottle-feeding their children said that the children often got diarrhea, and the eighth mother, who was breastfeeding and bottle-feeding, said that her child sometimes had diarrhea

All eight children had diarrhea. One out of eight had associated fever, and five had vomiting as well. Watery diarrhea was reported in three, while the rest were reported to have frequent, loose, offensive stools

The children in this group ranged in age from 3 1/2 to 5 months of age. Although all eight had received their BCG vaccination, none was appropriately vaccinated according to the national EPI standards. All eight should have already received three doses of DPT and oral polio, however, only one had received two doses of DPT and polio, while the rest had received only one

*Mothers' beliefs regarding causes, dangers and treatment of diarrhea* Three mothers attributed their children's diarrhea to food consumed by them (the mothers), one to cold, one to a fallen fontanel, another to dirty bottles, and the rest did not know what caused diarrhea. Mothers considered diarrhea dangerous if it did not improve with medication or if the infant looked lethargic and lazy. One half of the mothers said that they would consult a doctor or get medicines or injections to stop the child's diarrhea. A few said that they use home remedies (e.g., poppy flower extract or "urq-shirin"). It was also considered dangerous if there was associated respiratory infection, or incessant vomiting. No mother expressed dehydration as dangerous, and only one of the mothers recognized one sign of dehydration (the others did not recognize any). A few, however, were giving SSS or ORS. Only one mother was giving her child additional water

*Breastfeeding* As stated above, five mothers were exclusively breastfeeding their young children, two gave both breastmilk and bottle, and one gave bottle only. Within the exclusively

breastfed group, three mothers started additional food like egg, water, qaawa, and urq-shirin during diarrhea. Several mothers expressed concerns about how best to feed the child during diarrhea, one reporting that she suckled the child less often to prevent the diarrhea from getting worse, another worried because she feared she didn't have enough milk in her breasts, and another was concerned because the child had no appetite. Yet another mother believed that it was more important to focus on giving the sick child medicine than breastmilk.

*Bottle-feeding* The mother who was exclusively bottle-feeding her child tried several types of milk, but decided that buffalo's milk suited her child best. The two mothers who both bottle-fed and breastfed did so because they believed that the combination kept their babies satisfied. Both introduced the bottle at one month of age.

*Complementary feeding* The mothers' opinions varied as to when to begin complementary feeding and their answers were evenly distributed over 4 -12 months of age. As to the right age for starting semi-solids, four mothers believed that 4 - 6 months was the proper age when breastmilk is not enough for the growing needs of the infants. Those who believed in starting between 9 - 12 months said that this is the time when infants should get used to the food that they will take when they grow up.

Most of the mothers believed that when a child in this age group has diarrhea, it is good to give banana, because it helps reduce the number of stools. A smaller number of mothers believed that "khichri" was good for the same reason. Two mothers believed that tea would help stop diarrhea.

*Food taboos* Mothers considered buffalo milk heavy and felt that it should not be given during diarrhea. Yogurt and citrus were seen as bad for the chest of the child. As for the diet of the mother, the following foods were perceived as ones that mothers should not eat while the child has diarrhea: spinach, daal (masoor and gram), and "hot" foods such as egg, meat, and fish. Some mothers thought that they should take light meals like khichri and avoid roti and curry. In addition, "badi" foods should be avoided, because they can cause distention in the baby.

### **Mothers' perceptions and practices regarding the feeding and care of children ages 6 - 24 months with diarrhea**

*Health status* Researchers interviewed fourteen mothers of children 6 - 24 months of age with diarrhea. According to the mothers, six of the children often had diarrhea, five sometimes had it and three rarely suffered from it. Most of the mothers described the diarrhea as loose, frequent, offensive stools, with the number of stools ranging from 4 to 20 per day. One child had watery diarrhea, another had bloody mucous in the stool, and several of the children had associated vomiting, and a few had fever. Various mothers reported that their children with diarrhea looked weak, were lazy or cried, disturbed or cranky, wanted to be carried all the time, or threw up.

everything that was put in their mouths. Most of the mothers added that the children also had poor appetites. Four mothers, however, said that their children were active and smiling.

*Mothers' beliefs regarding causes, dangers and treatment of diarrhea* Mothers advanced several theories as to the causes of their children's diarrhea, such as particular foods, teething, cold, missing "someone dear," fallen fontanel, "nazar," or dirty bottles. Several mothers had no idea about the causes of diarrhea. Most mothers were very concerned about their children having diarrhea and wanted to do something about it. Besides being concerned about loose stools and vomiting, mothers also worried about associated respiratory infection, weight loss, and weakness, and a few expressed concern about and some understanding of dehydration.

A number of mothers reported that they would consult a doctor to get medicines or injections to stop the child's diarrhea, while others said that they would give home remedies, such as "phakki" or "urq-shirin", and only one reported giving her child ORS. Some mothers could not access health care because of distance or lack of money.

*Breastfeeding* Nearly all of these mothers continued breastfeeding their children during the children's episodes of diarrhea. Two reported increasing the number of breastfeedings during diarrhea, either in response to the child's thirst or because the child's appetite for other foods had fallen off. Mothers who decreased the number of suckling times per day said that they did so because the more the child suckled, the more he/she would have diarrhea, or because the child's appetite was diminished.

*Bottle-feeding* Nearly one third of the mothers of children in this age group were bottle-feeding their children at least some of the time, many upon the advice of their husbands, MILs, SILs, and mothers. A chief reason for doing so was that a combination of breast and bottle was perceived to be best for the child. Some women also said that they did not have enough breastmilk to satisfy the child. Most had introduced the bottle before the child was two months old and at the time of these interviews, combined breast, bottle, and complementary feeding.

Those who did not bottle-feed their children thought that the bottle was a source of contamination, which could make a child have diarrhea.

*Complementary feeding* Two-thirds of the mothers in this group believed in introducing complementary foods to a child between 7 - 12 months, and they did so to make the child grow and be more active. These mothers reported receiving advice from their MILs or doctors about this. Four of the mothers, however, whose children were between 11 - 23 months, had not yet introduced complementary foods, because they believed that starting those foods before two years, 18 months, or one year (depending upon the mother) would cause diarrhea, indigestion, or constipation, or that it was foolish to give the child other foods when milk could satisfy him or her.

Most mothers believed that bananas were good for reducing the number of diarrheal stools,

while some mothers believed the same about khichri. Opinions varied as to other foods that might help strengthen a child with diarrhea, but included “firni,” “kheer,” porridge, rice, and rusk. Two mothers believed that tea would help stop diarrhea.

*Food taboos* Opinions also varied as to foods that should be avoided -- different mothers mentioned different ones and for different reasons. For example, roti, halva, vermicelli, kheer, and ghee, were considered “heavy” by some mothers, while meat and daal were cited as difficult to digest by some, and yogurt and citrus were said to be bad for the chest of the child. Potatoes and “kachalo” were said to produce gas, and spicy food and curry could worsen diarrhea. But these beliefs were not necessarily widely-held.

### **Mothers’ perceptions and practices regarding the feeding and care of children ages 0 - 5 months who are recovering from illness**

*Health status* Eleven mothers of children ages 3 - 5 months old were interviewed during the recovery of their infants from an acute illness. Five stated that their children rarely got sick, one said that her child sometimes fell ill, and five stated that their children were often sick. There were nine episodes of diarrhea, two of fever, two of colds/coughs, and two of acute respiratory infections. None of the children in this group was fully vaccinated according to the national EPI standards. Out of the 11 children, six had received some vaccinations, but five had received none.

*Mothers’ indicators for recovery* Mothers considered the indicators for recovery to be improved strength, not crying, better weight, active and fresh, happy and playing, better complexion, or eyes not sunken anymore. Seven mothers stated that their children had regained their pre-illness strength, while four said they had not. The latter group considered the following indicators as evidence that their children had not recovered well: does not play, very lazy, not active, looks weak, crying, or does not take food.

*Breastfeeding* Nine of the 11 mothers were breastfeeding their infants, five exclusively and four partially. All nine who were breastfeeding continued to do so during their children’s illness and recovery. When asked whether they changed the frequency of breastfeeds during the child’s recovery, approximately one half of the mothers said that breastfeedings increased, and the other half said that they stayed the same or decreased. Most mothers thought that during recovery, the child’s appetite had improved and hence the demand for more frequent feedings. Some of the mothers who made no change did so on the advice of the doctor, while others thought the child was too small and frail to take more food.

*Bottle-feeding* Two children in this group were exclusively bottle-fed, and four more received a combination of breastfeeding and bottle-feeding. The bottle was introduced at between 2 to 21 days of age, and was given for a variety of reasons, ranging from one mother’s fear that her

breastmilk had caused the deaths of her two previous babies, to mothers' fear that they had insufficient milk, to a mother's need to work outside the home. A few mothers reported having tried to use a cup and spoon, but found it too difficult. Most of the time, the advice for bottle-feeding came from the mother's MIL or SIL, and sometimes from the husband or father. An undetermined number of mothers used a bottle to feed their children tea, cardamom, "qaawa," "bazing," and water.

*Complementary feeding* Two mothers reported giving their five-month old children semi-solids, and did so because they believed that milk alone no longer satisfied them. Both women were advised by a doctor to do so, and also saw a message on TV about it.

Mothers of this group of children believed that the right age for introducing semi-solid food was 4 - 5 months (7 mothers), 7 - 8 months (1 mother) or 12 - 18 months (3 mothers). When asked how to know when to start giving semi-solids, mothers gave the following responses: "I will give food when the child demands," "[The child] can digest food only at this age," "If given before this age, [semi-solid food] will cause diarrhea in the child," "I don't feed anything but milk before this age."

### **Mothers' perceptions and practices regarding the feeding and care of children ages 6 - 24 months who are recovering from illness**

*Health status* Researchers interviewed 16 mothers of children 6 - 24 months old who were recovering from illness. Three of the children were fully vaccinated according to the national EPI standards, but five were unvaccinated and eight were either partially vaccinated or their vaccination status was undetermined.

*Mothers' indicators for recovery* Nearly half of the mothers thought their children looked as healthy as before falling ill, but slightly more than half believed that their children did not seem as healthy as before. The indicators that a child had recovered pre-illness strength were as follows: "fresh complexion," "plays around," "naughty and laughs," "sleeps peacefully," and "looks good." On the other hand, mothers considered the following indicators as evidence that the child had not regained pre-illness strength: "can't even sit," "looks thin," "cannot move around like before," and "feels lighter when I carry him in my arms."

*Breastfeeding* Two mothers reported giving breastmilk less frequently, one in response to the child's diminished appetite and the other because the mother herself felt weak and had little time for frequent feedings. The other mothers made no change in frequency of breastfeeding, but said that they responded to the demands of the child.

*Bottle-feeding* Half of the mothers reported that they were bottle-feeding their children, either because of "insufficient milk," "C-section," or "so the child becomes plump." Five mothers had

begun bottle-feeding when their children were 0 - 4 days old, while the rest began when their children were 2 - 9 months old. No child was switched from breast to bottle during recovery from illness.

*Complementary foods* Twelve mothers said that a child should begin to be weaned at 4 - 6 months of age and reported that they began their children on semi-solids at around that age. Four mothers of children 10 and 12 months old had not yet begun with semi-solids, one on the advice of a doctor.

The amounts and frequency of semi-solids given were as follows:

Children ages 6 - 11 months	1/2 banana and 1/4 small plate of rice or yoghurt once a day
Children ages 12 - 17 months	1 banana, 2 tablespoons, or 1/3 pao of rice, 1/4 or 2 - 3 morsels or roti or paratha twice a day
Children ages 18 - 23 months	1/3 pao of rice, a small piece of roti in "shorba," or 1/4 of a banana per serving 3 - 5 times a day

*Food taboos* Mothers reported the following beliefs: "Saag" can lead to diarrhea. MIL said not to give roti. Rice can worsen acute respiratory infection. "Salan" can cause a cough. "Doodh-pati" makes a child have trouble sleeping at night. Fruits are "cold" and can pack the chest with secretion (phlegm).

## **In-Depth Interviews with Fathers**

*The health and care of young children* Researchers interviewed 22 fathers of children 0 - 24 months old. When asked who was responsible for the health and welfare of the child, almost half of the fathers responded that it was the father, because he earns for the family and gets medicine when the child is sick. A few stated that it was the mother's responsibility, because she spends the most time with the children. But one half of the fathers said that the responsibility should be shared by the father and mother.

Most of the fathers stated that they assured the health and well-being of the children by providing them with healthful food, good, clean clothes, a proper education, a sense of "punctuality and responsibility," opportunities to play and to go for walks, and health care when they need it. When asked about the present state of health of their children, fathers identified the following indicators of good health: laughter and play, sleeping well at night, good complexion, free of disease, mentally alert, chubbiness, and good appetite. On the other hand, fathers believed that the following indicated poor health: frequent coughs and colds and lack of

or poor appetite

Most of the fathers interviewed reported that they played with their children, although often what they termed “play” was spending time with and taking care of the child. Very few fathers, however, were involved with the bathing or feeding of their children, leaving those tasks to their wives

*Decision-making regarding food purchase and preparation* In the majority of cases, the fathers purchase the family food, as well as the plates, bowls, spoons, and necessary utensils, toys, and clothes. Of the nine fathers who responded when asked who decided what food to buy, eight indicated that they themselves would decide. However, they reported that it was the mother herself or the MIL who decided what food to prepare, and it was usually the mother who fed the young child

When asked whether they would buy different foods if they had more money, most of the fathers responded “yes” enthusiastically, however, when asked to specify which foods they would buy, they mentioned foods that the children seem already to be getting routinely

*The young child’s diet* When asked what foods their young children ate on a regular basis, fathers mentioned fruit, suji, kheer, dalia, and khichri, meat and chicken, biscuits, buffalo’s milk, and breastmilk. None of the fathers mentioned quantity of food given or frequency of feedings unless prompted. All but two of the 14 fathers who responded to the question of whether their children were taking enough food answered that they were, but the two other fathers were unsure because of their limited resources

More than half of the fathers reported advising their wives what to feed the children, especially in regards to quantity of food, frequency of breastfeeding, quantity of milk in a bottle, cleanliness, and variety. Some advised against feeding during illness

All fathers had something to say about which foods are good for children and were often quite specific about the benefits to the child. Their beliefs are listed in the table below, organized according to the benefit accrued to the child, as follows

Keep the child healthy	Breastmilk, fruit (apple, banana, pomegranate, grapes), yoghurt, chicken/mutton broth, kheer of basmati rice, desi ghee, cow’s milk, haleeb milk (A few fathers also mentioned cauliflower, spinach, brinjal, and tomato )
Easily digested	Breastmilk, soft food, khichri, banana, vermicelli, kheer, egg

Energy food	Breastmilk, apple, banana, grapes, chicken broth, soft food cooked in butter, boiled basmati rice, egg, fish
For growth and development	Breastmilk, suji ka halwa, fruit, chicken, egg, meat, dalia
To protect from a cold	Egg, tea, medicine (after consulting the doctor)
Prevention of disease	Breastmilk, honey, meat broth, desi ghee, butter, suji, cow's milk
If the child cries	Naunehal (gripe water), almonds (after soaking and grinding)
Food that children love to eat	Apple, grapes, pomegranate, biscuit
Food that all children get	Naunehal, vegorin, breastmilk, apple

The inter-provincial or rural/urban differences were not remarkable

When asked the size of servings given to their children, most fathers guessed, but in reality, few fathers watched a whole meal taken at one time. They did, however, express concern regarding over-eating, which was perceived to lead to indigestion, vomiting, and loose stools.

*Food Taboos* Eighteen of the 22 fathers offered opinions on foods that can be harmful for young children. Their beliefs are summarized in the following table (along with the number of fathers who reported each one).

Tea (7)	kills appetite, is hot ("garam"), harmful
Food from bazaar (4)	contaminated, can cause diarrhea
Oranges, fruit, kino (5)	can cause bad throat and bad chest
Roti (4)	difficult to digest, can give bad stomach
Deep fried food (4)	harmful
Bottle-feeding (3)	can cause diarrhea
Vegetables (1)	can cause diarrhea
Apples (1)	flies can sit on them
Stale fruit (1)	causes malaria
Yoghurt and cream (1)	bad for the chest
Sweet food (1)	worm infection

Bottle and soother (1)	Mal-alignment of teeth
Beetlenuts (1)	renal stone

*Food hygiene* Most of the fathers were quite concerned about food hygiene and had strong opinions regarding it. Many cited the need for the mother to wash her hands before feeding the child, to serve freshly-prepared food, to keep utensils clean, to cover food to protect it from flies and dust, to keep the child clean, and to clean the feeding bottle well, and two fathers mentioned the need to boil the water that the child will drink. When asked what they, their wives, and mothers do to ensure cleanliness, the fathers responded that they keep the cooking area clean and free of flies, protect food from flies, keep utensils clean, serve freshly-prepared food, and wash hands. In addition, two fathers mentioned that the breastfeeding mother should keep her body and clothes clean to save the child from illness.

*Breastfeeding* Eighteen of 22 fathers reported that their wives were currently breastfeeding their child and that the fathers supported them in doing so. Most fathers said that breastfeeding was necessary to keep the young child healthy and growing well. Various beliefs supported their encouragement to breastfeed, including the belief that breastmilk saves the child from disease, is a gift of God, is natural, and readily available. Few said that they gave their wives advice regarding breastfeeding, because their wives already knew its importance. However, eight reported that they advised their wives to offer the children buffalo's milk or commercial formula, because they believed that the mother was not producing enough milk to satisfy the child, the child was not growing well, or the mother was producing more milk from one side than the other. In addition, several fathers reported that it is easy to bottle-feed a child.

### **In-Depth Interviews with Mothers-in-Law (MILs)**

*The health and care of young children* Twenty-two grandmothers of children under two years of age were interviewed to learn about their knowledge and beliefs and the extent of their participation in the care and nutrition of their grandchildren. Seventeen grandmothers considered their grandchildren were healthy, citing the following indicators of good health as evidence: "red in cheeks," "growing," "good appetite," "laughed," "played," "slept well," and "did not fall sick." One grandmother proudly said that her child accompanied her while she was shepherding the sheep. Three grandmothers believed that their grandchildren were unhealthy, saying that those children were weak, crying, or sick with some disease.

All of these grandmothers believed that diet plays an important role in the health of young children, and that a good diet keeps children healthy, protects them from disease, and helps them grow and develop. Most of the grandmothers reported that their grandchildren were eating the right kind of food, such as buttered roti, milk, dalia, khichri, fruit juice, and sweet meats. They seemed well-informed as to the diet of their grandchildren, judging from the amount of detail they were able to offer about it. Some of the grandmothers reported that the children were

eating enough food presently, while others believed that their grandchildren needed to eat more

When asked what foods were good for children, grandmothers answered according to the child's age, as follows

4 - 6 months	choori, breastmilk (easy to digest), cerelac (provides energy), soft cooked food, and khichri (gives energy and strength)
7 - 24 months	fruit, farex, khichri, breastmilk, buttered roti with curry (all sources of energy), meat, and vegetable soup

*Breastfeeding* The grandmothers felt very positive about breastmilk, believing that it was readily available, easy to give, and protects from disease. A vast majority of them believe that it is a religious injunction to breastfeed a girl for three years and a boy for two years. All reported giving their DILs advice about breastfeeding, during pregnancy and afterwards. Most said that they advised their DILs to eat a good diet in order to be able to produce good and plentiful milk. They also have certain ideas of what foods the lactating mother should avoid.

*Complementary foods* Grandmothers reported that the correct time to introduce semi-solid foods is either 4 - 6 months (7 responses) or 9 - 11 months (13 responses). Some had specific suggestions regarding amounts and frequency of feedings, saying that the child should either eat often enough to make him/her plump, as frequently as she/he demands food, or on an hourly schedule. A few, however, expressed concern that eating too much would give a child indigestion.

*Food taboos* Grandmothers believed that the following foods should be totally avoided: meat, fried food, spicy food, sour food, apples, oranges and other citrus fruits, lentils, fish, eggs, and "dahi barre". In addition, grandmothers believed that there were certain foods to be avoided according to the age of the child. They were as follows:

Age of the child	Foods the child should not eat	Foods the lactating mother should not eat
4 - 6 months	green leafy vegetables, daal, meat, fried and spicy foods, sour foods	eggs, "hot" food, and dirty food

7 - 12 months	apples, corn, lentils, vegetables, carrots, meat, eggs, beef, trotters, kebab, "pakoras," oranges, oily food, sour food, and bananas	beef, brinjals, radish, carrot, "hot" food
12 - 23 months	(none listed)	dahi barra, potato, lentils, peas, meat and fish, paparr, ice lola, kulfi

*Role of the grandmother in the care of the grandchildren* With one exception, all said that they hold their grandchildren, play with them, and tell stories. A vast majority also feed the children, and some even participate in buying food for the family.

## **In-Depth Interviews with Doctors, Lady Health Visitors (LHVs), and Lady Health Workers (LHWs)**

*Background* Eleven doctors, 11 LHVs and 16 LHWs were interviewed to learn about their knowledge and practices regarding infant feeding and what advice they give mothers on infant and young child care and feeding. The practical experience of the doctors ranged from six months to 15 years, of LHVs, over 15 years, and of LHWs, two years. Two LHWs were working for NGOs for eight to nine years. For this report, the health technician and midwife are included in the group of LHVs.

*Nature of work with mothers and young children* Doctors reported that they handle managerial, emergency care, and health education responsibilities. They treat children for diarrhea, ARI, and worms and provide mothers with advice on breastfeeding and weaning.

LHVs perform the greatest variety of maternal and child health (MCH) services, offering antenatal care, health and nutrition education, delivery and care of the newborn, vaccinations, and family planning. They reported seeing children for illnesses such as diarrhea, acute respiratory infections (ARI), worms, fever, and malnutrition. Most also reported that they do home visits.

LHWs, who perform a more limited number of tasks in MCH care than the LHV, reported that home visits are a major part of their responsibilities. During home visits, LHWs vaccinate both mothers and children, provide breastfeeding and nutrition counseling, put mothers in touch with dais, and offer family planning advice. They also reported seeing children with ARI and weighing children in health houses.

*Treatment of and feeding during illness* When asked what they recommend when a child has diarrhea, most of the doctors, LHVs, and LHWs cited oral rehydration therapy (ORT), medication, continued breastfeeding (“to keep up energy”), and checking for weight loss. LHVs and LHWs also mentioned giving the child soft food. For the treatment of ARI, doctors and LHWs recommended medicine and “proper” foods (although which foods were proper was not noted), including breastfeeding. No recommendations from LHVs were listed. To combat malnutrition, both doctors and LHWs reported recommending breastfeeding and proper/appropriate weaning foods (again, which were the proper or appropriate foods was not mentioned), and many LHVs reported providing mothers with nutrition education.

*When to initiate breastfeeding* Nearly every doctor, LHV, and LHW reported advising mothers on when to initiate breastfeeding after birth. Answers given by doctors and LHVs ranged anywhere from immediately after birth to four hours after birth. More than half of the LHWs, on the other hand, advised initiating breastfeeding immediately after birth, and the rest recommended starting from one half hour to two hours afterwards.

*Bottle-feeding* Opinions were more or less equally divided in the three groups of health professionals. Those who considered bottle-feeding as “bad” advanced these reasons: “can cause diarrhea,” “child can fall sick often,” “can cause chest infection,” “can reduce breastmilk production,” “bottle is difficult to clean.” Those who considered bottle-feeding as good argued that “it is convenient” and “if the mother goes to work, someone else can feed the child.”

*Lactation-related problems* Half of the doctors interviewed reported giving advice on lactation-related problems, however, the only advice cited was that mothers should try to improve their diets if their milk supply is low. LHV and LHWs reported offering the same advice to mothers concerned with the adequacy of their milk supply. Several LHV suggested massage for other breast-related problems, while some individuals recommended giving antibiotics, pills to dry up milk, and the frequent emptying of the breasts as solutions.

*Introduction of semi-solids* Most of the LHV and LHWs said that semi-solids should be introduced into a child’s diet after four months. Slightly more than half of the doctors reported giving the same advice, but almost half said that semi-solids should be started when the child is six months or older.

*Diet for a seven-month-old* Doctors, LHV, and LHWs alike said that the diet of a child at this age should include khichri (or khichri/rice) and fruit. Whereas only doctors mentioned yoghurt as a food for this age, both LHV and LHWs said that a child this age should also be given egg and vegetables. LHWs were the only group to mention meat and farex. In regards to frequency of feedings at seven months of age, there was much variation in the answers given by all respondents. Doctors said that the child should be fed anywhere from hourly to six times a day to whenever the child wants. LHV mentioned from five times a day to two times a day to “frequently.” LHWs answers ranged from five to six times a day to two times a day to as often as the child wants. A similar range of answers were given when the health professionals were asked how often a child of seven months should be breastfed. Doctors and LHWs said that the child should be breastfed anywhere from two to three times a day to “on demand”, and LHV said anywhere from “two-hourly” (presumably every two hours) to 12 times a day.

When asked how to be sure that a child is eating enough, a majority of respondents in all three groups cited growth monitoring as one method. Other answers included the child’s appearance in relation to his/her age, the child’s appetite, activity level, and disposition.

*Diet for a 14-month-old* Most doctors and LHV said that by the time a child is 14 months, he/she should eat what the rest of the family eats. There was considerable variation, however, in the number of times that a child of this age should eat, ranging from two to eight times per day. LHWs suggested that a child of this age should eat a variety of foods anywhere from two to eleven times a day.

*Food taboos* Respondents from all three groups said that children should not eat food “from the

bazaar ” Other kinds of foods that should not be given to children at this age are “hard” food, “hot” food, cold drinks, cold and sour food, and sour fruits. Examples of these kinds of food are not provided.

## **In-Depth Interviews with Dais (Traditional Birth Attendants)**

*Background* Twenty-eight dais were interviewed to learn about their knowledge and practices regarding maternal and child feeding and care. Ten were from urban areas and 18 from rural areas. They ranged in age from 20 to 70 years old, and 24 were illiterate. Three dais had no formal training, but learned their skills from a relative or on their own, whereas seven had received training in hospitals and the rest learned from apprenticing with LHVs and/or doctors.

*Frequency of home visits* Twenty-four of the 28 dais interviewed paid anywhere from three to 40 home visits during the “chilla” period (40 days postpartum). During these visits, the dais checked the mothers for bleeding and “pressed and massaged” them, as well as washed clothes and advised mothers about diet and personal cleanliness.

*Care and feeding of the newborn* A vast majority of the dais reported that families seek their advice regarding minor problems of newborns. Most of the problems related to feeding, and some related to vomiting or colic (for which some dais offered herbal remedies). Most of the dais reported that they advised mothers to breastfeed their babies, but again most said that they also suggest that mothers give water in addition to breastmilk. Only three said that a breastfed child less than four months old does not need water. Dais also advised lactating women on foods to avoid, because they may cause problems for the breastfed baby. Only one dai reported advising mothers to feed their babies colostrum.

*Diet for a seven-month-old* Dais recommended the following foods for a child of this age: banana, khichri, choori or soaked roti, vegetable, dalia, and meat. A few dais mentioned sago, kheer suji, biscuit, cerelac, and daal. When asked why they recommended these foods, 12 of the dais stated that a child at this age cannot be sustained on breastmilk alone. Other reasons were for the child’s “growth and development,” “required for health,” to “provide energy,” and to “keep the child satisfied.”

*Frequency of suckling* There was considerable variation in the answers given to this question. The responses ranged from two to three times per day to on demand or when the child cries.

*Diet of a lactating mother* Several dais stated that lactating mothers should eat extra food to give them energy and to help produce a good milk supply. Some recommended that women eat the following foods to this end: milk, egg, fish, lassi, yoghurt, “desi-ghee,” and fruit. Only a small number of dais mentioned green leafy vegetables, extra ghee, and cooked “turang.”

*Food taboos* Some dais recommended that lactating mothers should avoid daal, carrots, radishes, peas, turnips, apples, and milk, because these could lead to gas in the mother and colic/diarrhea in the child

*Breast-related problems* Many dais reported giving advice regarding engorgement of the breasts and mastitis. A few recommended washing with warm saline, but others suggested applying hot compresses, massaging the breast with warm oil, or manually expressing milk to “give the mother a lighter feeling.”

In response to mothers’ concerns that their milk supply was insufficient, most dais recommended improvements in the mothers’ diets, but four advised mothers to bottle-feed. Two dais advised frequent suckling to increase milk production.

*Bottle-feeding* Sixteen dais said that children should be given a bottle, but most recommended doing so only after four months of age. A majority, however, also stated that a bottle is difficult to clean.

*Introduction of semi-solids* Nearly half of the dais stated that semi-solids should be introduced to a child starting at four months, and six said that the correct age was five to six months. The rest recommended six to eleven months as the ideal time, saying that during that time the child had teeth to chew the semi-solid food and was better able to digest it.

Many dais cited bananas as the first semi-solid to be given, and many others advocated then adding custard, dalia, firni, or kheer, as well as khichri. A few mentioned suji, choori/roti soaked in broth, farex, and cerelac.

## **E Trials of Improved Practices (TIPs)**

Whereas the in-depth interviews conducted with mothers, fathers, mother-in-laws, doctors, lady health volunteers, lady health workers, and dais/traditional birth attendants provided researchers with important insights into present practices regarding child health and nutrition, the Trials of Improved Practices (TIPs) gave researchers opportunities to explore with the study participants the feasibility and acceptability of alternative practices. TIPs were conducted in the four provinces of Pakistan in both urban and rural settings in December 1997. TIPs were carried out with a total of 91 mothers, with healthy children 6-24 months old, children with diarrhea 0-24 months old, and children recovering from illness 0-24 months old. Tables with the numeric summary results of the TIPs interviews regarding child nutrition and care are provided in Annex D of this report.

The objectives of the trials were

- To test the acceptability and feasibility of possible recommendations for improving young child feeding at the household level
- To get realistic input from mothers on their willingness to try recommended changes and their response to trying the changes
- To gather information that will guide the development of an effective IEC strategy to improve feeding practices and child nutrition status

The sampling frame for the trials is provided below

<i>Health status/Age group</i>	<i>Rural</i>	<i>Urban</i>	<i>Total</i>
Healthy, 6-11 months	14	8	22
Healthy, 12-24 months	16	4	20
With Diarrhea, 0-5 months	6	2	8
With Diarrhea, 6-24 months	10	4	14
Recovering, 0-5 months	9	2	11
Recovering, 6-24 months	12	4	16
<i>Total Sample</i>	<i>67</i>	<i>24</i>	<i>91</i>

### **Healthy Children 6-11 Months Old**

#### **Feeding practices**

- All but two mothers were breastfeeding their children. Breastfeeding frequency varied from 4-15 times day and night. The majority of mothers were breastfeeding between 8 and 15 times in a 24-hour period and a few mothers were breastfeeding 4-5 times in a 24-hour period
- More than half of the children were receiving complementary foods but some mothers had still not introduced foods
- Frequency of feeding was inadequate for more than half of the children (fewer than three times a day)
- The quantity of food per serving was inadequate for most children who were receiving no more than 2-4 tablespoons of food per serving

- Slightly more than one fourth of the children were receiving enough calories per day Caloric deficits for the majority of children ranged from 55-580 kcal/day
- Foods given to children in the urban areas included biscuits, banana, eggs, rice, apple, suji halwa/kheer, yogurt, tea, and milk In the rural areas, three mothers were also giving cerelac, roti, boiled rice, khichri, and rusks with tea

### **Major problems identified in child feeding**

The trials with mothers of healthy children 6-11 months old revealed the following major problems

- Problem 1 Mothers are not giving complementary foods, not feeding frequently enough, or not giving enough food per serving
- Problem 2 Mothers are not providing enough of a variety of foods or foods rich in vitamins and minerals
- Problem 3 Mothers are giving other milks
- Problem 4 Mothers think they are too busy to feed the child
- Problem 5 Mothers are not using proper hygiene

### **Recommendations**

For all of the problems listed above, recommendations that were frequently offered and adopted by a majority of mothers included

- breastfeed 6-8 times day and night and feed semi-solids between feeds
- increase the frequency of meals to at least 3 per day
- give the child some of the family's vegetables, mashed If spicy add yogurt, potato or rice
- add in-season fruits or vegetables (mango, carrots, peas, apricots) at each meal
- mix milk in the food instead of giving milk to drink

Although other recommendations were not as popular among mothers, such as giving thick foods like firni or adding ghee or oil to foods, in the majority of cases, those who tried the recommendations said that they would continue Further detail on each of the recommendations is provided below

### **After the trials**

- 12 of 15 mothers were breastfeeding at least six times in a 24-hour period after the recommendations. The range of breastfeeding frequency narrowed from 4-15 times day and night to 6-14 times day and night.
- Frequency of feeding improved for most children who were receiving foods at least three times a day.
- Quantity per serving also improved but still fell short of the recommended amount for many children.
- All of the children who had been deficient in calories received more calories, and most reached their daily caloric requirement, as a result of increased frequency of meals and more breastfeeding. Those children who still fell short of the requirement had caloric deficits ranging from 100-370 kcal/day.
- All but one mother were feeding complementary foods after the recommendations.

The following pages summarize the recommendations offered to mothers to improve the problems identified earlier. Reactions of mothers to the recommendations are described for each problem. (See annex pages 7-10.)

**Problem 1 Mothers are not giving complementary foods, are not feeding frequently enough, or are not giving enough food per serving (20 of 22 mothers)**

Of all the recommendations discussed with mothers to address this problem, the following two were the most frequently offered and adopted. Half or more of the mothers who were offered these two recommendations chose to continue them.

- breastfeeding 6-8 times day and night and feeding semi-solids between feeds
- increasing frequency of meals to at least 3 per day

Most mothers who were asked to breastfeed 6-8 times and feed semi-solids between feeds reacted initially by saying that since they were already breastfeeding, it would be something that they could do. Mothers who tried were able to breastfeed 6-8 times and gave banana, khichri, firmi, and suji ka shera, biscuit, and yogurt between breastfeeds. The majority of mothers reacted well upon trying the recommendation because it was easy, children ate the foods and were more satisfied. Some were surprised that their child could already be eating these foods. One mother did not like the recommendation because she felt she did not have enough time to follow it.

Mothers who were not feeding their child frequently enough were advised to feed the child at least three times a day. The majority of mothers were able to try and continue this recommendation. Mothers were pleased with the recommendation because their children liked it, ate the food, were more satisfied, and slept better. One mother, who had agreed to try the recommendation but actually did not, said that she did not have time to feed the child more often. Another mother who did not continue the recommendation after trying it said it was because the child vomited when she tried feeding more often.

Other recommendations that were offered frequently to mothers but adopted by fewer than half of the mothers to whom they were offered included the following:

- increase the serving size for children 6-9 months old to ½ pao per meal
- make the child's diet thick like firni
- feed the child the same food as the family, and add yogurt, potato, or milk if spicy
- have a set meal time for the child
- add oil/butter or ghee to the child's food
- prepare special food, such as khichri, for the child

Thirteen mothers were offered the recommendation to increase the serving of food to ½ pao, to be given three times a day. The majority of the mothers reacted positively to the recommendation but expressed some doubt as to whether or not their child would be capable of eating that much food. Fewer than half of the mothers (6 of the 13) who were offered this recommendation agreed to try it, but of those who did, all but one intended to continue.

Twelve of 20 mothers in both the urban and rural sites were asked to thicken the child's food like firni. Mothers had positive reactions to thickening child's food initially, saying that they could do it. One mother said she would try so that the child would "become fat quickly." Other mothers were not so pleased with the suggestion because it would be time consuming and too costly to give frequently.

Fewer than half of the mothers (5) tried the recommendation, and all but one will continue. Mothers gave kheer and dahl, rice with added milk, salad with added curd, tea with added rusk, and roti softened in curry. Overall, mothers were pleased upon making the child's food thicker because the children liked it and slept better and because it saved time and was not an extra expense. The mother who did not choose to adopt the recommendation said it was because she had to take time out to feed the child. Another constraint mentioned by one mother was that the mother-in-law and husband did not approve of the recommendation because they believed the child would get diarrhea if given solid foods.

Feeding the child family foods and adding yogurt, potato, or milk if the food was spicy was offered to most of the mothers (17), of whom 9 agreed to try it. During the trial period, mothers gave kheer, yogurt with potato, and yogurt added to curry. The majority of mothers who tried

giving family foods (5) will continue and will also tell others about it. Mothers reacted to the trial saying that it saved time because they did not have to cook separately for the child or breastfeed as often.

More than half of the mothers (14) were asked to feed their child at a set meal time with the family. However, few mothers (5) agreed to try this recommendation. Some did not like it because they believed "The child cannot eat yet," "The child is very small. I feed him only when he is hungry," and "I have to feed him myself."

Although only five mothers actually tried the recommendation, of those who did, all but one intended to continue. After trying the recommendation, these mothers said the child cried less, they were less bothered by the child while eating, and they liked not having to take the child out to feed him or her separately. The mother who had tried feeding her child at a set meal time, but who did not intend to continue, explained that it was difficult because she usually puts the child to sleep so she can cook and feed the other children.

The recommendation to add oil, butter, or ghee to what is given to the child was discussed with 14 of the mothers. Most mothers reacted well initially, saying that it was possible to add ghee. Mothers who did not like the recommendation were resistant because they had not yet started giving foods to the child.

Only two mothers actually tried the recommendation. One mother added oil to the child's food and the other dipped roti in the slan. Among mothers who did not try the recommendation, resistances included lack of time for one mother and another mother was prohibited by her aunt to add oil because she believed the child would develop jaundice.

To encourage more eating, 13 of the mothers were advised to prepare special food, such as khichri, for the child. Most mothers reacted well to the suggestion at first, but none of them agreed to try making a special food. One mother was resistant because her mother-in-law said that, "rice is a cold food and cannot be given to the child." Another mother expressed concern about whether or not she could prepare food specially for the child because she was already cooking different foods for so many people in the house.

## **Problem 2 Mothers are not providing enough of a variety of foods or foods rich in vitamins and minerals (15 of 22)**

Of all the recommendations discussed with mothers to address this problem, the following were the most successful:

- give the child some of the family's vegetables, mashing them and adding yogurt, potato, or rice if spicy
- add in-season fruits or vegetables (mango, carrots, peas, apricots) at each meal

Most of the mothers with this problem (12 of 15) were advised to give vegetables from the family foods and to add yogurt, potato or rice if the food was spicy. All mothers reacted positively to the recommendation at first, saying that it was feasible to do.

Close to half of the mothers (7 of the 12) tried giving vegetables from the family food and the majority of these mothers will continue. The family foods given to the children included bread, potatoes, egg and rice. One mother gave roti and salad whereas others gave any vegetable that was cooked in the house. Mothers were pleased with the recommendation because it was easy to do since the food to give to the child was already cooked and it saved time. One mother who was not pleased with the recommendation said giving vegetables was causing blisters in the child's mouth, so she would wait until he was older to give these foods.

Most of the mothers (14 of 15) were advised to add seasonal fruits or vegetables to the child's meals. All of the mothers reacted well to the suggestion although some mentioned that it was contingent on other members of the family, such as the father-in-law or other male relatives, who would have to buy the fruits and vegetables.

Half of the mothers tried giving vegetables and fruits and all but two will continue. Mothers who tried gave banana, curry, apples, potato, and carrots to the child. One mother made "gajreela" for the child.

Other recommendations that were offered frequently to mothers, but adopted by less than a third of the mothers to whom they were offered, included the following:

- include foods from each of the four food groups each day
- add vegetable or meat to the child's food
- give fruit for a snack every day

Most of the mothers (11 of 15) were advised to include foods from each of the four food groups in the child's diet each day. All of the mothers reacted positively to the suggestion saying that they could do it. However, only four tried giving foods from each of the four food groups daily. Nonetheless, all of the mothers who tried, except for one, said they would continue with the recommendation. Mothers tried giving the following foods: carrots, apples, potatoes, and other vegetables that were cooked. One mother tried a variety of things, including giving a paratha with salad, and firni. Most of the mothers said that the children liked potatoes and vegetables. Two of the rural mothers said that the fathers were happy that the child was eating everything and homemade foods. The only negative comments after trying the recommendation were that one child did not like apple and another child did not like carrots.

Adding meat and vegetables to the child's food was discussed with most of the mothers (11 of 15). All of the mothers reacted positively to the recommendation, many saying that it would be

easy to do although two mothers did not think that meat was readily available in the villages

Only two mothers actually tried the recommendation. Both of these mothers will continue adding meat and vegetables to the child's food. One mother made soup of meat, turnips, and other vegetables, and she found the experience positive, saying that the recommendation was good for her girl. The other mother who will continue with the recommendation said that she had started giving the food in small quantities and would increase the diet when the child got used to it. She was not pleased, however, with the amount of time it took to encourage her child to eat the food. One mother-in-law, who did not like the recommendation, said it would cause the baby to pass more stools and get diarrhea.

Giving a fruit for a snack every day was suggested to 12 of the 15 mothers. All of the mothers reacted positively to the suggestion, saying that they could give banana, apple or milk and rusk between meals. One mother expressed concern that buying fruit every day would be difficult. Four mothers tried the recommendation, and all but one of these mothers will continue. Mothers gave the children banana between meals.

### **Problem 3 Mothers are giving other milks (7 of 22)**

The most successful recommendation for this problem was

- include milk as part of the child's food like kheer or suji instead of as a drink

Six mothers were offered this recommendation. All mothers reacted well to the recommendation, saying they could give halwa and suji, make kheer in milk, or fry the suji and then mix milk in it. Mothers appeared motivated by the argument that giving the milk in food rather than to drink could improve the child's health and lessen the incidence of diarrhea. All of the mothers to whom this recommendation was offered tried it. Mothers gave foods with milk such as khichri, halwa, and suji ki kheer. Among those who tried, half of the mothers will continue including milk in the food instead of giving it to drink.

Switching from a bottle to a cup was also a well received recommendation, adopted by close to half of the mothers to whom it was offered.

All seven mothers with this problem were advised to use a cup instead of a bottle. Most of the mothers reacted well to the recommendation and tried it, although some mothers reacted less favorably, saying that the children were used to the bottle and that it would be difficult to use a cup instead.

Most (6 of 7) mothers tried the recommendation, and most of them will continue with it. Three mothers tried the recommendation but had difficulty, saying that their child did not like anything from a cup and that their child cried because she wanted the bottle. The mothers who tried and will continue the recommendation said that they were making the change slowly and that it was easy to keep the cup clean.

A recommendation to breastfeed 6-8 times daily was discussed with five mothers. All mothers initially reacted positively. Mothers said that they could breastfeed more often, although one said she did not have any more milk and would have to continue giving other milk. However, only two mothers tried the new practice, and one said she would continue. This mother increased breastfeeding frequency to 10-12 times per day.

#### **Problem 4 Mothers are not using proper hygiene**

Only one recommendation was discussed for this problem – to wash hands before preparing food, serving food, and after using the toilet. One mother was offered this recommendation, which she tried and will continue.

### **Healthy Children 12-24 Months Old**

#### **Feeding practices**

- A majority of mothers were breastfeeding. About one third were no longer breastfeeding and most of these mothers had children 18 months or older.
- Breastfeeding frequency varied greatly, from 1-14 times day and night, but the majority of these mothers were breastfeeding 6 or more times in a 24-hour period.
- All children were receiving foods 1-9 times a day. The majority of children were fed from 1-5 times a day, and the others were fed more frequently, 6-9 times a day.
- The amount of food given at one time was generally inadequate, ranging from 1/8 to 1/4 cup.
- Only three children were receiving enough calories per day. Caloric deficits ranged from 160-750 kcal/day.
- Types of food given included rusks, biscuits, bananas, roti, cerelac, yogurt, rice, egg, potato, pakoray, turnips, and vermicelli. Only two children were fed daal, one was fed saag, and one was given vegetables. About half of the children were being fed fruit and less than half were receiving meat.
- The majority of children were receiving other milks and tea made with milk.

#### **Major problems identified in child feeding**

The trials with mothers of healthy children 12-24 months old revealed the following main

problems

- Problem 1 Mothers are not giving complementary foods or giving too little or not frequently enough
- Problem 2 Mothers are not providing foods that have enough vitamins and minerals or variety of foods
- Problem 3 Mothers are feeding other milks
- Problem 4 Mothers think they are too busy to feed the child
- Problem 5 Mothers are not using proper hygiene

### **Recommendations**

Recommendations that were most often tried and adopted by mothers included

- increase the frequency of meals to 4-5 times a day
- give family foods
- add in-season fruits or vegetables to each meal

Other recommendations that were well received but offered to only a few mothers were

- include milk as part of the child's food instead of as a drink
- use a cup instead of the bottle
- wash hands before preparing and serving food and after using the toilet
- give freshly prepared food to the child

Although some recommendations were not as popular among mothers, such as giving more quantity per serving or adding ghee or oil to foods, in the majority of cases, those who did try the recommendations said that they would continue

### **After the trials**

- Breastfeeding frequency improved for most mothers Only two mothers were breastfeeding less than 6 times per day
- Frequency of meals increased for most children, ranging from 4 to 7 times a day
- The quantity of food per serving improved but continued to be inadequate for most mothers, varying from 1 to 3 cups per day

- Caloric intake improved for all but one child, although the majority of children still fell short of their daily caloric requirement. Those who fell short of the requirement had a caloric deficit in the range of 50–480 kcal/day
- The most common foods that were given included roti, paratha, biscuits, rusks, bananas, and potatoes. Five mothers were giving meat to the child. Only two mothers were giving rice, apple, and yogurt, and one mother was giving dahl

The following summarizes the recommendations offered to mothers to improve the problems identified earlier. Reactions of mothers to the recommendations are described for each problem. (See annex pages 11-15)

**Problem 1 Mothers are not giving complementary foods or giving too little or not frequently enough (18 of 20)**

Of all the recommendations discussed with mothers to address this problem, the following two were the most frequently offered and adopted. Half or more of the mothers who were offered these two recommendations chose to continue them:

- increase frequency of meals to at least four times per day
- give family foods

Feeding the child at least four times a day was discussed with 14 of 18 mothers. Most responded well to the recommendation, but some said that it would be difficult to do due to lack of time. Most of the mothers tried the recommendation, and all were able to feed the child from 3 to 5 times a day. All but two mothers who tried feeding more often will continue. Upon trying the recommendation, mothers commented that the child was growing well, that it was good for the child, that the child was happy, that it was easy to do, and that the child was less irritating to the mother. One mother who was not pleased with the recommendation said that it made the child pass stools too often.

Feeding family foods to the child was discussed with 15 of 18 mothers. Mothers generally reacted well to the recommendation, and about half tried it and will continue. Upon giving the child family foods, mothers said that it was easy to do and that it saved time. Most of the mothers who tried added yogurt to the food that was given. Some mothers gave whatever was cooked, and one gave leftovers also. Mothers said that their husbands and mother-in-laws supported this recommendation.

Other recommendations that were adopted fewer than half of the mothers to whom they were offered included:

- add oil/butter or ghee to the child's food
- increase the serving to 1 pao per meal

- feed the child from his or her own bowl
- have a set meal time for the child (same as the family)
- avoid sweets, sugary drinks, and soda, especially before meals

Twelve mothers were advised to add butter, oil, or ghee to the child's food. Mothers reacted positively overall, saying that they could add oil, butter, and ghee so that the child would grow better and be healthier.

Five of 12 of the mothers to whom this recommendation was offered tried it. Mothers added ghee while cooking the food, put ghee in khichri, made halva, and gave salad to the child. One mother put ghee on the roti. After the trials, mothers were pleased with the recommendation, saying that the child liked the food and that the recommendation was easy to follow. One mother who was not pleased with the recommendation said that she did not have oil to add to the child's food. All but one of the mothers who tried the recommendation will continue adding butter, oil, or ghee to the child's food.

Ten of 18 mothers were advised to increase the amount of food per serving to 1 pao per meal. Most mothers reacted well, saying that they would increase the amount of food they were giving. One mother said she would do so to improve the child's health. Two mothers who were resistant to the suggestion said that the child could not eat that much.

Four of the mothers who were offered this recommendation tried it. The mothers who tried were a bit doubtful about the amount of food that the child could eat. All mothers who tried will continue, although they had some difficulty. For example, one mother did not increase quantity enough to reach 1 pao, and another mother said that the child could not eat so much.

Fourteen of 18 mothers were advised to feed the child from his or her own bowl. Mothers generally reacted well to the recommendation, saying that they were already doing this, that they could if they knew how much food to give, and that they would because they would have a better sense of how much the child was eating. All four of the mothers who tried the recommendation will continue and were pleased with it because they could see how much the child was eating.

Feeding the child at meal times with the family was discussed with 13 of 18 mothers. Mothers generally reacted well to the recommendation, but some expressed concern, saying that it could be difficult if other family members did not want the child eating with them, that it is difficult to feed the child with the rest of the family, and that it is difficult when there are other children. Only four mothers agreed to try the recommendation and three will continue it. Two mothers said that they gave the food to the child with the family, whereas one mother said that the child ate with her.

Avoiding sweets, sugary drinks, and soda was discussed with 11 of 18 mothers. Mothers reacted positively to the recommendation, but only one mother was able to try it and will continue.

it. However, she noted that it is difficult to keep children away from the shops and hawkers where they eat sweets.

**Problem 2 Mothers are not providing foods that have enough vitamins and minerals or a sufficient variety of foods (12 of 20)**

Of all the recommendations discussed with mothers to address this problem, adding in-season fruits or vegetables to each meal was the most successful.

Ten of 12 mothers were offered this recommendation. All mothers reacted favorably, saying that it was possible to give fruits and vegetables to the child. All but one mother tried giving fruits or vegetables at each meal -- apples, bananas, carrots, and potatoes. The only negative comment, made by one of the mothers who tried the recommendation, was that, "It is sometimes difficult to bring fruit from the market." All of the mothers who tried the recommendation said that they would continue adding fruits and vegetables to their children's meals.

The following recommendations were discussed frequently with mothers and adopted approximately half of those to whom they were offered:

- give the child some of the family's vegetables and adding yogurt, potato, or rice if spicy
- add vegetables or meat to the food the child is already eating

Ten of 12 mothers were offered the recommendation to feed their child vegetables from the family food and to add yogurt, potato, or rice if the food was spicy. All mothers reacted well to the recommendation, saying that they could add potatoes, yogurt, and rice and that it would be easy. Six of the mothers to whom the recommendation was offered tried it, and all said that they would continue. They particularly liked not having to cook separately for the child.

Adding vegetables or meat to the child's food was discussed ten mothers. The initial response was mixed. Most mothers said they could give vegetables, but a few commented that it was difficult to give meat. Four mothers actually tried the recommendation. One mother who did not try believed that it was difficult to give meat, and her mother-in-law said that the child could not digest it. Another mother who did not try the recommendation said it was too expensive to buy meat. Of the mothers who did try adding vegetables and meat to the child's food, all said they would continue.

Two recommendations were accepted by only a few of the mothers to whom they were offered:

- include foods from the four food groups each day
- give the child fruits as a snack

Nine of 12 mothers were offered the recommendation to give the child foods from the four food

groups each day Mothers reacted well to the suggestion but only two of the mothers tried the recommendation These mothers, however, liked the recommendation and did agree to continue

Giving fruit for a snack each day was discussed with 11 mothers Mothers reacted positively to the recommendation, saying that they could give fruits as snacks Some mothers said that they were already doing this but could do so more often Four mothers tried giving fruits as snacks, all of whom said they would continue except for one mother who said that, "It is difficult to bring fruit from the shop if the child's father is not at home "

### **Problem 3 Mothers are feeding other milks (4 of 20)**

The most successful recommendations for this problem were to

- use a cup instead of the bottle
- include milk as part of the child's food like kheer or suji instead of as a drink

Three mothers who were using a bottle were asked to use a cup instead The mothers reacted well to the recommendation, saying that they would not have to clean the bottles Two of the mothers tried the recommendation, and both will continue, although one said that her clothes got dirty when she fed her child with a cup

All four mothers with this problem were advised to include milk as a part of child's food, serving kheer or suji made with milk instead of giving the child the milk to drink Three mothers tried the recommendation, and two said that they would continue Both mothers said that the child's health was improving and that the child liked suji with milk

The least-adopted recommendation was to breastfeed the child 6-7 times a day None of the three mothers who were advised to do this agreed to try the recommendation

### **Problem 4 Mothers think they are is too busy to feed the child (2 of 20)**

The following recommendations were offered to two mothers each to address this problem

- make time to feed the child or watch and encourage the child to feed him/herself
- feed the same food as the family, adding yogurt or potato if the food is spicy
- give the child his/her own bowl and spoon
- use a cup instead of the bottle

None of the recommendations were adopted by mothers, although all reacted positively when the recommendations were first offered to them

## **Problem 5 Mothers are not using proper hygiene (2 of 20)**

The following recommendations were offered to one or two mothers each to address this problem

- wash hands before preparing and serving food and after using the toilet
- serve freshly prepared foods
- use clean utensils for food
- cover and heat food before serving
- use a cup instead of the bottle
- discontinue the soother

The only recommendations that were tried were to wash hands and to serve freshly prepared food Both of these recommendations were tried by two mothers and adopted by one The other recommendations were not tried at all

## **Children Suffering from Diarrhea, 0-5 Months Old**

### **Feeding practices**

- Half of the children were being breastfed exclusively and the other half were receiving additional liquids and other milk One child was being fed qaawa and another child was given egg
- All but one child were being breastfed Breastfeeding frequency ranged from 4-12 times day and night

### **Major problems identified in child feeding**

The trials with mothers of children with diarrhea 0-5 months old revealed the following main problems

Problem 1 Mothers decrease breastfeeding during diarrhea

Problem 2 Mothers are not using proper hygiene

Problem 3 Mothers are not exclusively breastfeeding, not breastfeeding frequently enough, or not breastfeeding at all

Problem 4 Mothers, the community, and families believe that diarrhea is caused by

“nazar,” “saya,” and heat

## **Recommendations**

Recommendations that were most often tried and adopted by mothers included

- breastfeed more frequently, 10-12 times day and night
- increase foods and fluids to produce more milk
- do not give medicine for diarrhea unless there is blood in the child’s stool
- wash hands before preparing and serving food and after using the toilet

Although other recommendations, such as not using the teether or replacing the bottle with a cup and a spoon, were not as popular among mothers, in the majority of cases, those who did try the recommendations said that they would continue

## **After the trials**

- Breastfeeding frequency increased for almost all of the mothers. The range of breastfeeding frequency was from 8-14 times day and night
- Fewer mothers were giving other milks and liquids, including tea

The following summarizes the recommendations offered to mothers to improve the problems identified earlier. Reactions of mothers to the recommendations are described for each problem. (See annex pages 16-19)

### **Problem 1 Mothers decrease breastfeeding during diarrhea (7 of 8)**

Of all the recommendations discussed with mothers to address this problem, the following two were the most frequently offered and adopted. Half or more of the mothers who were offered these recommendations chose to continue them.

- breastfeed with increased frequency, 10-12 times day and night
- increase foods and fluids to produce more milk

Six mothers were advised to continue breastfeeding with increased frequency, at least 10-12 times day and night. Most mothers responded positively, saying that they liked the recommendation because it is free, there is no need to prepare anything, it will increase their milk, and it will replenish the water lost from the diarrhea. All but one mother tried breastfeeding more often, and all of the mothers who tried will continue. After trying the recommendation, mothers said it was easy to do, that the child slept well and cried less, and that it was good because there was no need to go to the doctor.

Seven mothers were advised to eat and drink more foods and fluids in order to produce a greater amount of milk. Mothers welcomed this recommendation because they were eager to produce more milk, although one mother did not want to eat more for fear that her in-laws would say that she is always hungry. Five of the mothers tried this recommendation and will continue it. After trying the recommendation, mothers said it was easy to do, although one mother was worried about what the family would think if she felt hungry and wanted to eat during the night.

Another recommendation that was fairly successful was to breastfeed after every stool. The seven mothers given this advice reacted positively, saying that they liked it because it helps the child recover, it does not cost anything, and it replenishes the water that was lost. Three of the mothers tried this recommendation. After trying, these mothers said that the diarrhea improved, that they did not have to go to the doctor, that it was easy, and that it did not cost anything. They will all continue to breastfeed after every stool.

The least successful recommendation was to avoid medicine for diarrhea unless there was blood in the child's stool. However, this was most likely due to the fact that few mothers were actually using medicine at the time and only one chose to try the recommendation.

The majority of mothers were offered this recommendation. Most mothers responded positively, saying that they liked the recommendation because it is good if the child can recover without the doctor's help and the medicine should not be given if it is harmful to the child. However, only one mother was giving medicine at the time, so she was the only one to actually try the recommendation. Upon suspending the medicine, her child was recovering well, and she intended to continue not giving the medicine unless the child passed blood.

## **Problem 2 Mothers are not using proper hygiene (4 of 8)**

Of all the recommendations discussed with mothers to address this problem, the following two were the most frequently offered and adopted:

- wash hands before preparing and serving food and after using the toilet
- do not use the bottle

Four mothers who were not washing their hands before preparing or serving food or after using the toilet were asked to do so. Mothers reacted positively to the recommendation, saying that they could do this. Some mothers linked the practice to the following religious statement: "Cleanliness is half of your faith." All but one mother tried the recommendation and these mothers will continue it.

Four mothers were also asked to stop using a bottle. All reacted positively, saying that they could try to use a cup. Two mothers tried this recommendation and will continue. After stopping the bottle, one mother explained one of the advantages of the practice and said, "I do not have

to get up many times and do not have to heat the milk ”

Two other recommendations that were offered

- use clean utensils for food
- discontinue the teether and soother

Three mothers were advised to use clean utensils and plates for food and drinks. Mothers reacted well, and a couple said their utensils and cups were already clean. Only one mother tried this recommendation and she will continue.

Three mothers were asked to stop using the teether and soother. Mothers reacted positively, saying that they could try, but only one mother actually did. This mother agreed to continue with the recommendation.

### **Problem 3 Mothers are not exclusively breastfeeding, or not breastfeeding frequently enough, or not breastfeeding at all (4 of 8)**

The most successful recommendation, adopted by two of four mothers to whom it was offered, was

- breastfeed more frequently, 10-12 times day and night

Most of the mothers reacted well to the idea, saying that they could breastfeed more frequently. One mother who was not breastfeeding was doubtful about how she could begin breastfeeding and another mother did not think she would have enough breastmilk. The two mothers who were offered this recommendation tried it and will continue. They were pleased because the child slept better and was more satisfied.

Two less popular recommendations that were discussed with mothers were

- use a cup and a spoon instead of a bottle
- breastfeed only and stop the bottle

Three of the mothers were asked to use a cup and a spoon instead of the bottle. They reacted well, saying that they could try. Only one mother tried, however, and she agreed to continue. This mother was pleased upon trying the recommendation because she did not have to clean the bottle.

Three mothers were also asked to breastfeed exclusively and to stop using the bottle. Some mothers reacted positively, saying that it was possible to do. However, none of the mothers agreed to try it.

**Problem 4 Mothers, the community, and families think that diarrhea is caused by “nazar,” “saya,” and heat**

The following recommendations were discussed with two mothers

- accept that diarrhea is caused by germs and therefore give more frequent feedings of breastmilk

Initial reactions were positive the recommendation was tried and adopted by only one of the two mothers

### **Children Suffering from Diarrhea, 6-24 Months Old**

#### **Feeding practices**

##### **6-11 months old**

- All the children 6-11 months old were being breastfed from 4-12 times day and night
- Some of the children were fed other milks and one child was receiving tea
- The majority of children were fed foods from 1 to 5 times day
- The amount of food children were receiving per serving was inadequate, usually no more than ½-1 pao of food a day
- Caloric intake was inadequate for all children Caloric deficits ranged from 30-380 kcal/day

##### **12-24 months old**

- Among the children 12-24 months old, slightly more than half were being breastfed Breastfeeding frequency ranged from 4-12 times day and night, with most children being breastfed 7-12 times in a 24-hour period One of the breastfed children was not receiving any other foods
- Frequency of meals or snacks ranged from 1 to 6 times a day, with most children being fed twice a day
- The amount of food given to most children was inadequate, often less than 1 pao a day

- Caloric intake was inadequate for all of the children, with a range of caloric deficits from 380-950 kcal/day
- Foods given to the children in both age groups included banana, khichri, biscuits, and roti. Two children were given meat, and most were not given foods rich in vitamin C

### **Major problems identified in child feeding**

The trials with mothers of children with diarrhea 6-24 months old revealed the following main problems

- Problem 1      Mothers are not replacing the water that the child is losing through the diarrhea
- Problem 2      Mothers believe that the child has a poor appetite and poor digestion. They therefore give less food
- Problem 3      Mothers are not using proper hygiene
- Problem 4      Mothers are not feeding enough food to child, not feeding often enough, or not giving at all
- Problem 5      Mothers are not breastfeeding frequently enough or not breastfeeding at all
- Problem 6      Mothers, their communities, and families think that diarrhea is caused by "nazar," "saya," and heat, and that therefore a doctor's advice will not help
- Problem 7      Mothers stop or decrease breastfeeding during diarrhea, as mother's milk is considered to increase the diarrhea

### **Recommendations**

Recommendations that were most often tried and adopted by mothers included

- give ORS after each loose stool
- feed a variety of foods
- wash hands before preparing and serving and after using the toilet
- use clean utensils
- use a cup and a spoon instead of a bottle

Although other recommendations were not as popular among mothers, such as giving thick food like firm or favorite foods, in the majority of cases, those who did try the recommendations said that they would continue

## **After the Trials**

### **6-11 months old**

- Breastfeeding frequency increased for two mothers and declined or remained the same for others. Breastfeeding frequency ranged from 7-9 times in a 24-hour period
- Frequency of meals increased for most children, ranging from 1-6 times a day
- Quantity per serving remained inadequate but increased for some children
- Caloric intake improved for all children except one, whose intake remained the same. The majority of children still fell short of their daily caloric intake. Caloric deficits ranged from 50-350 kcal/day

### **12-24 months old**

- Breastfeeding frequency only increased for one mother in this age group, remained the same for another mother, and declined for two mothers. Breastfeeding frequency ranged from 7-8 times in a 24-hour period
- Frequency of meals increased for all mothers but two, who continued feeding the child as often as before the trials. Frequency of meals ranged from 1-7 times per day, with most children being fed 3 or more times a day
- Quantity per serving remained inadequate but increased for some children
- Caloric intake increased for the majority of children although all still fell short of their daily requirement. Caloric deficits remained high, ranging from 200-780 kcal/day

The following summarizes the recommendations offered to mothers to improve the problems identified earlier. Reactions of mothers to the recommendations are described for each problem. (See annex pages 20-26 )

#### **Problem 1 Mothers are not replacing the water that the child is losing through the diarrhea (11 of 14)**

The most successful recommendation, adopted by half of the mothers to whom it was offered, was

- give at least ½ cup of ORS for each loose stool

All 11 mothers with this problem were advised to give at least ½ cup of ORS for each loose stool and to give more ORS if the child needed more. Mothers reacted positively to the recommendation, and some were already familiar with ORS and had used it previously. Seven mothers tried it, and of those who tried, all but one mother will continue. Mothers were pleased because a cure was possible without having to see the doctor or spend money for the doctor, because the ORS worked, and because the child was able to drink the ORS easily.

The following two recommendations were adopted by approximately a third of the mothers to whom they were offered:

- continue breastfeeding and breastfeed more frequently
- use a cup and a spoon to give ORS

Eight mothers were advised to continue breastfeeding and to do so more frequently. Three of these mothers tried the recommended and all but one will continue.

Ten mothers were advised to use a cup and a spoon or just a cup to give ORS. Mothers reacted positively to the recommendation, and some had already used a cup previously. Three mothers actually tried the recommendation, all of whom will continue it.

The following two recommendations were discussed with ten mothers, but only adopted by one mother each:

- buy ORS at the pharmacy
- make sugar-salt solution (SSS)

Mothers reacted positively to the recommendation to buy ORS at the pharmacy and to keep some extra packets in case the diarrhea returned. One mother said she would buy it from the medical store because the mixture is already prepared with the correct proportions. Another mother said she would buy it from the bazaar. One mother was not sure if there would be money to buy the ORS. Only one mother tried the recommendation and will continue it.

Mothers asked to make sugar-salt solution (SSS) at home with clean water and salt also reacted positively, except for one who was concerned that she would not be able to prepare it on her own without the interviewer's help. Two mothers tried this recommendation, and only one will continue.

**Problem 2 Mothers believe that the child has a poor appetite and poor digestion. They therefore give less food (6 of 14)**

The most successful recommendation, adopted by half of the mothers to whom it was offered, was

- feed a variety of foods, from the four food groups

Six mothers were offered this recommendation. Mothers reacted positively, saying that they could do this. Three mothers tried the recommendation and will continue it. Mothers gave bananas, apples, potatoes, squash, carrots, and turnips. After the recommendation, one mother said, "The girl is healthy and likes to eat now." Another mother said, "These items are easily available and can be given easily."

Recommendations that were discussed with mothers and adopted by two of five were

- serve foods that have the thickness of firni
- add one tablespoon of oil or ghee to the child's food
- give smaller servings of foods but more frequently, at least 6 times a day

Most mothers reacted positively to serve thick foods like firni rather than thin, watery foods, except one who said that her child does not like thick foods. Two mothers tried this recommendation and will continue it. After trying the recommendation one mother said she liked it, "as it was easy and nothing was difficult."

Five mothers were asked to add one tablespoon of oil or ghee to a serving of food. Four mothers said that they could do this, and two tried it and will continue it. One mother made choori and another made suji-halwa. One mother said that her child liked the taste with the addition and was happy. Another mother said that her child gained weight and that, "his stomach was full."

Five mothers were advised to give smaller servings of food more frequently, at least 6 times a day. Most mothers reacted positively to the recommendation, and one mother said she was already trying to do this. Only one mother tried the recommendation and will continue.

Two recommendations that were less successful but offered to a small number of mothers were

- feed the child his/her favorite foods
- give mashed soft foods if the child does not want to eat regular foods

Four mothers were advised to feed the child their favorite foods. Most mothers reacted well to this suggestion, but only one mother tried it and will continue it.

Four mothers were advised to feed the child mashed soft foods if the child does not want to eat regular food. Mothers responded well to this recommendation, except for one who said that this would not be possible because of lack of time. None of the mothers tried this recommendation, however.

### **Problem 3 Mothers are not using proper hygiene (6 of 14)**

All of the recommendations offered to mothers for this problem were tried and adopted by most of the mothers to whom they were offered

- wash hands before preparing and serving food and after using the toilet
- use clean utensils for food
- use a cup or spoon instead of the bottle

Six mothers were advised to wash their hands before preparing food, serving food, and after using the toilet, and to use clean utensils and plates for food and drink. Most reacted positively to these recommendations. The majority of mothers tried both recommendations and will continue washing their hands and cleaning the utensils. After following the recommendation to wash their hands, one mother said that her child had improved and was recovering from diarrhea. Another mother said, "Cleanliness is a good thing."

Five mothers were advised to use a cup or spoon instead of a bottle. Mothers reacted well to the recommendation. One mother said, "The child can drink from a cup. Flies sit on the bottle, and it also falls on the ground and the girls give it just like that. Now there is no need, I will not give it [the bottle]." Another mother said, "If it is for the benefit of the child, I will try not to give the bottle." Most mothers tried this recommendation and will continue using a cup and a spoon instead of the bottle. One mother who tried using a cup and a spoon said that the child's clothes became dirty, and another mother said she could not completely stop using the bottle and that it would take time for the child to adjust.

### **Problem 4 Mothers are not feeding enough food to child, not feeding often enough, or not giving at all (4 of 14)**

Recommendations to improve this problem were offered to only a few mothers. The most successful recommendation was

- make food thick like firni

Two of four mothers responded positively to the recommendation, saying that it could be done and that it would not be that difficult, while two others believed that the child would not be able to eat thick food and that it would be difficult to do. Two mothers tried thickening foods and will continue to fulfill the recommendation.

Additional recommendations that were adopted by one mother each included

- breastfeed 6-8 times a day and give semi-solids between breastfeeds

- set a meal time for the child with the family
- add some oil, butter, or ghee to the child's food
- feed semi-solids at least three times a day
- give the child food cooked for the whole family, adding yogurt, potato, or rice if spicy

Three mothers were advised to breastfeed the child 6-8 times a day and to give semi-solids between breastfeeds. One mother was hesitant because she was still only breastfeeding the child. One of the mothers tried and will continue this practice.

Three mothers were advised to set a meal time for child and to try to feed the child with the family. Mothers reacted well to the recommendation, although only one mother tried and will continue it.

Three mothers were advised to add some oil, butter, or ghee to the child's meal. Most mothers reacted well to this recommendation, but only one mother tried it and will continue it.

Three mothers were advised to feed semi-solids at least three times a day. Most mothers reacted positively, saying that it would be easy, although two mothers were of the opinion that the child was too young. Only one mother tried this recommendation and she will continue it.

Four mothers were advised to give the child the same food cooked for the whole family and to add mashed potato, yogurt, rice, or milk if the food is spicy. One mother was hesitant to try this because she felt the child was too young. Other mothers responded positively to the recommendation, although only one mother tried it and will continue it.

Two recommendations that were offered to two mothers each and not tried at all were

- increase the amount of food to ½ pao for children 6-9 months old
- make special food, such as khichri, for the child

The recommendations were not accepted because one mother had not started feeding semi-solid foods, and another was inclined to feed the child what he could easily eat and gradually increase the amount of food as he grows.

Two mothers were asked to make some special food, such as khichri, for child. Most mothers reacted positively to this recommendation, saying that it would not be difficult, but none agreed to try it.

**Problem 5 Mothers are not breastfeeding frequently enough or not breastfeeding at all (2 of 14)**

The following recommendations were offered to two mothers each, tried by one, and adopted by

none

- breastfeed more frequently, at least 8-10 times day and night
- use a cup and a spoon instead of a bottle
- breastfeed only and stopping the bottle

One mother believed that the child got diarrhea by taking more milk, and another mother commented that it was very tiring to feed the child with a spoon

**Problem 6 Mothers, their communities, and families think that diarrhea is caused by “nazar,” “saya,” and heat, and that therefore a doctor’s advice will not help (2 of 14)**

The following recommendations were offered to two mothers each

- give breastmilk more frequently
- give ORS or SSS in addition to breastmilk
- accept that diarrhea is caused by germs

Only one mother tried and adopted the recommendation to give ORS or SSS in addition to breastmilk

**Problem 7 Mothers stop or decrease breastfeeding during diarrhea, as mother’s milk is considered to increase the diarrhea (1 of 14)**

Three recommendations were offered to one mother

- continue to breastfeed with increased frequency
- avoid giving medicines for non-bloody diarrhea
- eat more food and fluids in order to produce more milk

All of these recommendations were tried and will be continued by the mother

## **Children Recovering from Illness, 0-5 Months Old**

### **Feeding practices**

- Except for two children, the majority of children were being breastfed, although not exclusively Most children were receiving other milk in addition to breastmilk, often buffalo milk in a bottle and one child was given tea

- Breastfeeding frequency ranged from 5-15 times day and night The majority of mothers were breastfeeding more than 8 times a day
- Less than half of the children were receiving semi-solids, ranging from 2-4 tablespoons per day Foods that were being given included sagu-dana, qaawa and Cerelac

### **Major problems identified in child feeding**

Problem 1 Mothers are not exclusively breastfeeding, not breastfeeding frequently enough, or not breastfeeding at all

Problem 2 Mothers are not using proper hygiene

Problem 3 Mothers, their communities, and families think that diarrhea is caused by “nazar,” “saya,” and heat

### **Recommendations**

The recommendation that was most often tried and adopted by mothers was to breastfeed more frequently, 10-12 times day and night Although other recommendations were not as popular among mothers, such as using a cup and a spoon instead of the bottle, or washing hands before preparing and serving food and after the toilet, in the majority of cases, those who did try the recommendations said that they would continue

### **After the Trials**

- Breastfeeding frequency increased for the majority of mothers Breastfeeding frequency ranged from 8-14 times day and night
- Fewer children were receiving other milk in addition to breastmilk and were being given milk in a bottle
- The mother who was giving her child tea had stopped
- More mothers were giving semi-solids, usually 2-3 times a day Food given included bananas, rusk, sagu-dana, qaawa, Cerelac, khichri, and potato

(See annex pages 27-29 )

**Problem 1 Mothers are not exclusively breastfeeding, not breastfeeding frequently enough, or not breastfeeding at all (10 of 11)**

Three recommendations were discussed with mothers to address this problem

- breastfeed more often, 10-12 times day and night
- use a cup and spoon instead of a bottle
- only breastfeed and use no bottle at all

The most successful recommendation was breastfeeding more often, which was discussed with all 10 mothers with this problem. Most mothers responded positively, some saying that they were already doing this. Six mothers tried the recommendation, and of those who tried, all but two will continue. After trying the recommendation, mothers said "The child does not cry now and sleeps easily," "The child is fed more in this way," "The child does not disturb me now and is playful," and "The family is happy as the child does not cry that much now and seems to be recovering."

Seven mothers were advised to use a cup and a spoon instead of a bottle. Mothers reacted well to this recommendation, and three tried it. Of those who tried using a cup and spoon instead of the bottle, two agreed to continue. One mother who was about to start using the bottle said, "I don't have to buy a bottle and to worry about cleanliness of the bottle now." Another mother said, "I don't have to clean the bottle repeatedly which was difficult."

The recommendation to only breastfeed and to stop using the bottle was also offered to eight mothers. Only one mother tried stopping the bottle and will continue to just breastfeed the child. This mother was pleased because she would not have to worry about cleaning the bottle any more.

## **Problem 2 Mothers are not using proper hygiene (9 of 11)**

To address this problem, the following recommendations were offered to the majority of mothers

- do not use the bottle
- wash hands before preparing and serving food and after using the toilet
- use clean utensils and plates for food or drink
- discontinue the teether and soother

Not using the bottle was well accepted, whereas washing hands was not as popular among the mothers. Using clean utensils and discontinuing the teether and soother were the least successful recommendations, adopted by one mother each.

All nine mothers with this problem were offered the recommendation to not use the bottle. Six tried and adopted this recommendation. One mother who could not try explained that it was because her husband did not allow her because he thinks the child will not eat enough with a spoon. All of the mothers who tried to stop the bottle agreed to continue not using the bottle. One mother said, "Initially the child used to throw away what I tried to feed him, but now he's getting used to it." One mother who did not like the recommendation said she faced problems

feeding the child with a spoon and that the child is too young to be fed by spoon or cup

Eight of nine mothers reacted well to the recommendation to wash hands, saying that it was something that they could do. Mothers commented that, "Cleanliness is part of our religion," "We can avoid illnesses by observing cleanliness," and "Cleanliness is necessary for health." Three mothers actually tried the recommendation, and all said that they would continue.

When asked to use clean utensils, most mothers did not indicate that this would be difficult to do, however, only one mother tried this recommendation and she will continue. This mother separated the utensils for the child and cleaned them before feeding anything to the child. She explained, "The child holds the clean utensil with interest and will also not get sick from them."

The recommendation to discontinue the teether and soother was well received by all eight mothers to whom it was given. One mother tried the recommendation and agreed to continue not giving the teether, although she said the child was used to it and was crying a lot in its absence.

**Problem 3 Mothers, their communities, and families think that diarrhea is caused by "nazar," "saya," and heat (5 of 11)**

Of the five mothers with this problem, only one agreed to try and continue each of the suggestions. The recommendations that were discussed with mothers included:

- accept the explanation that diarrhea is caused by germs
- give more frequent feedings of breastmilk
- make and giving ORS
- accept that illness is not due to "nazar" or "saya."

When offered the explanation that diarrhea is caused by germs/bacteria which get into food and fluids, one mother said that her husband told her the same thing. Only one mother agreed to adopt this explanation, saying, "I can save my child from diarrhea by observing cleanliness, and he will be healthy."

When advised to breastfeed more frequently, one mother was motivated to try this because it could increase her milk production. Only one mother tried the recommendation, and she will continue it. She explained that the child did not cry any more and that she felt lighter because she was breastfeeding more often.

Only one mother tried the recommendation to make and feed ORS in addition to breastfeeding, and she will continue it.

When offered the explanation that illness is not due to "nazar" or "saya," only one mother agreed.

to adopt this explanation

## **Children Recovering from Illness, 6-24 Months Old**

### **Feeding practices**

#### **6-11 month olds**

- Among the four children 6-11 months old, all but one were being breastfed, and breastfeeding frequency ranged from 4-10 times day and night
- Only one child was receiving other foods such as banana and potato twice daily, and the quantity, like the frequency, was inadequate (about ½ pao/day)
- Caloric intake was insufficient for all children in this age group who were recovering from illness. Caloric deficits ranged from 200-580 kcal/day

#### **12-24 month olds**

- Among the twelve children 12-24 months old, half were being breastfed, and breastfeeding frequency ranged from 4-12 times day and night. The majority of mothers were breastfeeding 4-6 times in a 24-hour period
- Among the breastfed children, two were not yet receiving other foods
- About half of the children were being fed twice a day, and the others were fed at least 3 times a day
- Quantity of food per serving was inadequate for most children, usually amounting to less than 2 paos of food a day
- Caloric intake was inadequate for all of the children in this age group recovering from illness, with caloric deficits ranging from 330-800 kcal/day
- Foods being given included roti, banana, khichri, biscuits, potato, egg, and butter. Only two children were given meat, one child was given an orange, and another child was fed spinach

### **Major problems identified in child feeding**

The trials with mothers of children recovering from illness 6-24 months old revealed the following

## main problems

Problem 1 Mothers are not giving complementary foods or giving too little or not frequently enough

Problem 2 Mothers do not increase the amount of food their babies eat when they are recovering from illness

## Recommendations

— The recommendations that were most tried and adopted by mothers were

- feed at least three meals a day
- give one more meal
- give foods rich in vitamin A

Although other recommendations were not as popular among mothers, such as adding ghee to foods, giving more quantity per serving, or giving family foods, in the majority of cases, those who did try the recommendations said that they would continue

## After the trials

### 6-11 month olds

- Among children 6-11 months old, breastfeeding frequency remained the same for one child and declined for the other two. Breastfeeding frequency ranged from 4-10 times in a 24-hour period
- Previously only one child was fed food, but after the trials mothers of the other children started giving foods
- Quantity per serving increased for the one child who had already been receiving foods, although it was still not enough. Quantity per serving for the children just beginning to receive foods was also inadequate, not more than 1½ pao of food a day
- Caloric intake increased for all children, but was only adequate for one child. In spite of improvements, others still fell short of their daily caloric requirement for children recovering from illness, by 180-430 kcal/day

### 12-24 month olds

- Among children 12-24 months old, breastfeeding frequency increased for most mothers,

decreased for two mothers, and remained the same for one mother. Breastfeeding frequency ranged from 6-8 times in a 24 hour period.

- Children were fed more often after the recommendations, from 3 to 7 times a day.
- Quantity per serving increased for most children but was still inadequate for all but one child, up to 2 paos of food a day for most children.
- Caloric intake improved for most children but declined for three children. None of the children met their daily caloric requirement in spite of improvements in caloric intake. Caloric deficits ranged from 70-800 kcal/day.
- Food given to children after the recommendations included roti, biscuits, bananas, potato, and rice, meat, butter, and egg. Other foods fed to children included firmi, suji, apple, orange, cabbage, rusk, and Farex.

The following summarizes the recommendations offered to mothers to improve the above-mentioned problems. The reactions of the mothers to the recommendations are described for each problem. (See annex pages 30-31.)

**Problem 1 Mothers are not giving complementary foods or giving too little or not frequently enough (15 of 16)**

The most successful recommendation, adopted by over half of the mothers to whom it was offered, was

- feed the child at least three times a day

Fourteen of 15 mothers were advised to feed their child at least three times a day. Most mothers reacted positively, saying that they could give mixed rice and Farex in milk, banana, potato, yogurt, khichri, roti, tea and biscuits, milk, and rice. One mother said that she had already tried feeding her child more often but that the child would not eat. Nine of the mothers tried this recommendation, and of these mothers, all but two said they would continue.

Some of the mothers who tried the recommendation said the following: "The child eats more now," "The child has developed the habit of eating more," "The child does not cry as much as he did before."

Two mothers who tried but did not like giving three meals, said that they, "stopped giving the third meal due to diarrhea."

Recommendations that were offered to a majority of mothers and adopted by a third to half of them included

- feed the child the same foods as the family, adding yogurt, potato, or milk if spicy
- add butter, oil, or ghee to the child's food
- increase the serving size of children 6-9 months to ½ pao

Mothers reacted well to the recommendation to give the child the same foods as the family, saying that they could give potato, rice, and yogurt, that these items are already cooked in the home, and that it would be easy. Seven of 15 mothers tried this recommendation, and all but two who tried will continue giving the child family foods. Mothers were pleased with the recommendation: "The child eats more while sitting with the family," "I don't have to cook especially for child," "I am happy to see our child eating," "The child is active and healthy," "The child likes eating food with family."

Eleven of 12 mothers responded positively to the recommendation to add some oil, butter, or ghee to child's food. Mothers said that ghee and butter was available and that it would be easy.

to add to the child's food. Five mothers tried this recommendation, and all but one of the mothers who tried will continue enriching the child's food. Mothers gave khichri, choori, and carrots with added oil.

Ten mothers who were asked to give the child more food per serving said that they could do this, but only four mothers tried. Among these mothers, all but one said they would continue giving more food to the child. One mother who had increased the quantity of food said that the child seemed healthier and more active than before. Another mother who had tried the recommendation but did not adopt it explained that the child got indigestion.

Additional recommendations that were adopted by only a few mothers included

- have a set meal time for feeding the child
- make special food, such as khichri, for the child
- thicken the child's food like firni
- breastfeed 6-8 times and feed semi-solids between breastfeeds

Thirteen of the 16 mothers were advised to have a set meal times for the child that are the same as the family's. Most mothers responded well to this recommendation saying that they could try this. One mother said that the children eat with the elders, and another mother said that the child already eats with the family. Four mothers tried the recommendation, and all but one will continue to feed the child at set meal times with the family. One mother was pleased with the recommendation, saying that the child was developing a habit of eating.

Fourteen mothers were advised to make food, such as khichri, especially for the child. Mothers seemed to accept this recommendation without major resistance, except for one who said it would be difficult to do. Four mothers tried making a special meal for the child, and all but one planned to continue. One mother said that "The child liked eating khichri and fruits." Another mother said that her child liked the food and slept for a long time. The mother who did not choose to continue the recommendation said that she did not have enough time and that the child was too young to eat khichri and would vomit if the mother tried to give it to her.

Eleven mothers were asked to thicken the child's food like "firni." Most mothers reacted well to this recommendation, saying that it was possible to do. Only two of the mothers tried the recommendation, however. Both of these mothers said they would continue giving thick food to the child. These mothers gave kheer, khichri and halwa. One mother said, "The child will get more energy and will start eating more of everything." The other mother noted, "Now the child can take thick food easily."

Eight mothers were asked to breastfeed the child 6-8 times a day and to give semi-solid foods between feeds. Two mothers tried this recommendation, and said she would continue. One of the mothers who tried the recommendation commented that the child breastfed frequently and was not hungry, and another mother said that the child liked the foods but did not want to be

breastfed

**Problem 2 Mothers do not increase the amount of food their babies eat when they are recovering from illness (12 of 16)**

The most successful recommendations adopted by over half of the mothers with whom they were discussed included

- serve at least one more meal to the child each day
- add vitamin A sources to the child's meal daily

Ten of the mothers were advised to serve at least one more meal to the child each day. Mothers said that they could give an extra meal, including banana, rice, milk, extra fruit or vegetables to improve the child's health. Eight mothers tried this recommendation, and all said they would continue. Mothers who tried the recommendation said that the child liked it, that the child was getting used to semi-solids, and that the child played happily.

Eleven mothers were asked to add vitamin A sources to child's meals daily, such as carrots, green vegetables, or ghee. Mothers said that they could give what was available at home, and seven mothers tried this. Among these mothers, all but one will continue. Mothers said that the child liked these foods and that the child's health was improving.

A third recommendation was adopted by close to half of the mothers to whom it was offered

- serve the child's favorite foods daily

Nine mothers were asked to give the child his/her favorite foods daily. All reacted positively to the recommendation, but one mother was resistant because it would be difficult to do. Four mothers tried giving the child favorite foods and will continue. One mother said her child was happy and liked it.

Additional recommendations that were offered but only adopted by one or two mothers included

- increase the frequency of breastfeeding each day, at least 2 times more than usual
- breastfeed more frequently and avoid the bottle or other drinks
- add oil, butter, or ghee to the child's meals
- increase the amount of food and drink the mother takes
- have the child weighed every week until his/her weight is recovered

Eleven mothers were advised to increase the frequency of breastfeeding each day by at least 2 times more than usual. Mothers reacted positively to this recommendation, except for one who said, "No, I can't do this, its totally impossible". Only two mothers actually tried the

recommendation One mother was concerned that she was too weak to breastfeed many times and that there were other children she had to take care of in the house Another mother was concerned that she did not have enough milk Both mothers who tried the recommendation agreed to continue

Ten mothers were advised to breastfeed more frequently and to avoid bottle feeding or other drinks Mothers reacted well to this recommendation, saying that they could try to use a cup One mother who was not breastfeeding said she would have to consult her MIL Three mothers tried this recommendation, and only one mother will continue Mothers expressed difficulty upon trying the recommendation "I've tried to feed the milk in a cup, but the child can't hold it and dropped it so I restarted bottle-feeding the child " "I tried with a cup but the child did not like it and did not drink from it therefore I continued feeding with bottle " "I've tried but the child is not ready to quit the bottle at this stage "

Nine mothers were advised to add oil or ghee to all meals Mothers said that this would be easy to do, but only two mothers tried it Both mothers will continue because the child liked the taste

Eleven mothers were asked to drink and eat more Mothers reacted positively to this recommendation, saying that they could try, although two mothers said that they would not be able to eat more than they already do Both mothers who tried this recommendation agreed to continue One mother said, "Whatever is cooked in the house I eat Instead of one roti I eat two and I drink milk three times a day "

Ten mothers were advised to have the child weighed every week until he/she regains the weight lost during illness Some mothers reacted well to this recommendation, saying that they could take the child to be weighed because it would be for the child's benefit On the other hand, some mothers thought that it would be very difficult to do One mother said the health center was too far Only one mother tried this recommendation, and said that she would continue to take the child to be weighed until recovery She said, "It is easier and in this way I can know if the child has gained weight by increasing the diet "

## **F Recommendations and Implications for Program Design**

Many of the feeding problems identified for mothers with healthy children, children with diarrhea, and children recovering from illness between birth and 24 months were grounded in both a lack of understanding of child feeding and mothers' lack of appropriate, feasible, and easy solutions to implement Once empowered with information and the motivation to try specific, feasible solutions, mothers found many of the suggested behavior changes acceptable and easy to implement For some recommendations, mothers had the support of their families, which plays an important role in their ability and motivation to change feeding practices Most of the recommendations seemed to be financially feasible to these low-income families, provided that a member of the family who purchases foods for the family agrees to buy the foods needed to

carry out the improved child feeding practices

The following are the most important recommendations to emerge from the research with mothers of healthy children, children with diarrhea, and children recovering from illness from birth to 24 months, their families, and health care providers. Each recommendation is accompanied by a number of implications for program design.

### **Healthy Children 6-12 months old**

#### **Recommendation 1 All children should be receiving a variety of complementary foods at least 3 times a day with sufficient quantity per serving**

##### *Implications for Program Design*

- Mothers should be counseled specifically on when and how to introduce complementary foods into the child's diet, what foods to give, how often the child should be fed, and how much the child should be fed
- - ▶ To motivate mothers to introduce foods, giving semi-solid foods between breastfeeds such as banana, khichri, firni and suji, sheera, biscuits, or yogurt should be recommended. To further encourage the mother, the child's need and ability to eat foods could be emphasized, as well as the promise that he/she will be more satisfied.
  - ▶ To motivate mothers to feed the child more frequently, key arguments could include that feeding the child more often will make him/her feel more satisfied, able to sleep better, and that the child will grow better.
  - ▶ To motivate mothers to feed the child more per serving, mothers will need to understand that their child is capable of eating more food and that it is important for the child's health. Mothers were resistant to this recommendation during the trials, so extra convincing will be needed. Recommending small increases of one or two tablespoons per meal to gradually reach ½ pao of food per serving should be considered.
  - ▶ To motivate mothers to feed the child a greater variety of foods, giving foods from the family meal and adding yogurt, potato, or milk if the food is too spicy should be recommended. The advantage of saving time by not having to prepare food separately for the child should be emphasized.
  - ▶ To motivate mothers to feed the child a variety of foods rich in vitamins and minerals, adding seasonal fruits and vegetables (such as banana, apples, potato, peas, carrots) to what is already given to the child could be advised.
  - ▶ To motivate mothers to give thick food like firni, key arguments could be that the child will like it and sleep better. Additional motivating arguments will need to be explored as mothers tended not to choose to try this recommendation.
- The importance of an improved diet must be promoted to all family members, particularly to

fathers and mother-in-laws, so that the right types of foods are bought and the mother can give these foods to the child

- Doctors, lady health workers, and lady health volunteers need to be trained in young child feeding and provided with materials such as counseling cards that will enable them to appropriately advise mothers on what children should be eating, how much, and how often. It is critical that health workers at all levels understand child feeding and be empowered to offer mothers consistent recommendations in response to their problems.
- Although dais do not usually play much of a role in terms of child feeding beyond the first months of life, advising them when mothers should begin introducing foods could be useful. Dais could prompt mothers early on of the need to begin introducing complementary foods at six months of age, particularly if advice on introduction of foods is solicited by the mother.

## **Recommendation 2 Mothers should be breastfeeding at least 6-8 times in a 24 hour period**

### *Implications for Program Design*

- Mothers should be advised to breastfeed at least 6-8 times in a 24-hour period, to mix milk in foods rather than giving milk to drink, and to use a cup and a spoon instead of a bottle.
  - ▶ To motivate mothers to breastfeed more often, key arguments could be that since the mother is already breastfeeding, breastfeeding more often is easy to do and that breastfeeding more increases milk production. Other arguments supporting existing beliefs are that breastmilk gives energy, protects the child from disease, improves child development, is less expensive than other milk, satisfies the child, is easy to digest, is always fresh, and is a gift from God.
  - ▶ To motivate mothers to mix milk in foods like kheer, halwa, or suji rather than giving milk as a drink, key arguments could be that this could improve the child's health and lessen the child's likelihood of getting diarrhea.
  - ▶ Since it was difficult for some mothers to get the child used to using a cup instead of a bottle, mothers could be advised to replace the bottle with a cup gradually. To encourage mothers to do this, they could be reminded that bottles become dirty easily and are difficult to clean which can lead to diarrhea, whereas it is easier and less time consuming to clean a cup.
- Although most relatives support breastfeeding, the importance of breastfeeding not giving milk as a drink, and of not using the bottle should be promoted to all family members, including fathers and mother-in-laws who can all play an important role in influencing the mother's ability to improve practices. For fathers, the importance of breastfeeding and not giving other milk to drink should be emphasized as some fathers reported that they advised

their wives to give other milk because they did not think there was enough breastmilk to satisfy the child

- Doctors, lady health workers, and lady health volunteers need to be aware of the benefits of breastfeeding, how often a mother should be breastfeeding and the dangers of bottle feeding

### **Healthy Children 12-24 months old**

#### **Recommendation 1 All children should be receiving a variety of foods at least 4-5 times a day with sufficient quantity per serving**

##### *Implications for Program Design*

- Mothers should be counseled specifically on how to give foods, what foods to give, how often the child should be fed, and how much the child should be fed
  - ▶ To motivate mothers to feed the child more frequently, key arguments could include that feeding the child more often will make him/her feel more satisfied, enable him/her to sleep better, and that the child will grow better
  - ▶ To motivate mothers to feed the child more per serving, mothers will need to understand that their child is capable of eating more food and that it is important for the child's health. Mothers were resistant to this recommendation during the trials, so extra convincing will be needed. Recommending small increases of one or two tablespoons per meal to gradually reach 1 pao of food per serving should be considered
  - ▶ To motivate mothers to feed the child from his/her own bowl, mothers should be shown that it is easier to see how much the child is actually eating if given food in his/her own plate
  - ▶ To motivate mothers to feed the child a greater variety of foods, giving foods from the family meal and adding yogurt, potato, or milk if the food is too spicy should be recommended. The advantage of saving time by not having to prepare food separately for the child should be emphasized
  - ▶ To motivate mothers to feed the child a variety of foods rich in vitamins and minerals, adding seasonal fruits and vegetables (such as banana, curry, apples, potato, carrots) to what is already given to the child could be advised
  - ▶ To motivate mothers to add ghee or oil to the child's food, key arguments could be that the child will like the taste and that it is easy to do. Since mothers did not always choose to try this recommendation, additional arguments to motivate mothers could be explored
- The importance of an improved diet must be promoted to all family members, particularly fathers and mother-in-laws, so that the right types of foods are bought and the mother can give these foods to the child

- Doctors, lady health workers, and lady health volunteers need to be trained in child feeding and provided with materials such as counseling cards that will enable them to appropriately advise mothers on what children should be eating, how much, and how often. It is critical that health workers at all levels understand child feeding and be empowered to offer mothers consistent recommendations in response to their problems.

**Recommendation 2 Mothers should be breastfeeding at least 6-7 times in a 24 hour period**

*Implications for Program Design*

- Mothers should be advised to breastfeed at least 6-7 times in a 24-hour period, to mix milk in foods rather than giving milk to drink, and to use a cup and a spoon instead of a bottle
  - ▶ To motivate mothers to breastfeed more often, key arguments could be that since the mother is already breastfeeding, breastfeeding more often is easy to do and that breastfeeding more increases milk production. Other arguments supporting existing beliefs are that breastmilk gives energy, protects the child from disease, improves child development, is less expensive than other milk, satisfies the child, is easy to digest, is always fresh, and is a gift from God.
  - ▶ To motivate mothers to mix milk in foods like kheer, halwa, or suji rather than giving milk as a drink, key arguments could be that this could improve the child's health and lessen the child's likelihood of getting diarrhea.
  - ▶ Since it was difficult for some mothers to get the child used to using a cup instead of a bottle, mothers could be advised to replace the bottle with a cup gradually. To encourage mothers to do this, they could be reminded that bottles become dirty easily and are difficult to clean which can lead to diarrhea, whereas it is easier and less time consuming to clean a cup.
- Although most relatives support breastfeeding, the importance of breastfeeding, not giving milk as a drink, and not using the bottle should be promoted to all family members, including fathers and mother-in-laws who can all play an important role in influencing the mother's ability to improve practices. For fathers, the importance of breastfeeding and not giving other milk to drink should be emphasized as some fathers reported that they advised their wives to give other milk because they did not think there was enough breastmilk to satisfy the child.
- Doctors, lady health workers, and lady health volunteers need to be aware of the benefits of breastfeeding, how often a mother should be breastfeeding, and the dangers of bottle feeding.

**Children with Diarrhea, 0-5 months old**

**Recommendation 1 Mothers should continue breastfeeding (exclusively) and breastfeed**

## **more often**

### *Implications for Program Design*

- Mothers should be advised to breastfeed more, at least 10-12 times in a 24 hours and exclusively
  - ▶ To motivate mothers to breastfeed more often, key arguments could be that it is free, there is no need to prepare anything, it will stimulate milk production, it will replenish the water that the child has lost from the diarrhea and help the child recover, and the child will sleep better and be more satisfied
  - ▶ To motivate mothers not to give the child medicine for diarrhea if the child does not have bloody diarrhea, key arguments could be that the medicine can be harmful to the child and that the child can recover without the medicine
  - ▶ To motivate mothers to eat and drink more, the key argument could be that this will increase their milk
  - ▶ To motivate mothers to stop the bottle, key arguments could be that it saves time since the mother does not have to worry about cleaning the bottle and that dirty bottles can cause diarrhea
- Although most relatives support breastfeeding, the importance of continued exclusive breastfeeding with increased frequency during diarrhea should be promoted to all family members, especially fathers and mother-in-laws, who can all play an important role in influencing the mother's practices
- Doctors, lady health workers, lady health volunteers, and dais need to be aware of the need for continued and increased breastfeeding during diarrhea

### **Children with Diarrhea, 6-24 months old**

#### **Recommendation 1 Mothers should help replace the water lost through the diarrhea by giving ORS**

### *Implications for Program Design*

- Mothers should be advised to give at least ½ cup of ORS for each loose stool that the child has
  - ▶ To motivate mothers to give ORS, key arguments could be that ORS helps the child recover fluids lost during the diarrhea and get well

- The importance of giving the child ORS should be promoted to all family members, including fathers and mother-in-laws, who can help obtain the ORS and support the mother in its use
- Doctors, lady health workers, and lady health volunteers should be able to show mothers how to prepare and give ORS

**Recommendation 2 Mothers should continue feeding the child a variety of foods at least 3 times a day in adequate quantities**

*Implications for Program Design*

- Mothers should be advised to feed a variety of foods at least 3 times a day and in adequate quantities, as indicated in the recommendations for healthy children 12-24 months old
- The importance of continued feeding during diarrhea should be promoted to all family members, including fathers and mother-in-laws who can all play an important role in influencing the mother's ability to continue feeding her child when he/she has diarrhea
- Doctors, lady health workers, and lady health volunteers should all be aware of the importance of continued feeding during diarrhea and be able to counsel mothers accordingly

**Recommendation 3 If the child does not want to continue eating as normal, mothers should try different ways of encouraging the child to eat**

*Implications for Program Design*

- Mothers should be advised on different approaches to encourage her child to eat if she/he has poor appetite during diarrhea
  - ▶ To motivate mothers to give smaller servings of food at least 6 times a day, give an extra meal, feed the child his/her favorite foods, give mashed soft foods, or make food specially for the child, such as khichri, key arguments could be that the child needs to eat to recover and that the child will get better sooner if he/she keeps eating. Additional arguments will need to be explored as mothers seldom chose to try the majority of these recommendations
- The importance of continued feeding during diarrhea, even if the child has poor appetite, should be promoted among family members, particularly fathers and mother-in-laws, who can play an important role in influencing mother's practices
- Doctors, lady health workers, and lady health volunteers need to be aware of the importance

of continued feeding during diarrhea. They should be prepared to offer mothers suggestions on how to get the child to eat more in spite of poor appetite.

**Recommendation 4 Mothers should breastfeed more often, at least 8-10 times in 24 hours**

*Implications for Program Design*

- Mothers should be advised to breastfeed at least 8-10 times in 24 hours
  - To motivate mothers to breastfeed more often, key arguments could be that it is free, there is no need to prepare anything, it will stimulate milk production, it will replenish the water that the child has lost from the diarrhea and help the child recover, and the child will sleep better and be more satisfied
  - To motivate mothers not to give the child medicine for diarrhea if the child does not have bloody diarrhea, key arguments could be that the medicine can be harmful to the child and that the child can recover without the medicine
  - To motivate mothers to eat and drink more, the key argument could be that this will increase their milk
  - To motivate mothers to stop the bottle, key arguments could be that it saves time since the mother does not have to worry about cleaning the bottle and that dirty bottles can cause diarrhea
- Although most relatives support breastfeeding, the importance of breastfeeding, with increased frequency during diarrhea, should be promoted to all family members, including fathers and mother-in-laws, who can all play an important role in influencing the mother's ability to improve practices
- Doctors, lady health workers, and lady health volunteers should understand the need for continued and increased breastfeeding during diarrhea in order to be able to counsel mothers on breastfeeding if the child has diarrhea

**Children Recovering from Illness, 0-5 months old**

**Recommendation 1 Mothers should breastfeed more often and exclusively**

*Implications for Program Design*

- Mothers should be advised to breastfeed more, at least 10-12 times each 24 hours and exclusively

- ▶ To motivate mothers to breastfeed more often, key arguments could be that it is free, there is no need to prepare anything, it will stimulate milk production, it will help the child recover, and the child will sleep better and be more satisfied
  - ▶ To motivate mothers to eat and drink more, the key argument could be that this will increase their milk
  - ▶ To motivate mothers to stop the bottle, a key argument could be that it saves time since the mother does not have to worry about cleaning the bottle
- Although most relatives support breastfeeding, the importance of exclusive breastfeeding, with increased frequency during recovery, should be promoted to all family members, including fathers and mother-in-laws, who can all play an important role in influencing the mother's ability to improve practices
  - Doctors, lady health workers, lady health volunteers, and dais need to be aware of the need for continued and increased breastfeeding during illness

### **Children Recovering from Illness, 6-24 months old**

#### **Recommendation 1 Mothers should continue feeding the child a variety of foods at least 3 times a day in adequate quantities**

##### *Implications for Program Design*

- Mothers should be advised to feed a variety of foods at least 3 times a day and in adequate quantities, as indicated in the recommendations for healthy children 12-24 months old
- The importance of continued feeding during illness should be promoted to all family members, including fathers and mother-in-laws, who can all play an important role in influencing the mother's ability to continue feeding her child when he/she is sick
- Doctors, lady health workers, and lady health volunteers should all be aware of the importance of continued feeding during illness and be able to counsel mothers accordingly

#### **Recommendation 2 If the child does not want to continue eating as normal, mothers should try different ways of encouraging the child to eat**

##### *Implications for Program Design*

- Mothers should be advised on different approaches to encourage her child to eat if she/he has poor appetite during illness

- ▶ To motivate mothers to give smaller servings of food at least 6 times a day, give an extra meal, feed the child his/her favorite foods, give mashed soft foods, or make food specially for the child like khichri, key arguments could be that the child needs to eat to recover and that the child will get better sooner if he/she keeps eating. Additional arguments will need to be explored as mothers seldom chose to try the majority of these recommendations.
- The importance of continued feeding during illness, even if the child has poor appetite, should be promoted among family members, particularly fathers and mother-in-laws, who can play an important role in influencing the mother's practices.
- Doctors, lady health workers, and lady health volunteers need to be aware of the importance of continued feeding during illness. They should be prepared to offer mothers suggestions on how to get the child to eat more in spite of poor appetite.

**Recommendation 3 Mothers should be breastfeeding at least 6-8 times or two times more than usual in a 24 hour period**

*Implications for Program Design*

- Mothers should be advised to breastfeed at least 6-8 times in a 24 hour period or two times more than usual, mix milk in foods rather than giving milk to drink, and use a cup and a spoon instead of a bottle.
  - ▶ To motivate mothers to breastfeed more often, key arguments could be that since the mother is already breastfeeding, breastfeeding more often is easy to do, and that breastfeeding more increases milk production. Other arguments supporting existing beliefs are that breastmilk gives energy, protects the child from disease, improves child development, is less expensive than other milk, satisfies the child, is easy to digest, is always fresh, and is a gift from God.
  - ▶ To motivate mothers to mix milk in foods like kheer, halwa, or suji rather than giving milk as a drink, key arguments could be that this could improve the child's health and lessen the child's likelihood of getting diarrhea.
  - ▶ Since it was difficult for some mothers to get the child used to using a cup instead of a bottle, mothers could be advised to replace the bottle with a cup gradually. To encourage mothers to do this, they could be reminded that bottles become dirty easily and are difficult to clean, which can lead to diarrhea, whereas it is easier and less time-consuming to clean a cup.
- Although most relatives support breastfeeding, the importance of continued and increased

breastfeeding during illness should be promoted to all family members, including fathers and mother-in-laws, who can all play an important role in influencing the mother's ability to improve practices

- Doctors, lady health workers, and lady health volunteers should be aware of the importance of continued breastfeeding during illness

### **General Recommendations**

#### **Recommendation 1 Mothers should have their children fully vaccinated**

##### *Implications for Program Design*

- Many of the children were found to not be fully vaccinated
  - To motivate mothers to take their child to be vaccinated, key arguments could be that it prevents illnesses that make the child suffer, weaken the child, and can even kill the child
- Mothers and their families, including fathers and mother-in-laws, need to be encouraged to get their children fully vaccinated
- Mechanisms by which health workers can encourage and facilitate vaccination need to be investigated Doctors, lady health workers, and lady health volunteers should be proactive and encourage families to vaccinate their children
- Mechanisms by which health workers can facilitate vaccination should be identified

#### **Recommendation 2 Mothers should practice proper hygiene**

##### *Implications for Program Design*

- Mothers should be advised to wash their hands before preparing and serving food and after using the toilet, and to use clean utensils and plates in order to prevent diarrhea
  - To motivate mothers to wash their hands and to use clean utensils and plates, key arguments could be that "cleanliness is part of our religion," "disease can be avoided by cleanliness," and that "cleanliness is necessary for health "
- The importance of good hygiene for preventing diarrhea should be promoted to all family members, including fathers who already have strong beliefs about the importance of

cleanliness and mother-in-laws, who can also play an important role in influencing the mother's ability to improve hygiene practices

- Doctors, lady health workers, lady health volunteers, and dais should be able to counsel mothers on appropriate hygiene practices

## **IV. Data on Communication Preferences**

### **A Pregnant and Lactating Women**

Communication data was collected from 70 pregnant or lactating mothers and 43 mothers of sick children and children recovering from illness

#### **Radio**

In both urban and rural areas, slightly less than half the mothers reported having a radio. Of those respondents who did have one, half do not listen to it at all. Reasons for not listening to the radio include the woman's heavy workload, her lack of interest in listening, and the fact that the husband and children control what stations and programs are heard. Those few women who reported listening regularly to the radio cited musical and entertainment programs and discussions among females on female issues as their favorite types of radio program (e.g., "MEHFIL"). A few women reported listening to radio programs occasionally while they are working or when someone else has put on a program.

#### **Television**

Approximately two-thirds of women interviewed said they have television, and of these an overwhelming majority reported watching TV for two hours or less per day. Only a few women said that they never watch TV. The favorite program is an Urdu drama that is aired around 8 pm, but women also reported watching musical, news, and health programs. The most common time to watch TV was between 8 and 10 pm.

#### **Sources of Information**

Respondents' most desired source of information was health-care providers, and among that group, doctors are most favored. A few women mentioned LHWs as a convenient source of information because they visit women, who then do not have to go elsewhere to seek information.

About one-third of the women said they like to get information on health issues from family members, especially parents and other "older, experienced members." "They have been through many of these experiences and they have learned through experience so their advice is good."

## **Gathering Places**

Regarding places where women usually gather, the majority of mothers mentioned marriages and mourning occasions where they meet. Several women mentioned personal visits as an occasion to get together with other women (it seems that urban women visit each other less frequently). Other places mentioned in this regard include shopping, water sources, and where they cook roti (the tandoor).

## **B Husbands and Mothers-in-law (MILs)**

Researchers interviewed a total of 10 fathers and 12 MILs concerning communication channel preferences.

### **Radio**

About half of MILs had radio. Fewer than half of the fathers possessed a radio. Most MILs and fathers do not listen to radio or listen to it rarely. The ones who listen to radio like entertainment programs.

### **Television**

Most MILs and fathers have a TV, which they watch regularly, but for less than two hours a day. Most fathers prefer news, and MILs prefer drama. Only one MIL said health programs are her favorite.

### **Sources of Information**

Most fathers and MILs prefer to receive health information from a doctor. About half of the fathers mentioned TV as another good source of information on health. In addition, some fathers mentioned newspapers as a good source of information.

## **Gathering Places**

The majority of MILs and husbands mentioned that women tend to meet at marriages and deaths, as well as during personal visits.

## Annex A

### Maternal Health TIPs Interview Summary Tables

## Segment Pregnant Women

### Problem 1 Pregnant women not eating enough & not increasing their food intake, they are eating the same quantity as before pregnancy

Recommendations	Second TIPs Interview								Third TIPs Interview									
	Total No of mother who received these recommendations		Mother s reactions to these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
<b>1a</b> Try to take foods with your family or children or when you cook	22	6	17	3	5	2	7	1	5	1	5	1	0	0	2	1	5	1
<b>1b</b> Increase the amount of food that you eat (1 more meal or increase the amount of rice [1 pao] add a serving of vegetable or fruit at each meal, add milk lassi or yogurt at each meal)	22	6	17	4	5	1	14	4	12	4	12	4	3	0	3	0	9	4
<b>1c</b> Add two snacks in addition to normal meals everyday	22	6	20	6	2	0	14	5	12	5	12	4	1	0	2	0	12	5
<b>1d</b> Avoid skipping meals	22	6	22	6	0	0	8	4	7	4	6	4	0	0	1	1	4	3
<b>1e</b> Add ghee butter, oil when cooking or eating (1 2 tablespoons per meal)	22	6	16	3	6	1	1	0	0	0	0	0	0	1	1	0	0	0
<b>1f</b> Eat a food every other day you don't eat often like egg or meat	22	6	15	4	7	1	3	1	3	1	3	1	2	0	0	0	3	1
<b>1g</b> Eat frequently (every 2 hours) small meals & snacks when you feel hungry	22	6	13	4	9	1	2	0	2	0	3	0	0	0	0	0	2	0

## Problem 2 Pregnant women not eating enough variety of foods

Recommendations	Second TIPs Interview								Third TIPs Interview									
	Total No of pregnant women who received these recommendations		Pregnant women s reactions to these recommendations				# Pregnant women who agreed to try		# Pregnant women who actually tried		Reaction of pregnant women after trying these recommendations				Pregnant women who initially agreed but did not follow the recommendation		Pregnant women who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
<b>3a</b> Add some vegetables to each meal every day	6	3	6	2	0	1	6	2	5	1	5	0	2	0	1	1	5	1
<b>3b</b> Include a fruit with your snack daily	6	3	5	3	1	0	1	2	2	1	1	1	1	0	1	1	1	1
<b>3c</b> Grow a vegetable garden	6	3	0	0	4	3 2 NR	0	0	0	0	0	0	0	0	0	0	0	0
<b>3d</b> Add foods, like meat and egg, every other day	6	3	2	3	2	0	0	1	0	0	0	0	0	0	0	0	0	0
<b>3e</b> Talk to your husband and/or mother in law about the other recommendations you have agreed to try & ask for their support	6	3	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NR = not reported

**Problem 3 Pregnant women are not taking iron tablets**

Recommendations	Second TIPs Interview								Third TIPs Interview									
	Total No of pregnant women who received these recommendations		Pregnant women's reactions to these recommendations				# Pregnant women who agreed to try		# Pregnant women who actually tried		Reaction of pregnant women after trying these recommendations				Pregnant women who initially agreed but did not follow the recommendation		Pregnant women who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
<b>2a</b> Go to LHW to get iron tablets	19	5	6	2	13	3	6	2	4	2	4	1	1	0	2	1	4	1
<b>2b</b> Go to the health center or send your husband to get iron tablets	19	5	15	5	4	0	11	3	5	1	4	1	1	0	6	2	5	2
<b>2c</b> Buy a large supply of iron tablets from the pharmacy, especially if you live a long distance from the health center	19	5	12	4	7	1	11	2	3	2	3	0	1	0	8	0	3	0
<b>2d</b> Eat meats at least every other day which you do not eat regularly	19	5	13	4	6	1	5	3	4	3	4	3	1	0	1	0	4	0

1/8

## Segment Lactating Women

### Problem 1 Lactating women not taking enough food and drink

Recommendations	Second TIPs Interview						Third TIPs Interview											
	Total No of mothers who received this recommendation Urban Rural		Mothers reactions to these recommendations		# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue			
			Positive	Negative					Positive	Negative								
U=Urban R=Rural	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R		
1a Try to take food with your family or children or when you cook	11	30	11	14	0	4	4	4	3	4	3	3	0	1	1	0	1	2
1b Increase the amount of food that you eat (1 more meal or increase the amount of rice [1 pao] add a serving of vegetable or fruit at each meal, add milk lassi or yogurt at each meal)	11	30	8	25	3	1	8	16	7	15	7	17	0	0	1	1	8	12
1c Add two snacks in addition to meals each day	11	30	10	20	0	2	6	10	6	9	6	9	0	0	0	1	5	7
1d Avoid skipping meals & eat three meals a day	11	30	9	24	2	1	6	12	5	10	5	13	0	1	0	2	1	6
1e Increase the frequency of eating & eat whenever you feel hungry	11	30	7	13	3	6	3	0	0	0	0	0	0	0	0	0	0	0
1f Eat a food you don't eat often like egg or meat every other day	11	30	7	16	2	1	1	3	1	3	1	2	0	0	0	0	0	0
1g Increase the amount of ghee butter or oil in diet (take 1 or 2 tablespoons)	11	30	4	14	5	3	1	9	1	6	1	4	0	1	0	3	0	5
1h Drink at least a pao of liquid each time you breastfeed	11	30	11	28	0	2	8	20	8	18	8	15	0	2	0	2	7	15
1i Take at least one extra hour rest each day if you can't add any additional foods	11	30	5	16	4	2	0	4	0	3	0	3	0	0	0	1	0	3

119

## Problem 2 Lactating women not eating enough of a variety of foods

Recommendations	Second TIPs Interview						Third TIPs Interview											
	Total No of mothers who received this recommendation Urban - Rural		Mothers' reactions to these recommendations				# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue				
			Positive		Negative				Positive		Negative							
U=Urban R=Rural	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R		
<b>2a</b> Add a small amount of fruits and vegetables to each meal every day	7	20	7	18	0	1	6	12	6	10	6	9	2	1	0	3	5	6
<b>2b</b> Include a fruit with your snack daily	7	20	4	12	1	2	4	6	2	6	2	6	0	1	0	0	2	0
<b>2c</b> Grow a vegetable garden	7	20	3	2	2	8	0	2	0	1	0	1	0	0	0	0	0	0
<b>2d</b> Add foods, like meat and egg, every other day	7	20	6	11	0	1	1	9	1	8	1	6	1	2	0	1		3

### Problem 3 Lactating women are not taking iron tablets

Recommendations	Second TIPs Interview							Third TIPs Interview										
	Total No of mothers who received this recommendation		Mothers' reactions to these recommendations				# Mothers who agreed to try	# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue			
			Positive		Negative					Positive		Negative						
U=Urban R=Rural	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R		
<b>3a</b> Visit your LHW to get iron tablets	6	19	6	5	0	10	5	3	2	2	0	2	0	0	0	1	0	1
<b>3b</b> Go to health center personally or send your husband to get iron tablets	4	19	4	7	0	8	2	5	0	3	0	3	0	0	2	2	0	2
<b>3c</b> Buy a large supply of iron tablets from pharmacy, especially if you live a long distance from the health center	4	19	3	11	1	0	2	6	0	6	0	6	0	0	1	10	0	4
<b>3d</b> Eat meat at least every other day	4	11	2	8	2	5	1	6	1	4	1	4	0	1	0	2	0	4

511

## Annex B

### Child Health TIPs Interview Summary Tables

Segment Mothers of Healthy Children, 6 - 11 months old

Problem- 1 Mothers are not giving complementary foods, are not feeding frequently enough, or are not giving enough food per serving

Recommendations	TIPS II								TIPS III									
	Total No. of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
1a Feed your child at least 3 times daily	10	5	10	5	0	0	10	5	9	3	8	3	1	0	1	2	7	3
1b Increase the serving size of child of 6-9 months to ½ pao. Give this ½ pao serving thrice daily	8	5	6	5	2	0	3	3	3	2	3	2	0	0	0	1	3	2
1c Breastfeed your child 6-8 times daily & feed semi solids between breastfeeds	10	4	10	4	0	0	7	0	7	0	6	0	1	0	0	0	7	0
1d Have a set meal time for you child (same as of the family)	10	4	8	3	2	1	3	2	2	2	2	2	0	0	1	0	1	2
1e Feed the child same food as the family. If food is spicy, add yogurt, potato or milk	12	5	12	5	0	0	7	2	5	2	4	2	1	0	1	0	4	1
1f Make child's diet thick like <i>firmi</i>	6	6	6	6	0	0	2	3	2	3	2	3	1	1	0	0	2	2
1g Add some oil/butter or ghee to child's food (1 teaspoon per meal)	10	4	9	3	1	1	4	0	2	0	2	0	0	0	2	0	2	0
1h Make some food specially for child like <i>khichri</i>	8	5	6	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of cases to whom this problem was identified = 20 (13R+7U)

**Problem-2 Mothers are not providing foods that have enough vitamins and minerals or a sufficient variety of foods**

Recommendations	TIPS II								TIPS III									
	Total No. of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
2a Add in season fruits or vegetables (mango carrots peas, apricots) to each meal	10	4	10	4	0	0	5	2	5	2	5	2	1	1	0	0	4	1
2b Give the child some of the families vegetables and mash them. If spicy add yogurt potato or rice	9	3	9	3	0	0	6	1	6	1	6	1	1	0	0	0	4	1
2c Add vegetable or meat to a food that the child already eats	8	3	8	3	0	0	2	1	1	1	1	1	0	1	1	0	1	1
2d Include foods from each of the 4 food groups each day Staple (roti rice), fruits & vegetables protein (dahl egg meat milk) and fat & sugar	8	3	8	3	0	0	3	1	3	1	3	1	0	0	0	0	2	1
2e Give your child fruit for a snack every day	8	4	8	4	0	0	2	2	2	1	2	1	0	0	0	1	1	1

Total number of cases to whom this problem was identified = 15 (11R+4U)

118

**Problem- 3 Mothers are giving other milks**

Recommendations	TIPS II								TIPS III									
	Total No. of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
3a Breastfeed the baby 6-8 times daily	4	1	4	1	0	0	1	1	1	1	1	1	0	0	0	0	1	0
3b Include milk as part of the infant foods like <i>kheer</i> or <i>sujji</i> instead of giving the child the milk to drink	3	3	3	3	0	0	3	3	3	3	2	3	2	0	0	0	1	2
3c Switch from a bottle to a cup	4	3	3	3	1	0	3	3	3	2	2	2	1	0	0	1	1	2

Total number of cases to whom this problem was identified = 7 (4R+3U)

1/19

**Problem- 4 Mothers are not using proper hygiene**

Recommendations	TIPS II								TIPS III									
	Total No of mothers to whom these recommendations were given		Mother s reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
4a Wash your hands before preparing food serving food and after coming from toilet	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	0	1
4b Use only clean utensils and plates for food	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4c Feed the baby from cup instead of bottle feeding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4d Cover the food and heat it well before serving if you must keep the leftovers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4e Discontinue the teether or soother	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of cases to whom this problem was identified = (R+U)

120

Segment Mothers of Healthy Children 12 - 24 Months Old

Problem- 1 Mothers are not giving complementary foods or giving too little or not frequently enough

Recommendations	TIPS II								TIPS III									
	Total No of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
1a Feed your child at least 4 times daily	14	3	14	2	0	1 RN	14	1	14	1	14	1	0	1	0	0	12	1
1b Increase the serving size of child of 6-9 months to ½ pao Give this ½ pao serving thrice daily	10	4	8	4	2 NR	0	2	3	2	3	2	3	0	0	0	0	2	3
1c Feed the child from his/her own bowl	11	3	8	2	3 NR	1	3	1	3	1	3	1	0	0	0	0	3	1
1d Have a set meal time for feeding the child (same as the family)	12	3	8	2	2 NR	1	3	0	3	0	3	0	0	0	0	0	3	0
1e Feed the child the same foods as the family Add yogurt potato or milk if spicy	13	4	11	4	2 NR	0	8	2	7	2	7	2	1	0	1	0	7	2
1f Avoid feeding sweets sugary drinks & soda especially before meals	8	3	5	3	3 NR	0	0	1	0	1	0	1	0	1	0	0	0	1
1g Add some oil/ butter or ghee to child's food (1 teaspoon per meal)	10	3	9	2	1 NR	1 NR	5	1	5	1	5	1	0	0	0	0	5	0

Total number of cases to whom this problem was identified = 14 Rural + 4 Urban

**Problem- 2 Mothers are not providing foods that have enough vitamins and minerals or a sufficient variety of foods**

Recommendations	TIPS II								TIPS III									
	Total No of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
2a Add in season fruits or vegetables (pumpkin mango carrots, peas apricot) to each meal	7	3	7	3	0	0	6	3	6	3	6	3	0	0	0	0	6	3
2b Give the child some of the family s vegetables that you have cooked If spicy add yogurt potato or rice	7	3	6	3	1-NR	0	4	2	4	2	3	2	2	1	1	0	2	2
2c Add vegetables or meat to a food that the child already eats	8	2	8	1	0	1 NR	5	1	4	0	4	0	1	1	1	1	4	0
2d Include foods from each of the 4 food groups each day i e staple (roti, rice), fruits & vegetables proteins (dahl egg meat milk) and fat & sugar	7	2	6	1	1 NR	1 NR	2	0	2	0	2	0	0	0	0	0	2	0
2e Give your child fruits for a snack each day	8	3	5	3	3 NR	0	2	2	2	1	2	1	0	0	0	1	2	0

Total number of cases to whom this problem was identified = 9 Rural + 3 Urban

122

**Problem- 3 Mothers are feeding other milks**

Recommendations	TIPS II								TIPS III									
	Total No of mothers to whom these recommendations were given		Mother's reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
3a Breastfeed the child 6 7 times a day	2	1	1	0	1 NR	1	0	0	0	0	0	0	0	0	0	0	0	0
3b Include milk as a part of child's food Serve <i>kheer</i> or <i>sujj</i> made with milk instead of giving the child the milk to drink	3	1	3	1	0	0	2	1	2	0	2	0	1	0	0	1	2	0
3c Switch from a bottle to a cup	2	1	2	1	0	0	1	1	1	1	1	1	1	0	0	0	1	1

Total number of cases to whom this problem was identified = 3 Rural +1 Urban

123

**Problem- 4 Mothers think they are too busy to feed the child**

Recommendations	TIPS - II								TIPS - III									
	Total No of mothers to whom these recommendations were given		Mothers reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
4a Make time to feed your child or watch & encourage your child to feed themselves	2	0	2	0	0	0	2	0	2	0	2	0	0	0	0	0	1	0
4b Feed the same food as the family Add yogurt or potato if spicy	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4c Give your child their own bowl & small spoon	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4d Avoid putting foods in the feeder Use cup or glass instead	2	0	2	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0

Total number of cases to whom this problem was identified = 2 Rural + 0 Urban

124

**Problem- 5 Mothers are not using proper hygiene**

Recommendations	TIPS - II								TIPS - III									
	Total No of mothers to whom these recommendations were given		Mother s reactions against these recommendations				# Mothers who agreed to try		# Mothers who actually tried		Reaction of mothers after trying these recommendations				Mothers who initially agreed but did not follow the recommendation		Mothers who agreed to continue	
			Positive		Negative						Positive		Negative					
R=Rural U=Urban	Rural	Urban	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U
5a Wash your hands before preparing food serving food & after using toilet	2	0	2	0	0	0	2	0	2	0	2	0	0	0	0	0	2	0
5b Use only clean utensils & plates for food	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5c Serve freshly prepared foods	2	0	2	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0
5d Switch from a bottle to a cup	1	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0
5e Cover food and heat it well before serving if you must keep leftovers	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5f Discontinue the teether or soother	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of cases to whom this problem was identified = 2 Rural & 0 Urban

125

**Segment Mothers of Children with Diarrhea, 0 - 5 Months Old**

**Problem- 1 Mothers decrease breastfeeding during diarrhea**

Recommendations	TIPS - II				TIPS - III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
1a Continue breastfeeding with increased frequency at least 10-12 times in a day & night	6	6	0	5	5	5	0	0	5
1b Breastfeed after every stool	7	7	0	3	3	3	0	0	3
1c Avoid medicine for diarrhea unless it is bloody	6	6	0	1	1	1	0	0	1
1d Increase the foods & fluids you eat so that you can produce a large amount of milk	7	7	0	5	5	5	1	0	5

Total number of cases to whom this problem was identified = 7 (5R+2U)

126

**Problem- 2 Mothers are not using proper hygiene**

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
2a Wash your hands before preparing serving food and after using the toilet	4	4	0	3	3	3	0	0	3
2b Use only clean utensils and plates for food or drink	3	3	0	1	1	1	0	0	1
2c Do not use bottle to feed your child	4	4	0	2	2	2	0	0	2
2d Discontinue the teether and soother	3	3	0	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 4 (4R+0U)

127

**Problem- 3 Mothers are not exclusively breastfeeding, not breastfeeding frequently enough, or not breastfeeding at all**

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
3a Breastfeed more frequently 10 12 times a day & night	4	3	1	2	2	2	0	0	2
3b Switch from bottle feeding to giving milk by cup & spoon	3	3	0	1	1	1	0	0	1
3c Only breastfeed the child & stop using bottle	3	2	1	0	0	0	0	0	0

Total number of cases to whom this problem was identified = 4 (3R+1U)

128

**Problem- 4 Mothers, the community and families think that diarrhea is caused by “nazar,” “saya” and heat**

Recommendations	TIPS II			TIPS III					
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
4a Diarrhea is actually caused by germs that get in food in water & in other drinks	2	2	0	1	1	1	0	0	1
4b Give more frequent feedings of breastmilk	2	2	0	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 2 (2R+0U)

129

**Segment Mothers of Children with Diarrhea, 6 - 24 Months Old**

**Problem- 1 Mothers are not replacing the water that the child is losing through diarrhea**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
1a Give at least ½ cup of ORS for each loose stool. If child needs more give him/her more ORS	11	10	1	9	7	7	0	2	6
1b Use a cup and spoon or just a cup to feed ORS to child	10	9	1 NR	5	3	3	0	2	3
1c Buy ORS at the pharmacy and keep some extra in case the diarrhea returns	10	9	1	1	1	1	0	0	1
1d Make sugar salt solution (SSS) at home with clean water & salt. I can show you how to make it	10	9	1 NR	2	2	2	0	0	1
1e Continue breast feeding & more frequently than before	8	7	1	3	3	3	0	0	2

Total number of cases to whom this problem was identified = 11 (8R+3U)

**Problem- 2 Mothers believe that the child has a poor appetite and poor digestion They therefore give less food**

130

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
2a Feed variety of foods like foods from the 4 different food groups (especially fruits & vegetables like carrots mango spinach, pumpkin)	6	6	0	4	3	3	0	1	3
2b Give smaller servings of foods but more frequently & at least 6 times a day	5	5	0	2	1	1	0	1	2
2c Serve food that have the thickness of <i>firm</i> rather than thin watery foods	5	4	1	2	2	2	0	0	2
2d Add one tablespoon of oil or ghee to a serving of food	5	4	1	2	2	2	0	0	2
2e Feed your child their favorite foods	4	3	1 NR	1	1	1	0	0	1
2f If your child doesn't want to eat regular food serve child some mashed soft foods	4	3	1	0	0	0	0	0	0

Total number of cases to whom this problem was identified = 6 (3R+3U)

131

**Problem- 3 Mothers are not using proper hygiene**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
3a Wash your hands before preparing food serving food and after using toilet	6	5	1 NR	4	4	4	0	0	4
3b Use only clean utensils and plates for food or drink	6	6	0	5	5	5	0	0	5
3c Switch from a bottle to a cup or spoon for feeding food or drink	5	5	0	4	3	3	1	1	3

Total number of cases to whom this problem was identified = 6 (5R+1U)

137

**Problem- 4 Mothers are not feeding enough quantity of food to child, not feeding often enough, or not giving at all**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
4a Feed the semi solids at least three times daily	4	3	1	2	1	1	0	1	1
4b Increase the amount of 6-9 months child's feed to ½ pao. Feed this amount 2 or 3 daily	2	2	0	0	0	0	0	0	0
4c Breastfeed the child 6-8 times daily. Give semi solids between breast feeds	3	3	0	1	1	1	0	0	1
4d Set a meal time for child & try to feed the child along with the family	3	3	0	1	1	1	0	0	1
4e Give the child the same food cooked for the whole family. If spicy add mashed potato yogurt rice or milk	4	4	3	1	1	1	1	0	1
4f Make food thick like <i>firni</i>	4	2	2	2	2	2	0	0	2
4g Add some oil, butter or ghee to child's meal. (At least one teaspoon at every meal)	3	3	0	1	1	1	0	0	1
4h Make some special food like <i>khichri</i> for child	2	2	0	0	0	0	0	0	0

Total number of cases to whom this problem was identified = 4 (3R+1U)

**Problem- 5 Mothers are not exclusively breastfeeding, not breastfeeding frequently enough, or not breastfeeding at all**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
5a Breastfeed more frequently at least 8-10 times in a day & night	2	2	0	1	1	0	1	0	0
5b Switch from a bottle to a cup and spoon	2	2	0	1	1	0	1	0	0
5c Only breastfeed & stop feeding from bottle	2	2	0	1	1	0	1	0	0

Total number of cases to whom this problem was identified = 2 (2R+0U)

134

**Problem- 6 Mothers, the community and families think that diarrhea is caused by “nazar,” “saya” and heat and will not get better on doctor’s advice**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother’s reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
6a Diarrhea is actually caused by germs that get in food & in water & other fluids	2	2	0	0	0	0	0	0	0
6b Give breastmilk more frequently	2	1	1	0	0	0	0	0	0
6c Feed ORS & SSS in addition to breastmilk	2	2	1	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 2 (2R+0U)

**Problem- 7 Mothers stop or decrease breastfeeding during diarrhea, as mother's milk is considered to increase the diarrhea**

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
7a Continue breastfeeding with increased frequency	1	1	0	1	1	1	0	0	1
7b Breastfeed after every stool	0	0	0	0	0	0	0	0	0
7c Avoid giving medicines for non bloody diarrhea	1	1	0	1	1	1	0	0	1
7d Increase the food and fluids you eat so that you can produce a large amount of milk	1	1	0	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 1 (1R+0U)

130

**Segment Mothers of Children Recovering from Illness, 0 - 5 Months Old**

**Problem- 1 Mothers are not exclusively breastfeeding, or not breastfeeding frequently enough or not breast feeding at all**

Recommendations	TIPS - II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
1a Breastfeed more frequently 10 12 times a day & night	10	9	1	6	6	6	0	0	4
1b Switch from bottle feeding to giving milk by cup & spoon	7	7	0	3	3	2	1	0	2
1c Only breastfeed the child & stop using bottle	8	8	0	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 10 (8R+2U)

137

**Problem- 2 Mothers are not using proper hygiene**

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
2a Wash your hands before preparing serving food and after using the toilet	9	9	0	3	3	3	0	0	3
2b Use only clean utensils and plates for food or drink	9	8	1	1	1	1	0	0	1
2c Do not use bottle to feed your child	9	8	1	7	6	6	1	1	6
2d Discontinue the teether and soother	8	8	0	1	1	1	1	0	1

Total number of cases to whom this problem was identified = 9 (7R+2U)

**Problem-3 Mothers, the communities and families think that diarrhea is caused by “nazar,” “saya” and heat**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother s reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
3a Diarrhea is caused due to germs/bacteria which gets into food & into water & in all fluids	5	5	0	1	1	1	0	0	1
3b Give more frequent feedings of breastmilk	5	5	0	1	1	1	1	0	1
3c Make and feed ORS (either from the store or made at home) in addition to breastmilk	4	4	0	1	1	1	0	0	1
3d Illness is not due to nazar' or saya'	4	4	0	1	1	1	0	0	1

Total number of cases to whom this problem was identified = 5 (5R)

134

**Segment Mothers of Children Recovering from Illness, 6 - 24 Months Old**

**Problem- 1 Mothers are not giving complementary foods or giving too little or not frequently enough**

Recommendations	TIPS II				TIPS III				
	Total No. of mothers to whom these recommendations were given	Mother's reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
1a Feed your child at least 4 times daily	14	13	1 NR	9	9	7	2	0	7
1b Increase the serving size of child of 6-9 months to ½ pao. Give this ½ pao serving thrice daily	10	9	1	5	4	3	2	1	3
1c Breast feed the child 6-8 times a day & feed semi solids between breast feeds	8	6	1 NR	2	2	2	1	0	1
1d Have a set meal time for feeding the child (same as the family)	13	12	1 NR	4	4	4	0	0	3
1e Feed the child the same foods as the family. If food is spicy add yogurt, potato or milk	15	14	1 NR	7	7	7	0	0	5
1f Avoid feeding sweets, sugary drinks & sodas especially before meals	11	10	1 NR	2	2	2	0	0	2
1g Add some oil/ butter or ghee to child's food (1 teaspoon per meal)	12	11	1 NR	6	5	4	1	1	4
1h Make some food specially for child like "khichri"	14	12	1 NR	4	4	3	1	0	3

041

**Problem- 2 Mothers do not increase the amount of food their babies eat when they are recovering from illness**

Recommendations	TIPS II				TIPS III				
	Total No of mothers to whom these recommendations were given	Mother s reactions against these recommendations		# Mothers who agreed to try	# Mothers who actually tried	Reaction of mothers after trying these recommendations		Mothers who initially agreed but did not follow the recommendation	Mothers who agreed to continue
		Positive	Negative			Positive	Negative		
2a Increase the frequency of breastfeeding each day At least 2 times more than usual	11	9	1 1 NR	3	2	1	1	1	2
2b Have the child weighed every week until he/she regains the weight lost during illness	10	4	5 1 NR	1	1	1	0	0	1
2c Breastfeed more frequently avoid bottle feeding or other drinks	10	5	4 1 NR	3	3	1	2	0	1
2d Increase the amount of food & drink in your diet also	11	8	2 1 NR	2	2	2	1	0	2
2e Serve at least one more meal to child each day at least 4 meals to child under 1 year & 6 meals for a child under age of 1 year	10	10	0	8	8	7	1	0	8
2f Add oil or ghee to all meals	9	9	0	2	2	2	0	0	2
2g Add vitamin A sources daily to child s meals e g carrots green vegetables ghee etc	11	11	0	7	7	6	1	0	6
2h Serve your child s favorite foods daily	9	9	0	4	4	4	1	0	4

141