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USAID'S INFANT & YOUNG CHILD NUTRITION PROJECT



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ENGAGING GRANDMOTHERS AND MEN IN INFANT AND YOUNG CHILD FEEDING AND MATERNAL NUTRITION

Report of a formative assessment
in Eastern and Western Kenya

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Acronyms

AIDS	acquired immune deficiency syndrome
APHIA II Western	AIDS, Population and Health Integrated Assistance Program II Western Province
APHIAplus	AIDS, Population and Health Integrated Assistance Plus program
FGD	focus group discussion
HIV	human immunodeficiency virus
IYCN	Infant & Young Child Nutrition Project
KDHS	Kenya Demographic and Health Survey
MOPHS	Ministry of Public Health and Sanitation
NTA	Nutrition Technical Advisor
PATH	Program for Appropriate Technology in Health
PMTCT	prevention of mother-to-child transmission of HIV
PHE	Public Health Evaluation (United States President's Emergency Plan for AIDS Relief)
WHO	World Health Organization

Executive summary

The United States Agency for International Development's Infant & Young Child Nutrition (IYCN) Project and PATH's prevention of mother-to-child transmission of HIV team conducted an infant feeding assessment in Eastern and Western Provinces, Kenya, in 2007–08 with Public Health Evaluation (PHE) funds from the United States President's Emergency Plan for AIDS Relief. The evaluation assessed the infant feeding practices of HIV-positive mothers and the infant feeding counseling they received, specifically focusing on the transition period from breastfeeding to replacement feeding. Recommendations based on the findings include increasing counseling and messages on appropriate complementary feeding for the breastfed and non-breastfed child, and engaging men and grandmothers to support optimal infant and young child feeding practices. Based on these recommendations, the IYCN Project will use follow-on PHE funds to evaluate interventions in Western Kenya to improve maternal, infant, and young child nutrition practices by increasing grandmothers' and fathers' support of optimal practices.

IYCN will train community health workers to work with grandmothers and men in Western Province to support both HIV-positive and HIV-negative mothers and their infants to improve maternal dietary and infant feeding practices. The community-based interventions will then be evaluated. For this activity, IYCN will work closely with the AIDS, Population and Health Integrated Assistance Plus (APHIPlus) program in Western Province, where PATH is the lead implementing partner.

Although a substantial amount of information on infant and young child feeding practices in Kenya is available, a review of the literature in 2008 identified considerable gaps in detailed information on complementary feeding and maternal dietary practices in the country. The purpose of this formative assessment was to document infant and young child feeding and maternal dietary practices and generate information to be used in the design of culturally relevant interventions for engagement of men and grandmothers to support and improve maternal, infant and young child feeding in Eastern and Western Provinces.

The objectives of the assessment were to:

1. Assess complementary feeding practices of children younger than 2 years and community beliefs that influence these.
2. Determine maternal dietary practices during pregnancy and lactation and household factors that influence these.
3. Establish the roles and responsibilities of men and grandmothers in the family and in maternal dietary and infant and young child feeding practices.
4. Determine cultural influencers of maternal, infant, and young child feeding.
5. Document available services and support for nutrition in the intervention areas.

The assessment utilized an in-depth participatory approach to gather information from community members and selected key informants on the diets of women, feeding practices of children less than 2 years, roles of men and grandmothers, and household and community factors

influencing maternal, infant, and young child feeding practices. Data collection methods involved a review of available literature and use of various qualitative data collection techniques, including focus group discussions (FGDs), key informant interviews, strategic conversations, and observations. A total of 16 FGDs and 28 key informant interviews were conducted. All FGDs were tape-recorded.

Teams conducting the assessment were trained by an IYCN consultant Nutrition Technical Advisor and Senior Research Assistant. Training and participant manuals were developed and used to facilitate the training. Efforts were made to ensure quality of data collected through pre-testing of discussion guides, field supervision, tape-recording of all discussions, and daily review and discussion of outputs. Detailed write-ups of discussions were completed after each FGD. Taped discussions were later transcribed, translated, and used together with detailed notes from each FGD in compiling findings of the assessment. The data were triangulated during analysis.

Summary of key findings

Feeding practices for children younger than 2 years

Culturally in Kenya, infant and young child care and nurturing is the domain of mothers as primary caregivers. Nevertheless, feeding practices for infants and young children in both provinces are strongly influenced by cultural beliefs that were identified through this assessment. Grandmothers are custodians of these beliefs and are central in propagating them.

Breastfeeding

- Despite awareness about the recommendation to breastfeed exclusively for the first six months of life, most mothers introduce other foods early on the advice of grandmothers, particularly when babies cry often in the early months, which is regarded as an indication that breastmilk is insufficient. Another motivation is that when babies are fed porridge, they sleep for long hours, enabling mothers to attend to other responsibilities. Some mothers are afraid if they breastfeed exclusively for six months, it will be taken to mean they are HIV positive.
- The majority of mothers supplement breastmilk with water, cow's milk, thin maize meal porridge, and fruit juices at 2 to 3 months. These foods tend to replace breastmilk, predisposing young infants to early onset of malnutrition, especially because the foods are low in energy and vital nutrients, as well as to an increase in the risk of infection and illness. By 6 to 8 months, infants are fed on starchy diets largely comprising mashed bananas and potatoes.
- Infants are typically breastfed for two to three years; however, reasons for early cessation of breastfeeding include the mother becoming pregnant, doctor's advice (HIV-positive mothers), baby refusing to eat other foods well, and a reduction in breastmilk supply.

Complementary feeding

- While mothers in both provinces are knowledgeable about recommendations related to breastfeeding, they have much less awareness of complementary feeding. Suboptimal and inappropriate complementary practices identified through this assessment include early introduction of complementary foods (0–3 months), low energy and nutrient content of foods for young children, and inadequate frequency of feeding.
- For the most part, the diets of young children are limited to foods that are available to the household. Consequently, young children generally eat the same foods as the rest of the family but with some modification to make them soft. While some efforts are made to enrich foods, this is limited to the few households that can afford to do this. Consequently, diets consumed by young children are predominantly starchy, with minimal consumption of animal proteins, vegetables, and fruits.
- Complementary feeding behaviors such as supervision of feeding, active feeding, and encouraging young children to eat are suboptimal, in part due to the heavy workloads of primary caregivers. In Western Province, force feeding is a common practice (firmly closing the nose and forcefully pouring down food using the palm).
- Children younger than 2 years are generally fed three times in a day, with porridge given in between meals whenever the child is hungry. Of special concern is the practice of cooking porridge and food for young children once a day (usually in the morning) and storing it in a flask for use throughout the day. This increases the chance of growth of harmful microorganisms.
- Mothers, as the primary caregivers, reported following a child's appetite as a guide to how much food to give.
- The diets of young children as described by mothers and grandmothers lack variety. Young children generally eat the same foods as the rest of the family, with little modification.
- Grandmothers and men have inadequate knowledge of the recommended ways of feeding young children, and their beliefs are often inconsistent with recommended practices. This is evidenced, for example, by the belief that an infant's frequent crying is indicative of hunger and complementary foods are introduced too early.

Maternal nutrition and infant and young child feeding

- The diets of pregnant and breastfeeding mothers do not differ much from those of other women in the community, and they are largely deficient in animal protein and micronutrients. In both provinces, newly delivered mothers receive special diets and support only for the first few weeks postpartum before resuming the usual diet.
- Micronutrient supplementation of women during pregnancy and lactation as recommended by the Ministry of Public Health and Sanitation (MOPHS) is only partially implemented. Supplementation with ferrous sulfate is irregular due to inadequate supplies, while vitamin A supplementation for postpartum mothers is rare. Compliance is also poor, as some mothers do not take the iron and folate supplements even when available. In combination with the poor diets of lactating women, this predisposes them to malnutrition and inadequate micronutrients in breastmilk.

- While there is general acknowledgment that the mother's diet during pregnancy and lactation is important, little is done at the household level to ensure that mothers eat a good diet. It emerged from discussions held with men, women, and grandmothers that maternal nutrition is not a priority.
- Mothers' heavy workloads, which include household chores, childcare, farm work, and fetching water and firewood, remains high throughout pregnancy and lactation. This makes it difficult for women to meet their energy needs and build the necessary stores for effective lactation. Both fathers and grandmothers have a negative attitude toward the recommendation for reduced workload for women during these periods.

Role of fathers in maternal, infant, and young child feeding

- While childcare is regarded as a shared responsibility, the roles of men and women are distinctly different. Men are not involved in direct care and nurturing of children younger than 2 years in the community because culturally, it is considered women's work. On issues of childcare and feeding, men listen to and believe the counsel of their mothers (grandmothers) more than their wives because they believe the grandmothers are more experienced.
- The culturally defined roles of fathers entail providing for the family (food, clothing, shelter, money for health care, security) and the moral upbringing of children as disciplinarians in the home. A community leader in Western Province observed that men are not clear about their roles/responsibilities in infant and young child feeding beyond providing food.
- Despite the cultural limitations imposed on them in terms of their role in childcare, men are interested in obtaining information that can enable them to support good health and nutrition of young children.
- Men generally do not accompany women to the clinic. They do not see the need to do so because they are busy and because they are not the ones being examined. Few men follow up to find out the outcome of a visit to the clinic by their wife. Some men however encourage mothers to attend antenatal clinics and ensure that recommendations given related to the health of young children, such as immunizations, are followed.
- In both provinces, there are no specific forums at which men receive advice on childcare. Most initiatives that address maternal and child health at the community level involve women as primary caregivers. Such initiatives focus on women mostly through existing community structures such as women's groups.
- Sources of information for men on childcare include occasional flyers brought home by women from clinics, radio programs on health, newspapers/magazines, and sometimes church. Trusted sources of information for men include health officers like nurses and trained community health workers, school teachers, community health extensions workers, and community health promoters.
- Men desire to learn from trained experts. They listen more to people who are perceived as knowledgeable or professionals on issues of health and nutrition. It is noteworthy that just like other members of the community, men hold certain myths about feeding young children that need to be addressed through awareness creation.

- The majority of fathers do not believe that exclusive breastfeeding for the first six months is feasible. Men feel that women's multiple responsibilities (most of which entail separation from their infants) and the types of foods that they eat will not enable them to breastfeed exclusively.
- Fathers regard provision of adequate food for breastfeeding mothers as their role. Men agreed that to breastfeed successfully, mothers require a well-balanced diet, to produce breastmilk and to have enough energy to do her work. Lack of money was cited as a common challenge to providing an adequate diet for women.

Role of grandmothers in maternal, infant, and young child feeding

- Grandmothers are highly esteemed by communities as knowledgeable and experienced in childcare. They are powerful decision-makers and influencers of feeding practices for young children in the family. While mothers are the primary caregivers involved in making decisions on child feeding, grandmothers also play a substantive role in caregiving, especially in the feeding of young children.
- In addition to running their own homes, grandmothers are actively involved in financial and in-kind support of their sons' families. Many young people start families without a reliable source of income and heavily rely on their parents for livelihood support.
- Findings of the assessment showed that grandmothers in both provinces are frontline caregivers of young children, and powerful influencers of decisions related to their general care and feeding. They are the main alternative caregiver in the mother's absence. Grandmothers provide general oversight and care for infants and young children in the community, ensuring they are safe, bathed, and fed.
- Grandmothers are central in decision-making on issues related to food preparation and feeding young children, health care (recognizing signs of illness and advising on the course of action when children are sick), family livelihood (food production), and spiritual nurturing.
- They provide advisory support to daughters-in-law on running the household and on family life in general.
- Many grandmothers appear to have inadequate knowledge on recommended complementary feeding practices, especially related to quantity, dietary diversity, and timing of the introduction of complementary foods. Grandmothers in both provinces believe that breastmilk alone is not adequate to satisfy a baby for the first six months and fuel early supplementation of breastmilk with animal milk, porridge, and water. And grandmothers in Eastern Province advise that meat should not be given to children before 2 years of age.

Recommendations

Complementary feeding practices

- Interventions to improve complementary feeding practices for young children in the target areas should build on the positive behaviors and practices around the feeding of infants and young children identified through this assessment.

- Given the powerful role of grandmothers in the care and feeding of young children in both provinces, it is critical to engage them in interventions to improve complementary feeding and is likely an important method to change belief systems around the feeding of young children in the target communities. Engaging grandmothers and providing them with correct information holds great potential for helping to transform community belief systems around the feeding of young children.
- Cultural beliefs and myths documented from this assessment that promote inappropriate or harmful infant and young child feeding practices should be addressed through dialogue groups of grandmothers and men.
- To improve complementary feeding, focus should be on key gaps identified in practices and behaviors, such as early introduction of complementary foods, low energy and nutrient content of diets consumed by infants and young children, safety and hygiene, inadequate quantities, low frequency of feeding, and force feeding of young children in Western Province.
- Efforts to improve the feeding of young children at the household and community levels should emphasize the use of local foods. While traditional vegetables are widely used in Western Province, they are rarely used in children's dishes. Grandmother groups can be provided with recipes and showed how to prepare complementary foods. They can be encouraged to exhibit nutritious complementary foods during family bazaars to promote community uptake of good practices.
- Initial training of men and grandmothers will need to cover recommendations for infant and young child feeding. The main reasons given by grandmothers for early supplementation include baby crying, inadequate milk production, and frequent separation. These issues should be the focus of messages discussed with grandmothers.
- One of the strategies that can be encouraged and strengthened to increase male involvement in support of improved complementary feeding is mobilization of men to buy special local foods for young children. This strategy should be supplemented with dissemination of information on the relationship between feeding and the health of infants and young children, nutritious foods for young children, and the importance of hygiene during food preparation and feeding.

Maternal nutrition

- The importance of a good diet for mothers during pregnancy and lactation needs to be emphasized at the household and community levels, as it currently is not a priority in either province. Information and dialogue on specific ways that men and grandmothers can support women to eat nutritious foods will be critical.
- Interventions targeting men and grandmothers need to incorporate and build on the community's positive practices related to maternal diets identified through this assessment. A starting point could be a review and guided dialogue on specific foods identified by the community during the assessment as good for increasing breastmilk production when consumed by mothers.

- Men should be encouraged to provide nutritious foods for their wives during pregnancy and lactation. This would be feasible since it is in line with their culturally defined role of providing for the family. A major motivation for men would be a rationalized explanation of the role of good maternal nutrition and health consequences to the baby and mother of poor diet during these times.
- Both fathers and grandmothers have a negative view on the recommendation to women to reduce work during the last trimester. In addition to advocacy for improved diets for women, it will be important to dialogue on this issue and generate consensus on specific ways in which men and other family members can relieve women of onerous labor during the last trimester and after delivery.
- Micronutrient supplementation for women during pregnancy and lactation is critical, given the generally poor diets consumed against heightened requirements. Grandmothers and men need to understand this and support women to adhere to taking iron and folate supplements. Mothers also need to understand the importance of vitamin A for postpartum women. Health facilities need to be giving these nutrients routinely as per national MOPHS guidelines.
- Grandmother groups and networks, once established, should be encouraged to visit newly delivered mothers in the community and encourage support for proper breastfeeding practices, rest, and a good maternal diet. This would serve to reinforce messages given at health facilities, while gifts of local nutritious foods to the mother would be a practical way of providing support.

Engagement of men

- Men are typically preoccupied during the day with earning their livelihoods, mostly through casual labor. Building consensus on appropriate meeting times and frequency of meetings with them will be important to ensure their concerns about busy working days are addressed. This may mean planning for meetings during non-working hours.
- Based on the assertion that came from the FGDs that “men listen to men,” interventions for engagement of men should seek to engage well-trained male facilitators—fathers of young children, who could be role models to enlist the respect of other men.
- PATH’s programmatic experience working with men in Western Province shows that sustaining men’s interest in group-based activities for more than a few months is a challenge. A key recommendation from discussions held with men is that a practical component alongside dialogue on maternal, infant, and young child feeding will serve to enhance and sustain men’s interest in supporting infant feeding issues. Men who participated in this study should be encouraged to come up with activities of interest.
- Since men expressed interest in and eagerness to learn more and play a greater role in maternal and child nutrition, engaging men in interventions that are aligned to their culturally defined role as providers in the home holds potential for success. This would entail focusing on the provision of more nutritious foods for the women and children in their families.
- While men feel strongly that accompanying women to the clinic is not their business, it may be worthwhile to encourage them to give this a chance, as a way of strengthening support for the good health of their wives and children. This will expose them to health and nutrition

interventions and has the potential to increase adherence to recommended feeding practices in the family. To achieve this, IYCN should encourage health facilities to implement male-friendly services.

- Male engagement on issues of young child nutrition will be enhanced by engaging the local administration to accord public recognition to the initiative. This will further serve to publicly affirm men involved in interventions to improve young child health and nutrition, which traditionally is regarded as a women's issue.
- Approaches and concerns raised by men through this assessment should guide the design and implementation of interventions for engagement of men. These include planning for brief focused meetings, scheduling meetings after work, use of take-home materials such as brochures, and using experts or well-trained resource people to train men.
- Dialogue groups that have been used by PATH in Western Province are recommended as an entry point for other interventions involving men. These will provide a consultative forum that allows men to learn as they contribute ideas and rationalize new information.
- Men involved in this study should be encouraged to be agents of change in the community among their peers for increased male involvement in promotion of good child nutrition. This can be achieved through periodic family bazaars (community meetings).

Engagement of grandmothers

- As custodians of cultural knowledge, it will be important to adopt a consultative approach in working with grandmothers and seek to build on some of the positive practices of feeding young children identified through this assessment.
- Grandmothers traditionally communicate through songs and dances, which presents an opportunity to transmit new knowledge and ideas on young child feeding to the rest of the community. Individual groups with their mentors should be encouraged to creatively compose songs, poems, and dances in praise of proper feeding as a means to healthy, well-nourished children. These innovations should be celebrated during the biannual family bazaars.
- Organized visits by grandmothers to homes with newborn babies to support and give key messages on appropriate feeding would serve to raise the profile of dialogue around infant feeding issues and begin to challenge widespread malpractices such as early introduction of diverse foods.
- Family bazaars will provide a forum for various groups to showcase their innovative strategies to encourage optimal feeding practices. Bazaars can also be used as an opportunity to exhibit various ways of preparing nutritious complementary foods using locally available foods.
- In addition to supporting their daughters or daughters-in-law, grandmothers in support groups should be encouraged to share new knowledge learned with their peers and other women in the community. Social forums in the community such as women's groups and churches would be useful entry points in promotion of proper feeding practices for young children.

- Recognition and support of grandmother support groups by the local administration will boost their morale and legitimize their efforts in the eyes of the community. This is especially important because grandmothers are often regarded as obstacles to uptake of critical health messages.
- Grandmothers should be encouraged to accompany mothers to the clinic whenever possible. This will provide an opportunity for them to engage with a respected source of information on child feeding.
- While promotion of optimal feeding practices of young children is key, groups of grandmothers should also be encouraged to propose other activities that could enhance group cohesion and sustainability.
- Ongoing support for group mentors by community health workers and community health extension workers will facilitate linkage of these community-based activities with health facilities and allow for monitoring of progress.

Introduction

The United States Agency for International Development's Infant & Young Child Nutrition (IYCN) Project and PATH's prevention of mother-to-child transmission of HIV (PMTCT) team conducted an infant feeding assessment in Eastern and Western Provinces, Kenya, in 2007–08 with Public Health Evaluation (PHE) funds from the United States President's Emergency Plan for AIDS Relief. The evaluation assessed the infant feeding practices of HIV-positive mothers and the infant feeding counseling they received, specifically focusing on the transition period from breastfeeding to replacement feeding.¹ The study made recommendations based on the findings, which include increasing counseling and messages on appropriate complementary feeding for the breastfed and non-breastfed child, and engaging men and grandmothers to support optimal infant and young child feeding practices. Based on these recommendations, the IYCN Project will use follow-on PHE funds to evaluate interventions in Western Kenya to improve maternal, infant, and young child nutrition practices by increasing grandmothers' and fathers' support of optimal practices. This will be achieved through the integration of infant feeding activities into ongoing health and nutrition initiatives implemented at the community level. It is envisaged that this will maximize resources and promote sustainability of these initiatives. For this activity, IYCN will work closely with the AIDS, Population and Health Integrated Assistance Plus (APHIAplus) program in Western Province, a project following APHIA II Western (2006-2010), where PATH is the lead implementing partner.

The assessment aimed to evaluate a community-based approach to improve practices around maternal, infant, and young child nutrition by engaging grandmothers and men to support these optimal practices during pregnancy, lactation, and complementary feeding. Working with APHIAplus in Western Province, IYCN will train community health workers to work with grandmothers and men to support both HIV-positive and HIV-negative mothers to improve maternal dietary and breastfeeding and complementary feeding practices.

To determine the effectiveness of engagement of men and grandmothers at the household and community levels to improve and support maternal dietary intake and infant and young child feeding practices in Kenya, the assessment was conducted in four phases:

1. Formative assessment to explore current knowledge, attitudes, and practices related to maternal dietary and breastfeeding and complementary feeding practices, and the roles of fathers and grandmothers in maternal, infant, and young child nutrition in order to design a targeted, culturally appropriate evaluation and interventions.
2. Baseline assessment.
3. Interventions to strengthen male and grandmother engagement in maternal dietary and infant and young child feeding practices.
4. Endline assessment.

The purpose of the formative assessment was to document infant and young child feeding and maternal dietary practices and the attitudes and beliefs of men and grandmothers on infant feeding, and to generate information for use in the design of culturally relevant interventions for engagement of men and grandmothers to support and improve maternal, infant, and young child

feeding in the intervention sites. Although a substantial amount of information on infant and young child feeding practices in Kenya is available, a review of the literature in 2008 identified considerable gaps in detailed information on complementary feeding and maternal dietary practices in the target provinces.² IYCN therefore conducted the formative assessment in the proposed PHE sites in Eastern and Western Provinces to determine key maternal dietary intake, breastfeeding, and complementary feeding practices as well as locally available services and support for nutrition in each area. The findings of the formative assessment will be used to determine the roles and activities of grandmothers and fathers to support optimal maternal dietary intake and infant and young child feeding practices. The results will also provide important background information describing the study areas.

About the Infant & Young Child Nutrition Project

The IYCN Project is the United States Agency for International Development's flagship project on infant and young child nutrition. Begun in 2006, the five-year project aims to improve nutrition for mothers, infants, and young children, and prevent the transmission of HIV to infants and children. IYCN builds on 25 years of the United States Agency for International Development leadership in maternal, infant, and young child nutrition. Our focus is on proven interventions that are effective during pregnancy through the first two years of life.

Background

Infant and young child feeding

Infant and young child feeding practices directly affect the nutritional status of children younger than 2 years of age and ultimately impact child survival. Exclusive breastfeeding from birth to 6 months has been shown to be the most effective preventive intervention for ensuring child survival and is estimated to save 13 percent of all deaths in children younger than 5. Appropriate complementary feeding could prevent an additional 6 percent of deaths in this age group.³ Although exclusive breastfeeding provides the best start to life, an infant requires more nutrients than are generally available in breastmilk alone after six months. Any non-breastmilk foods or nutritive liquids that are given to young children during this period (in addition to breastmilk) are defined as complementary foods, and complementary feeding is the process of introducing these foods. This transitional period is very important in every child's life, for health, growth, and psychosocial development. The 2008–09 Kenya Demographic and Health Survey (KDHS) showed that rates of stunting peak between 6 and 24 months—the complementary feeding period.⁴ Stunting results in negative health and developmental consequences that persist throughout life.

In resource-poor settings, childhood malnutrition remains a major health problem. Approximately one-third of children less than 5 years in developing countries have stunted growth (<-2 standard deviation with respect to reference data),⁵ and an even larger proportion are deficient in one or more micronutrients. Some of this may be due to other causes, such as slow fetal growth caused in large part by maternal undernutrition before and during pregnancy and maternal infectious diseases. However, inadequate quantity and quality of complementary foods, poor child feeding practices, and high rates of infections also contribute to poor health and growth in these important years. Too often, complementary foods are introduced too soon or too late. The frequency and amounts of food offered may be less than required for normal child growth, or their consistency or energy density may be inappropriate in relation to the child's needs. Conversely, too much poor complementary food could displace the more nutritive breastmilk in the child's diet. Other factors, such as the pattern of feeding (e.g., breastfeeding followed with complementary foods or vice versa), may effect breastmilk intake. In addition, the nutrient content of these foods may be inadequate or the absorption could be impaired by other components in the food. Storage safety is important as well. In addition, responsive feeding, maternal encouragement to eat, and other psychosocial aspects of care during feeding are important for ensuring adequate food and nutrient intake of the child. The necessary behaviors and foods change rapidly with the child's age and breastmilk intake. Caregivers must understand this and be responsive to the child's expressed needs, while ensuring adequate intake. Development of successful interventions to improve child feeding practices is necessary.^{1, 2}

Improving infant and young child feeding practices in children 0–23 months of age is critical to improved nutrition, health, and development of children. With improved nutritional status, the risk of mortality among children younger than 5 years can be reduced. Improving complementary feeding practices among Kenyan children aged 6–23 months could contribute significantly to achieving the Millennium Development Goal for child survival and the Kenyan target of reducing PMTCT and death among HIV-exposed children. A combination of complex

factors influence infant feeding decisions, including knowledge, attitudes, traditions, societal norms, and support from partners, family members, and the wider community.^{6,7} In order to improve these practices, it is essential that mothers, caregivers, and family members have accurate information, as well as support to overcome barriers. When mothers receive proper counseling and ongoing social support, evidence shows that there is improved uptake of optimal feeding practices.⁸

In Kenya, poor breastfeeding and complementary feeding practices, coupled with high rates of childhood diseases, result in high rates of malnutrition and mortality in the first two years of life.⁹ Results of the 2008–09 KDHS revealed persistently high levels of malnutrition with stunting peaking at 46 percent among children in the second year of life. Although 99 percent of children younger than 6 months were breastfed in Kenya, according to the KDHS, the proportion of breastfed infants declined with age: 60 percent of infants 4 to 5 months received other foods, and only 13 percent of infants breastfed exclusively for the first six months.⁴

Within the general population in Kenya, complementary feeding practices are largely suboptimal. In a majority of cases, complementary foods are introduced much earlier than the recommended 6 months of age. Diets of young children often lack variety, and frequency of feeding is inadequate to meet energy needs. For HIV-positive mothers, this is a particularly challenging period, and HIV-exposed infants are especially at risk. This is further complicated by the fact that interventions to reduce mother-to-child transmission through promotion of safer infant feeding practices are weak in maternal and child health programs in Kenya. As a result, mothers sometimes receive incorrect and conflicting messages and lack adequate support within their households, communities, and health care facilities to carry out optimal feeding practices.^{10, 11}

While scientific understanding of how to maximize HIV-free survival has improved significantly, this depth of understanding has not trickled down to health care workers and families. As new data have emerged, the World Health Organization (WHO) has updated its recommendations for infant and young child feeding within the context of HIV three times in the last decade. Evidence suggests that rather than improving counseling and infant and young child feeding practices, these changing recommendations have confused health workers and led to inconsistent and often dangerous messages being given to mothers.⁸ While some correct messages have been disseminated through health facilities, inappropriate infant and young child feeding practices are still widespread in Kenya. Findings from the above studies^{6–8} suggest that engagement of “key influencers” other than facility-based health workers is critical for promoting adoption of optimal infant and young child feeding practices. For example, Nduati et al.⁶ found that infant and young child feeding practices were influenced by household factors, social networks, and modern and traditional health institutions. Community health workers were found to be the most accessible and widely consulted advisors. Mothers identified mothers-in-law (grandmothers) and male partners (fathers) as important household-level influencers. Israel-Ballard et al. recommended that in order to improve optimal feeding for HIV-exposed infants, among other issues, there needs to be improved male involvement in the infant feeding decision-making process, provision of physical and psychosocial support for mothers during the weaning period, and increased availability of support groups to promote safe infant feeding.¹¹

The government of Kenya has adopted the 2010 WHO revised guidelines on HIV and infant feeding.¹² As the new guidelines are rolled out in Kenya, all mothers, regardless of HIV status, will be given the same infant feeding recommendations for the first 12 months: exclusive breastfeeding for six months, followed by continued breastfeeding with appropriate complementary feeding. Innovative approaches, especially at the household and community levels, are needed to ensure that mothers, caregivers, family members, and health workers understand these recommendations and are empowered to support optimal infant and young child feeding practices. The Kenyan government is committed to promoting, protecting, and supporting optimal infant and young child feeding practices, which have significant health, social, and economic benefits. Efforts to reverse the poor trends in infant feeding recently led the government to develop the *National Strategy on Infant and Young Child Feeding*.¹³ The four-year strategy provides a framework for comprehensive and coordinated interventions to promote the uptake of optimal infant and young child feeding practices by the government and partners in Kenya. Further, various partners are supporting the government to build the capacity of community health workers to promote uptake of appropriate infant and young child feeding practices through the Ministry of Public Health and Sanitation's (MOPHS) community health strategy.

IYCN and PATH have implemented activities in Kenya to support the priority focus areas outlined in the national strategy and the Kenyan policy guidelines on infant feeding.¹⁴ In 2009, IYCN and the APHIA II Eastern and Western programs conducted pilot activities to strengthen male and grandmother engagement in maternal nutrition and infant and young child feeding. The formative assessment built on findings from previous studies that described (1) infant feeding practices and gaps in information,¹⁵ (2) infant and young child feeding beliefs and attitudes and key influencers to infant and young child feeding practices,⁶ and (3) infant feeding practices of HIV-positive mothers during the transition from breastfeeding to replacement feeding at six months of age.¹¹

Further, a series of assessments and surveys on infant and young child feeding in Kenya^{7, 12–14, 16} has clearly demonstrated that success in improving infant feeding practices depends on engaging key influencers at the household and community levels, including grandmothers and men. Despite these findings, there are currently no initiatives in the country that systematically engage grandmothers and men in efforts to improve maternal, infant, and young child nutrition and feeding practices. In Kenya, most community programs seeking to improve the well-being of women and children target young mothers and their children. Grandmothers and men are very often perceived as obstacles to change. However, evidence from other countries has shown that engagement of grandmothers¹⁷ and men^{18, 19} can significantly improve infant and young child feeding practices. While there is consensus by the government and partners on the urgent need to engage these two groups of influencers in community interventions to improve infant and young child feeding and maternal nutrition, the country lacks a model of how best to engage them. With follow-on PHE funds, IYCN will evaluate a strategy to engage grandmothers and men in improving maternal nutrition and infant and young child feeding practices in two provinces. It is anticipated that this will make an important contribution toward building a model for effective community initiatives to improve maternal, infant, and young child nutrition and feeding practices in Kenya that can be replicated in other parts of the country and the region, particularly in areas of high HIV prevalence.

Maternal nutrition

A woman's nutritional status has important implications for her health as well as the health of her children. Female malnutrition in sub-Saharan Africa is responsible for a broad range of short- and long-term negative consequences. Undernutrition diminishes women's potential contribution to their family, community, and nation. It also reduces productivity, decreases income-earning capacity, and increases health care costs. Child survival and development is influenced to a large extent by the caring capacity of the mother, which can be diminished by her poor health and nutritional status. Intergenerational links drive the cycle of malnutrition: small maternal size leads to low birth weight and subsequent growth failure in children, leading to small adult women. The periods before and between pregnancies therefore provide an opportunity for women of reproductive age to prepare for pregnancy by consuming an adequate balanced diet, including supplements and fortified foods where available, and by achieving a desirable weight gain.²⁰ The dimension of the problem of female malnutrition in Africa is evident in the following statistics on maternal health and nutrition.

Overall, an estimated 42 percent of women aged 15–49 years and 51 percent of pregnant women in sub-Saharan Africa are anemic.²¹ Severe anemia is an associated cause in up to 50 percent of maternal deaths. Sub-Saharan Africa has an estimated 18 percent of the world's births but 47 percent of its maternal deaths.²² In Kenya, the maternal mortality rate remains alarmingly high, at 488/100,000 live births, rising to 1,200/100,000 in North Eastern Province.⁴ Sixty to seventy percent of maternal deaths in the country result from causes that are predictable, treatable, and preventable, including anemia, vitamin A deficiency, malnutrition, malaria, tuberculosis, HIV/AIDS, sexually transmitted infections, and abortion.⁴

Pregnant women in Africa, on average, gain half as much weight as pregnant women in industrialized countries. The average pregnancy weight gain among Kenyan women is 6–7 kg, which is approximately half to two-thirds of the desirable weight gain of 10–12 kg.^C Studies of maternal weight gain during pregnancy have shown an increased risk of intrauterine growth retardation in mothers with low pregnancy weight gain.^D Intrauterine growth retardation is responsible for two-thirds of low birth weight in developing countries.^E Women's nutritional status is also affected by their physical work and energy expenditure. In developing countries, patterns of energy expenditure during pregnancy are of particular concern, since women generally consume diets lower in energy and have lower pre-pregnancy weights than women in developed countries.

Antenatal and postnatal care offer an opportunity to inform women of their nutritional requirements, provide micronutrient supplements, and identify risk factors such as malaria and anemia. Many women in low-income settings, however, either lack access to health services or do not seek prenatal care. WHO recommends that a woman without complications should have at least four antenatal care visits, the first of which should take place within the first trimester. In Kenya, there has been a decline in the proportion of women who attend four or more antenatal visits, from 52 percent in 2003 to 47 percent in 2008–09, with only 15 percent of women obtaining antenatal care in the first trimester of pregnancy.⁴ While some improvement has been noted in vitamin A supplementation for postpartum women, overall, less than half (46 percent) of women received a vitamin A dose postpartum.⁴ Intake of iron tablets during pregnancy is also low. However a comparison with 2003 KDHS data indicated that the proportion of women who

took iron supplements increased from 41 percent in 2003 to 60 percent in 2008–09.⁴ Although this is a sizeable increase, almost all of the women who took iron supplements took them for less than 60 days during their pregnancy. Less than one in five women reported having taken deworming medication during their most recent pregnancy.⁴

Several maternal nutrition interventions have been instituted through the health sector, particularly the Division of Reproductive Health, and uptake of these services has increased since 2003. The formative assessment proposed to address maternal nutrition through engaging men to provide an animal protein to the mother at least once a week. This is in line with the notion that women may be more receptive to messages focusing on eating specific foods, giving birth to healthy babies, and feeling better during pregnancy than messages focusing on eating more food.²³

Grandmother-inclusive approach

Family support to the mother, in the form of help with childcare and household work, emotional support, and informational support, is an important resource in facilitating improved childcare by mothers. In Africa, older women or grandmothers traditionally have considerable influence on decisions related to maternal and child health at the household level.^{16,24} However, maternal and child health programs invariably focus on women of reproductive age and rarely involve their culturally designated advisors—senior women (or grandmothers).²⁵ While studies have revealed certain biases against grandmothers—for example, they are a bad influence on children and families, illiterate and therefore unintelligent, or too old to learn and change²⁶—and some of their practices are harmful, overall, grandmothers’ experience, motivation, and commitment to caring for women and children are positive. In addition, the majority of grandmothers, including illiterate ones, are capable of learning new things when the pedagogical approach used is based on respect and dialogue. Grandmothers were found to be open to combining “new” practices with “old” ones, even when this meant abandoning certain traditions. Program evaluations also have shown positive and quantifiable changes in grandmothers’ own practices and in their advice to younger women and men alike.¹⁷

Over the past ten years, grandmother-inclusive and intergenerational approaches have been developed by the Grandmother Project and implemented in various countries, including Djibouti, Mali, Mauritania, and Senegal. The programs have dealt with various aspects of women’s and children’s health, such as nutrition, newborn care, and home care for sick children. The Grandmother Project has developed an approach in which multigenerational groups analyze community problems and identify collective actions that can lead to positive and sustainable changes within their own cultural systems. In Mali and Senegal, the Project collaborated with Helen Keller International and the Christian Children’s Fund to guide the development of grandmother-inclusive non-formal health education activities. In both cases, these led to improvements in the advice older women gave to pregnant women regarding diet and rest during pregnancy and infant feeding practices. In Mauritania, in both rural and periurban areas, the Grandmother Project, in collaboration with World Vision, trained informal grandmother leaders to promote positive nutrition and health practices in their communities.²⁷ These programs have contributed to positive and sustainable changes in nutrition, health, and education practices, while at the same time, strengthening the cultural identities and social cohesion of families and communities.²⁸

Male engagement approach

From a familial and sociocultural context, infant and young child feeding is embedded within traditional relationships in which both relatives and breadwinners have influence and even authority over options and modes of infant feeding. The demands of fatherhood are challenging, yet little guidance, few models, and little support is available to assist fathers to understand their role in infant and young child feeding and family nutrition. Thus, lack of partner support (meaning men as allies and resources) for women in the area of infant and young child nutrition is common. This includes the impact of men as individuals, as social gatekeepers, and as powerful family members who enforce cultural practices, often to the detriment of women's reproductive health.²⁹ Men behaving irresponsibly or unsupportively may be a source of chronic stress for women, a condition known to negatively affect the course and outcome of a woman's pregnancy. If men lack information, they may perpetuate harmful local myths about health practices of women during pregnancy.

Men generally do not participate in antenatal or postnatal care, and women become vulnerable to pressure from in-laws to follow traditional practices that are often against health workers' medical advice. Because men mediate women's access to economic resources in a large part of the developing world, women's nutritional status, especially during pregnancy, may depend heavily on partners and male relatives.²⁹ In many patriarchal societies, traditional power differentials prohibit easy or complete HIV disclosure, with HIV status remaining hidden from most partners and relatives. This context of secrecy means that the traditional advice and authority, which the mothers feel they dare not disregard, is often blind to the mother's HIV status and her infant's HIV exposure and survival needs.³⁰

The male involvement approach envisions men as agents of positive change. It acknowledges the fundamental role men play in supporting and transforming the social roles that constrain maternal and child health and rights. It seeks to move toward gender equity by shaping the way services are delivered. This approach serves the interests of men as well as women by increasing men's choices, their possibilities for learning and development, and the survival and well-being of family members.³¹ Interventions that involve men as agents of positive change are relatively few in number, although the male engagement approach is timely, as research has indicated that men themselves, as well as their partners, would prefer that they play a more active role during pregnancy, delivery, and infant care, but that societal and health system norms often do not support this. There has been recognition that to improve maternal, infant, and young child nutrition, health structures need to attend to and support fathers, because fathers play a critical role in providing instrumental and emotional support to mothers and children. Engaging fathers is also important because of the significance of both the father-infant relationship and the couple relationship to overall individual and family well-being.³²

Purpose and rationale of the formative assessment

The overall purpose of the formative assessment was to document infant and young child feeding and maternal dietary practices and fathers' and grandmothers' knowledge, attitudes, and practices related to maternal, infant, and young child nutrition in order to generate information for use in design of culturally relevant interventions for engagement of men and grandmothers to support and improve maternal, infant, and young child feeding in the intervention sites.

A substantial amount of information on infant and young child feeding practices in Kenya exists, derived from research conducted in the country since 2005. However, a review of the available literature identified considerable gaps in detailed information on complementary feeding and maternal dietary practices. IYCN therefore conducted the formative assessment in the potential PHE sites in Eastern and Western Provinces to determine key maternal dietary intake, breastfeeding, and complementary feeding practices, as well as beliefs and attitudes of men and grandmothers on maternal, infant, and young child nutrition and feeding. Locally available services and support for nutrition in each area were also assessed. The findings of the formative assessment will be used to determine the roles and activities of grandmothers and fathers to support optimal maternal dietary intake and infant and young child feeding practices in order to design appropriate interventions and targeted messages. The results will also provide important background information describing the study areas.

It is noteworthy that currently there are no initiatives in the country that systematically engage grandmothers and men in efforts to improve infant and young child feeding and maternal dietary practices. In Kenya, most community programs seeking to improve the well-being of women and children target young mothers and their children. Grandmothers are very often perceived as obstacles to change. While there is consensus by government and partners on the urgent need to engage men and grandmothers in community interventions to improve infant and young child feeding and maternal nutrition, the country lacks a model of how best to engage them. It is anticipated that this formative assessment will make an important contribution to building a model for effective community initiatives to improve infant and young child feeding and maternal dietary practices in Kenya that can be replicated in other parts of the country.

Objectives of the formative assessment

The objectives of the formative assessment were to:

1. Assess complementary feeding practices of children younger than 2 years and community beliefs that influence these.
2. Determine maternal dietary practices during pregnancy and lactation and household factors that influence these.
3. Establish the roles and responsibilities of men and grandmothers in the family and in maternal dietary and infant and young child feeding practices.
4. Determine cultural influencers of maternal, infant, and young child feeding.
5. Document available services and support for nutrition in the intervention areas.

Methodology

Overview

The assessment utilized a qualitative and participatory in-depth approach to gather information from community members and selected key informants on the diets of women, feeding practices of children younger than 2 years, and the roles of men and grandmothers in the family and community. It was built on initiatives started by the IYCN Project in 2009 in Eastern and Western Provinces, which included two workshops. IYCN and APHIA II Western staff facilitated a training workshop to sensitize men's group leaders in Western Province on male involvement in maternal nutrition and infant and young child feeding. A second workshop was conducted to sensitize APHIA II Eastern and PATH staff in Eastern Province on the grandmother approach and engagement of grandmothers in maternal nutrition and infant and young child feeding. The workshop in Eastern Province provided participants with orientation and preliminary practice in the conduct of a rapid assessment using focus group discussions (FGDs) and pile sorts. This laid the groundwork for the formative assessment on the community-based approach to male involvement and grandmother engagement.

Focus group discussions

Separate FGDs were held with grandmothers, mothers, and fathers of children younger than 2 years in two districts in Eastern and Western Provinces. A total of eight discussion groups were held in each province, conducted by three teams comprising one facilitator and two notetakers. Each FGD comprised between 10 and 12 members and was facilitated by trained focus group facilitators using structured guides. All FGDs involving fathers were facilitated by trained male facilitators. The discussions were conducted at community venues such as the grounds of local churches. Focus group participants were mobilized by community health workers supported by community health extension workers and APHIA II field facilitators in each district. The consultant Nutrition Technical Advisor (NTA) provided guidelines and criteria for mobilization of all focus group participants (men, women, and grandmothers). All FGDs were tape-recorded in addition to the extensive notes taken by the two notetakers in each session. Consent to record discussions and take pictures was obtained from group members prior to commencement of the FGDs. The three focus group teams were assigned to conduct and write out detailed notes for one FGD per day to ensure thorough work. The discussions typically lasted between one and two hours and were conducted in the local language, with the exception of some of the men's group discussions in Western Province, which were conducted using a mix of the local language, Kiswahili, and English, at the request of the participants.

Daily debriefing meetings were held with the FGD teams, and feedback on the quality of discussions and written notes was provided by the consultant and the Senior Research Assistant. Special emphasis was placed on the need to probe deeply into issues outlined in the discussion guides. One of the community mobilizers assisted with field logistics.

Data were collected from 16 FGDs in the two study sites, eight in each province:

- Two FGDs for fathers of children younger than 2 years.
- Two FGDs for mothers of children younger than 2 years.

- Two FGDs for grandmothers of children younger than 2 years.
- Two FGDs on maternal nutrition for mothers of children younger than 2 years.

Key informant in-depth interviews

A total of 28 in-depth interviews were conducted with selected key informants in the two provinces by the NTA and the Senior Research Assistant, assisted by two notetakers. Structured discussion guides were used. The interviews were flexible and open-ended and allowed for coverage of other relevant issues that arose.

Key informants interviewed at the district level included members of district health management teams (district medical officer of health, district public health officer, district nutrition officer, and district public health nurse). The home economics and gender officers in the Ministry of Agriculture who deal with issues of nutrition were also interviewed. Other key informants interviewed were community health extension workers, health facility in-charges of key health facilities serving the communities, community leaders (including administrative leaders), religious leaders, women's group leaders, and lead community health workers.

The in-depth key informant interviews provided information on nutrition services and relevant programs in the district and in the focus areas. Discussions also explored feasible and culturally relevant ways of engaging men and grandmothers in interventions to improve maternal dietary and infant and young child feeding practices in the communities.

Instrument design and consent

The NTA and IYCN Washington, DC, staff designed the formative assessment protocol and developed data collection instruments. These included FGD and in-depth interview guides. Discussion guides were developed for mothers and fathers of children younger than 2 years and grandmothers. Separate FGD guides were developed to assess infant and young child feeding issues and dietary practices of mothers during pregnancy and lactation. The tools were designed to gather in-depth information on the roles and responsibilities of mothers, men, and grandmothers in the home; cultural beliefs that influence maternal, infant, and young child feeding practices; and sources of information on feeding for mothers, fathers, and grandmothers.

In-depth interview tools were developed to guide the discussions with key informants (health facility and community leaders, religious leaders, etc.). The guides and formative assessment protocol were submitted to the PATH Research Determination Committee, which determined that the formative assessment was not research and thus exempt from internal review board ethical review.

Study areas

Two areas in each province were selected consultatively with APHIA II and the MOPHS in each province. Selection was based on the presence of (1) a community health unit and (2) APHIA II implementation activities at the community level. The second area in each province was selected based on similarity to the first in terms of culture and socioeconomic and livelihood systems, and served as the control area during the evaluation. Both control areas were in neighboring districts, an adequate distance from each intervention area to prevent a spillover effect during the

intervention. In Western Province, the two study areas were Shivuli Sub-location (in Kakamega Central District) and Ivakhale Sub-location (the control area, in Kakamega East District). In Eastern Province, the assessment was conducted in Kithimu (in Embu East District) and Karurumo (the control area, in Embu West District).

Selection of focus group participants

The focus group participants were mothers, fathers, and grandmothers of children less than 2 years old. Participants were purposively selected in line with the objectives of the assessment. Focus group participants in each area were mobilized by community health workers with support from the APHIA II location lead community health workers. The NTA provided written criteria to guide this process. Mothers, fathers, and grandmothers meeting these criteria were subsequently invited for the FGDs. The local administration was informed of the assessment. FGDs were held in a variety of community venues, including church compounds, community halls, and the compound of one of the invited participants.

Preparation of training manuals

Training and participant manuals were developed by the NTA for use in facilitation of the training of the research assistants. The participant manual detailed issues covered in the training, and provided the assessment team with a hands-on reference guide on the concepts of and steps to conducting and recording FGDs. The content included background and purpose of the assessment, an overview of qualitative data collection techniques, skills and roles of FGD facilitators and notetakers, and the protocol for obtaining consent from participants and conducting and recording FGDs.

Recruitment and training of the assessment team

The assessment was conducted by a team comprised of APHIA II/IYCN focal points (field supervisors), the Senior Research Assistant, other research assistants, FGD facilitators, notetakers, key informant interview assistants, and the NTA, who provided overall leadership for the assessment. The FGD facilitators and field supervisors were sourced by the APHIA II/IYCN focal points using guidelines and criteria developed by the NTA. People expressing interest were shortlisted and interviewed (by the NTA and IYCN focal points), and selection was carried out. The focus group facilitators and notetakers were university graduates with prior experience in facilitation and notetaking. A participatory, adult-centered training approach was used throughout the training.

The team in each province was trained over a period of two days in qualitative data collection aspects, which included:

- Overview and purpose of the formative assessment.
- Overview of qualitative data collection methods.
- Obtaining group consent before conducting FGDs.
- Facilitation of FGDs (procedures and role of moderators).
- Recording proceedings of FGDs and key informant interviews.
- Detailed review of FGD guides.
- Role plays and feedback discussions.

During the training, in-house FGDs were conducted to practice facilitation and recording skills. This allowed the teams to internalize the discussion guides. Feedback provided by the observers (trainers and peers) served to instil confidence and provided an opportunity to highlight and discuss issues that needed further clarification before field pre-testing of the tools.

Pre-testing of tools

The in-house training was followed by one day of field training, undertaken to provide the assessment team and supervisors with practical experience and to facilitate pre-testing of the discussion guides prior to the actual assessment. The pre-tests were conducted in villages that were similar to but not selected for the assessment. In Western Province, the pre-test was conducted in Esishiru; in Eastern Province, it was conducted in Kavutuli.

The pre-tests were conducted with mothers, fathers, and grandmothers. The NTA, Senior Research Assistant, and IYCN focal points served as observers. This was followed by a plenary session to share experiences, address challenges encountered, and clarify issues that arose from the pre-testing experience. Vital aspects of FGD procedures were re-emphasized. The teams also practiced compiling notes from each of the pre-test sessions. These were reviewed and feedback was provided. The roles of facilitators, notetakers, and supervisors were reviewed and logistics for the actual assessment clarified before commencement of the data collection.

Implementation of the formative assessment

The assessment was conducted over a five-day period in each province. Each of the three FGD teams carried out one FGD per day and compiled the findings. All sessions were tape-recorded. Consent was sought from group participants prior to use of the tape recorder and the taking of photographs. Group moderators were instructed to enquire about language preference and use their discretion when addressing the focus group in two languages, the most important criteria being that all participants understood the questions clearly.

FGD sessions were followed by a daily debriefing session conducted by the NTA and Senior Research Assistant to obtain feedback, discuss any challenges, and plan the following day's activities. Key informant interviews were conducted by the NTA and Senior Research Assistant concurrently with the FGDs. Information collected was used to fill in gaps, obtain further detail, and confirm or capture diversity, to ultimately triangulate the data. In Western Province, the assessment was conducted during the period June 7–11, 2010, in Ivakhale and Shivuli; in Eastern Province, the assessment was conducted during the period July 19–23, 2010, in Kithimu and Karurumo.

The community mobilized logistical support for the FGDs, greeting late arrivals, politely turning away non-participants, and handling refreshments. This enabled the facilitator and notetakers to remain focused. Notetakers also provided the facilitator with a simple sketch to indicate the name and position of each participant for ease of reference. This was drafted as participants introduced themselves.

To provide support and ensure that high-quality information was collected, the APHIA II and IYCN focal points supervised field activities. The NTA and Senior Research Assistant also visited the sites at random to observe how discussions/interviews were being conducted. Daily

debriefing sessions with all teams enabled the NTA to monitor progress, review group output data, and provide guidance as necessary. Comprehensive feedback was given by each team member, ensuring that omissions were noted and areas that needed clarification were addressed.

Data processing and analysis

Qualitative data from all the FGDs and key informant in-depth interviews were transcribed from the tapes. The data were then consolidated into emerging themes from the FGDs and key informant interviews; this involved summarizing each set of ideas and views collected from the respondents along the main thematic lines, as instructed in the discussion guides. The major findings per issue investigated were then analyzed.

Findings

Cultural norms around roles and responsibilities of mothers, fathers, and grandmothers

The roles and responsibilities of mothers, fathers, and grandmothers were obtained from discussions held with groups of each, as well as leaders and other key informants in the community. Specific roles were derived from detailed descriptions of the daily activities of each group.

Roles and responsibilities of mothers

Mothers reported undertaking multiple roles and responsibilities in the home and community in both Eastern and Western Provinces. Generally, these covered areas of home management, childcare, income-generating activities, and community activities. With respect to household management, responsibilities of women included routine household chores such as cooking family meals, washing clothes, fetching water and firewood, and cleaning the compound. Childcare activities were feeding, bathing, and taking children to the well-baby clinic and hospital when ill. Income-generating activities consisted of planting, weeding, and harvesting, as well as engaging in casual work and selling farm produce. Community activities varied, but included occasional participation in group meetings such as church fellowships and savings and investment clubs (merry-go-rounds). Mothers indicated that they started the day early, rising at 6 am and not retiring until after 11 pm. As stated by one informant:



In a normal day, we wake up early, light the fire, sweep the house, prepare breakfast, as we prepare older children to go to school and cook porridge for the baby. After breakfast, one washes utensils and clothes, feed the baby, then go to the shamba [garden] or for casual work. FGD, Kithimu

Later, we have to fetch water, since most homes do not have piped water, and cook lunch and dinner. FGD, Kithimu

Women in Western Province stated that in addition to routine activities, women are expected to care for husbands by ensuring they have eaten and their clothes are washed. As stated by one informant:

Our day usually ends at around 10 pm, when we retire to bed while extremely exhausted and stressed. FGD, Ivakhale

Roles and responsibilities of fathers

The primary role of men in both Eastern and Western Provinces consists of work activities for income generation. In Eastern Province, this includes feeding domestic animals, milking, and casual work such as digging and construction. In Karurumo, men are involved in small-scale production of butternuts, tomatoes, kale, melons, and green maize, some of which is sold for cash.



Providing food for the family and delegating duties to members of the family were cited as key responsibilities of men in both Karurumo and Kithimu. Some reported that in the evening, they take a bath and go to the shopping center to meet other men. A few men catch up with the children's day at school, and check and help them with their assignments before dinner and retiring to bed. However, they also disclosed that many men in the area are drunkards who are irresponsible. Men give money to their wives, who buy what is needed for the family.

For me, I don't know how a baby is fed. My wife knows how to care for babies. FGD, Kithimu

This pattern appears to be true for men in Western Province as well. Men see themselves as providers for the family; central to this is their role in providing food. Other responsibilities of men in the home include providing money for transport when a family member is sick and purchase of prescribed drugs. They are socialized that their role involves "searching and bringing" food for the family on a daily basis; however, beyond that, men reiterated that they have no further input in the way the food is prepared, because *that is not our work as men*. As long as they bring food or money to purchase some food for the family, they feel they have done what is expected. They want to be appreciated, because as one man in Shivuli asserted, *I have fulfilled my role*.

Quality is not the issue. If I manage to bring home two ngolongolos of maize (4 kgs), the family has something to eat for the day. I have done my work. How the food is cooked and with what else it is mixed is the business of women in the family. FGD, Shivuli

Role of fathers in raising children

There was consensus that most men are not involved in direct care and nurturing of children younger than 2 years because culturally, that is the work of women. A few men may hold a child when the mother is busy or doing other chores. Overall, fathers were said to play a minimal role

in household chores or direct care of children. One father in Kithimu said, *Children that age [younger than 2 years] belong to women. If their mother is not there, they are left with their grandmother. In fact, if you pay a visit to homes in Kithimu, you will find that many children do not see their fathers during the day.* The men were however emphatic that bringing up children is demonstrated in different ways. One man captured these sentiments, saying:

I have to look for casual work each day so that I can pay school fees, buy clothes and food for the children. As a man, saying you have children is nothing. Bringing them up is what counts. FGD, Kithimu

In both Eastern and Western Provinces, it emerged that men's childcare mainly involves providing for their needs. To do this, they work and are away most of the day. Most fathers leave very early in the morning and come home late. FGD participants said that it is culturally unacceptable for men to become fully involved in childcare; it would be viewed as a sign of weakness. A man would be teased by other men that his wife had overpowered him and is "sitting on him." A man in an FGD in Shivuli illustrated this by candidly stating:

To tell the truth, I'm just a true African man. Issues to do with caring for small children are the mother's business. If the child needs to take porridge, I make sure the porridge is there. I don't even know what she'll add to it, but if she says she would like to add something, I provide her money so that she can buy. But issues of me taking care of children, feeding them, NO! I will be lying to say I am involved.

A community leader interviewed in Kithimu felt that the majority of men are not playing their role in raising children. This was attributed to excessive consumption of the local brew by many men in the area: *Kazi yao ni kaguru* (their main occupation is drinking). *Most of the homes are run by women. Probably less than 2 percent of fathers play an active role in care of families and children. The majority do not care what the babies eat or how they stay during the day.* Due to some training from community health workers, some changes have been noticed and men are now coming to ask for more information.

In Shivuli, in Western Province, other ways in which men are involved in care of the family and young children emerged, including:

- Ensuring young children are fully immunized.
- Ensuring that mothers attend the well-baby clinic. A father in an FGD in Shivuli observed: *We usually advise mothers to attend clinic. They know that they have to attend clinic before and after delivery.* Another male participant further emphasized this, saying, *I have a 2-year-old child. If I notice he is not doing well, like not gaining weight, then the next time, I have to go to the clinic and talk to the doctor.*

In Ivakhale, men were categorical that culturally, infant and young child care and nurturing is the domain of mothers. While they support women (for example, by providing money for health care when a child is sick), it emerged that men generally do not want to be bothered with childcare issues. One key informant in Ivakhale observed that one way for wives to show respect to a man in the home is by not bothering him with issues such as what to prepare for a meal and taking care of children once he has fulfilled his mandate of "bringing the food."

Some men however encourage mothers to give a variety of foods to young children. One man in an FGD in Ivakhale pointed out:

We also advise [mothers] on the foods to be given to young children. Young children should be given different foods, not just porridge only. They should be given other foods such as fruit and bean—foods that can build the baby's body. There are those who follow the advice and those who don't. If she doesn't, it is your responsibility as a man to ensure that she does.

In Western Province, mothers strongly lamented the lack of support by fathers in the multiple chores women have to perform in the home:

Men just come home to eat. Even when pregnant, they still want you to do everything for them. They do not care about clinic matters and do not provide money for women to attend clinic. If a woman is away from home, they take the children to the neighbors or grandmothers. They care less whether the children have eaten or not. They do not even care about the animals in the home. FGD, Shivuli

Participants in Ivakhale echoed these sentiments: *Mothers do everything from morning to evening without [men's] help.* However, not all fathers are irresponsible, as shown by the testimony of this mother:

My husband is very responsible. He brings food home. When busy cooking, he holds the baby til when I am done; sometimes when I am away, he cooks for the children and ensures they are on treatment when they are not well.

Roles and responsibilities of grandmothers

Besides running their own homes, many grandmothers were actively involved in supporting and providing for their sons' families. Typical activities of grandmothers in the home and community included milking, sweeping the house and compound, tethering goats, weeding, cutting grass for cows, preparing food, fetching water, collecting firewood, and washing clothes. Grandmothers also cared for children and attended community meetings.

Grandmothers often lamented that many of their sons married before they had a source of income to support their families. Many grandparents consequently bore the financial burden of providing for these families. Like the mothers, they had multiple responsibilities. As stated by a woman in Eastern Province: *We have so much work throughout the day. When night comes, it finds us still wandering.*



Women in Karurumo in Eastern Province said grandmothers help cook, babysit, and feed babies. Generally, mothers prepare the food (mostly porridge) for young children and leave it with the grandmothers. Grandmothers also cook for families when the mother is away. They advise mothers when they think there is a health or feeding problem with the child. Sometimes when the grandmother feels the mother is not feeding the baby properly, she will take and feed the baby and then bring the baby home.

Participants in Kithimu agreed that grandmothers are key caregivers. However, unlike in Karurumo, mothers in Kithimu said grandmothers take care of babies and young children both when the mothers are away and when they are at home. They assist in feeding, changing nappies, and cooking for the family, including the baby. One woman gave an example that when the whole family is out picking tea or in the *shamba*, and the grandmother is caring for the baby at home, she cooks for everyone. Another woman emphasized the support mothers receive from grandmothers, saying, *When I am held up with other duties in my house, I usually take the baby to her so that she may care for it as I attend to my duties.* They also cook for the family immediately after the woman gives birth and assist with household chores. As one woman remarked, *They bring you traditional porridge and gruel so that you regain the lost energy.*

Advice given by grandmothers as noted in the FGDs included:

- Take the baby outside on occasion to be in the sunlight.
- Avoid travel when the baby is very young (less than 1 month), to avoid meeting someone with an “evil eye.”
- Take the child to the hospital when sick.
- Attend the clinic during pregnancy.
- Advice on what to eat and not to eat during pregnancy; for example, urging women not to eat too much protein and to eat plenty of greens to “add blood.”
- Avoid carrying heavy loads.
- Do not always put socks on the baby; the legs will become weak if they are always in socks.
- Advice on identifying a traditional birth attendant to consult during pregnancy.
- Chew roasted bananas to mash them, then give them to the child (Eastern Province).

It was also reported that the advice of grandmothers and health workers sometimes conflicts: *When we tell [the health worker] salt/sugar water is good for a child with diarrhea, they ask where we got that information from.*

Emerging from the FGDs in Western Province was the perspective of mothers that grandmothers play a supportive role in the general running of their homes, and specifically in the care of young children. One mother captured this aptly: *Grandmothers generally give us guidance in everything we do in the home.* In Ivakhale, mothers referred to grandmothers as “general managers” of the home because of the central role they play in decision-making related to general family life, including what the family eats, oversight of the welfare of the daughter-in-law and children, and directing and advising on farming activities. As one woman described:

She ensures that the daughter-in-law is fine. If she is late in waking up, she finds out why, and if she is unwell, she organizes for her to go to hospital. She also keeps checking her clinic dates to remind her just in case she forgets. Grandmothers take care of the young grandchildren in the home, making sure that they have eaten and they are well-groomed. She coordinates and allocates duties on the farm, telling everyone what to do. Mother, Shivuli

In the words of mothers in Shivuli and Ivakhale, in Western Province, on the specific role and responsibilities of grandmothers in the care of children:

- *They help us a lot, especially when the baby is sick; they get us traditional herbs and if they fail to work, they assist us to go to the hospital.*
- *When we get busy or have somewhere to go, they remain with the children and take care of them until we have come back.*
- *They share with us the food that they cook, especially when it is something that the baby can eat. Those with cows that are milked provide milk for the baby.*
- *When you are not around, they cook for the children.*
- *They advise us to prepare the food in good hygienic conditions.*
- *They ensure the baby is kept clean always, and they are also very observant when it comes to the baby's health. They can tell when the baby is unwell, even when you as the mother didn't know.*

At the same time, some focus group participants in Shivuli pointed out that not all grandmothers are as helpful. Some mothers did not get along with the grandmothers, and some grandmothers would help only with feeding the children, and only when food had been prepared in advance.

Typical foods and meals consumed

Eastern Province

There is little variation in diets consumed in Kithimu and Karurumo. The main foods produced and consumed in both areas are maize, beans, bananas, potatoes, and green vegetables such as kale. Typically, families take three meals in a day comprising breakfast, lunch, and dinner. A family's feeding pattern was however said to depend on the "strength of the pocket" or a family's socioeconomic status. A key informant in Kithimu noted that well-off families eat up to five times in a day and consume "good food," such as *pishori* (basmati) rice, meat, bread, and Blue Band margarine.

Breakfast typically consists of tea with cassava, arrowroots, sweet potatoes, or leftover foods such as ugali (maize meal). If a family owns a cow or can afford to buy milk, they have milk tea or take black tea. In addition, breastfeeding mothers eat porridge for breakfast. Porridge is believed to increase milk production. Githeri (boiled salted maize and beans) is the food most commonly consumed for lunch in both Kithimu and Karurumo. Sometimes the beans and maize are fried with potatoes and tomatoes or mashed with potatoes and green vegetables. This is usually alternated with ugali or rice with vegetables or beans for dinner. Most men consume only breakfast and dinner because they are out working most of the day. Discussions held with men indicated that on some days, men consume foods outside the home, such as meat and tea with

snacks like mandazi (deep-fried dough). In addition to the main meals, young children receive porridge between meals.

While most foods consumed are grown, foods such as wheat flour, rice, meat, Blue Band margarine, bread, and sugar are purchased. Families without a cow also buy milk. Generally, families hardly eat together except on Sundays. During the rest of the week, everyone in the family eats at their own time. In Kithimu, mothers said that children are served first at all meals, followed by husbands, and then the women: *When a woman cooks dinner, she serves the family and goes to prepare for the next day. She eats late, sometimes when other family members have already slept.*

Men contend that breastfeeding mothers eat more often than they do because they are at home most of the time. However, they also admitted that when finances allow, many men eat outside the home because:

A man does not belong to one home. Some eat at home, and when they meet at the local shopping center, we talk over a cup of tea or porridge in the hotel. We also eat local sausages and drink beer. When money allows, we also buy meat. FGD, Karurumo

Participants in Kithimu pointed out that when farm produce is exhausted, buying food especially before the harvest is usually a challenge to many in the community. In Karurumo, fathers pointed out that children eat first and the mothers eat as they feed them, with men who come home late eating last. To illustrate this, one father in Karurumo explained:

When I am out working, my wife will cook at 6 pm for the children and feed them by 7 pm, when she also eats her dinner. When I reach home at 9 pm, I eat alone. Sometimes, the food is cold and I cannot light the fire to warm it, so most times, I prefer eating in the hotel.

Another example, given by a man in Kithimu: *There is smoke coming from the kitchen most the time, meaning there is something cooking. Sometimes, when women are boiling githeri, they throw in extras which they eat, like an egg or a banana.*

Fathers further explained that children most often eat alone because mothers are usually busy and cannot sit there unless the child needs to be spoon fed. *Mostly, she serves and children who are unable to eat by themselves are spoon fed by the others or they are fed forcefully by mothers.*

Western Province

In Ivakhale and Shivuli, breakfast comprises porridge or tea (black or white depending on availability of milk) and sweet potatoes. In most cases, children take porridge in between meals. Those who manage take either tea or porridge. Sometimes, women carry porridge when going to the farm, which they drink in mid-morning. Lunch is usually taken between 1 and 2 pm, and generally consists of sweet potatoes, yams, or cassava with porridge. Dinner, usually taken between 7:30 and 8:30 pm, generally consists of ugali (maize meal) with vegetables. Ugali is the staple food for the Luhya community and is consumed daily. It is considered a 'heavy food' (i.e., one that fills). Other foods that are consumed to a lesser extent and less frequently are rice and githeri (boiled salted maize and beans). Amount of food consumed was said to depend on daily

activities. For example, men who are cane cutters tend to eat larger amounts of ugali compared to those involved in gardening.

Most foods eaten are produced on the farm, like vegetables and Irish potatoes, sweet potatoes, and cassava. Other foods, such as fruits (avocados, apples, and mangoes) are purchased. Women buy most of the foods unless *kama kuna mzee mzuri atanunua* (one has an understanding husband, they might buy). Other sources of food cited were gifts from friends and neighbors: *If you have a good relationship with neighbors, sometimes when you are expectant and in need, they may give you food (potatoes or maize meal flour) to cook.* Women were unanimous that they look for and bring most of the food that is consumed by the family.

Findings showed that meal time arrangements vary from family to family. While some families eat together, the majority eat separately:

The way we eat varies. When at home with the children, we eat together. When my husband is at home, I separate his food and serve him alone, then I eat with the children separately. FGD, Ivakhale

In Shivuli, participants said mothers usually eat first, together with the younger children, while fathers eat separately, sometimes with the older siblings. It was underscored that most fathers prefer eating by themselves as the mother eats with the younger children. In other families, fathers come home late, after everyone else has eaten, so they end up eating alone:

Some men eat out at the hotels, but then when they come home, they still want a share of the little that the family has. Others always want to eat first. Even when he is not around and you have cooked, you must wait for him to come and eat first, then the rest of the family can eat later. FGD, Ivakhale

Dietary practices and care of pregnant and breastfeeding women

Dietary practices of pregnant women

In Eastern Province, the diet of pregnant mothers does not differ much from that of other women in the community. While some women eat differently, the majority continue to consume the same foods consumed by the rest of the family. Focus group participants in both Karurumo and Kithimu pointed out that food eaten during pregnancy depends on what is available to a household. Apart from the usual diet of githeri and ugali, other special foods that women sometimes eat when pregnant are liver and many green leafy vegetables. These are foods that are considered to be “blood builders” and are commonly recommended by health workers.

Asked what foods are best for pregnant women, participants in Kithimu mentioned eggs, meat, rice, mashed fried bananas, beans, and potatoes, accompanied by spinach, liver, potatoes, and fruits. In Karurumo, participants listed good foods as fruits, beans, vegetables, liver, ripe bananas, and meat, which they said constitute a balanced diet. Participants observed that the diet of pregnant women affects the health of the child: *If the woman does not eat well, the child will have nothing to feed on, thus the baby will be weak or underweight at birth.* Mothers however said that few pregnant women are able to eat these foods due to poverty.

In Kithimu, participants said that foods commonly consumed by breastfeeding mothers include mashed food (maize, beans, potatoes, bananas) and porridge. These are perceived to be foods that increase breastmilk production. Drinks commonly consumed include sour millet and sorghum porridge and milk tea. Bone soup is reportedly taken by the majority of mothers soon after delivery. Women make decisions on what foods to eat during pregnancy based on what is available. Most of what women eat is produced on the farm or purchased from the local market. Mothers generally buy meat and liver. The rest of the food is obtained from the farm, such as pawpaw, maize, and mangoes. Foods that pregnant women avoid eating include alcoholic drinks. Eggs are prohibited because it is thought that the baby will grow too big. Some avoid tea with sugar because of heartburn.

In Western Province, mothers were of the view that when a pregnant women does not eat well during pregnancy, it may lead to ill health for her. As mentioned by one participant in Shivuli:

Personally, I think when you don't eat well when pregnant, you get weak and become sickly; sometimes you lack blood. You may have given birth to four children in normally, then the fifth one you find that you are told you need to go for a caesarian section.

Mothers in Shivuli concurred that when a woman does not eat well, she will lack energy to push the baby during delivery and may cause death to the infant or herself. Other consequences of poor diet during pregnancy include weakness, lack of breastmilk, and increased probability of a cesarean section, especially from the fifth pregnancy on.

In Ivakhale, mothers concurred that pregnant women eat somewhat differently. For example, they eat small portions of food at short intervals because eating too much at once causes discomfort and the feeling of being extra tired. Food consumption patterns of pregnant women are influenced by appetite, cravings, and availability of food. Some women have a good appetite but cannot afford the foods they would like to eat:

Some pregnant mothers develop a big appetite, but their husbands do not provide for them with what they need to eat. Then you have no choice but to eat what is available in the home. Mother, Ivakhale

The most commonly consumed foods that are culturally recommended for pregnant women include green bananas, ugali, sweet potatoes, porridge, fruits, and green vegetables like kunde, mreda osuga, and sagaa. These are foods that will ensure a woman has enough strength to push during delivery.

In Western Province, foods that are not recommended for pregnant women include eggs and ripe bananas, as these are believed to make the child grow big (therefore leading to a difficult birth). It is also believed that eating eggs may result in the child being born dumb. One mother in an FGD in Ivakhale, however, disapproved of this belief based on her experience, saying, *When I was pregnant, I used to eat eggs, and when I gave birth, my child was very ok, so I don't think the eggs we eat affect the fetus.* It was thought that pregnant women should not eat chicken, as this may cause the baby to grow protruding veins on the forehead and also lead to bad health. Sugarcane is not allowed, as it is thought to cause excessive bleeding in the mother during childbirth, or the mother to give birth to a mongoloid. And beef from a cow that was expectant should not be consumed, as this is believed to cause a miscarriage.

Asked how pregnant women are assisted to eat more, participants in Shivuli explained that sometimes mothers are advised to buy multivitamins to boost their appetite. They are also encouraged to consume green leafy vegetables and take iron supplements. It was noted that many women crave soil during pregnancy.

Individual stories of women during pregnancy varied. Some of the foods reported eaten during the most recent pregnancy were Irish potatoes, cassava, matoke (mashed fried bananas and potatoes), ugali, and green vegetables (mostly mreda, tea, and mamdazi). One mother in Shivuli who had a huge appetite during pregnancy narrated her experience:

I used to wake up at 5 am, cook ugali, and eat with the vegetables of the previous day. Then at about 7 am, I get milk, cook and drink tea, and eat ripe bananas. At 10 am, I would get very hungry, so I go and buy a whole loaf of bread and eat with tea. At 1 pm, I have to eat ugali and as many ripe bananas as I could get. In the evening, I eat whatever is there, and again before going to sleep around 10, I would eat any leftover food. That is how it was until when I gave birth.

Another woman in Ivakhale also shared her experience:

During my pregnancy, the first three months, I didn't eat ugali at all, I just took porridge and was fine, but from the fourth month, I began eating anything and everything.

Dietary practices of breastfeeding women

In Eastern Province, focus group participants underscored the importance of a good diet for breastfeeding mothers. They emphasized that breastfeeding mothers need to eat a balanced diet so that they can produce “strong milk,” regain their strength, and “bring back blood lost during delivery.” There was consensus that when women deliver, they eat and drink more than before because they feel hungrier. Participants also pointed out, however, that a good diet is not available for the majority of mothers in Karurumo and Kithimu due to lack of money.

It was reported in Western Province that breastfeeding mothers are able to eat well because friends, neighbors, and family members bring donations of various foods. Common foods eaten at this time include tea, millet porridge with milk, and green leafy vegetables, especially pumpkin leaves and mreda, which are believed to increase breastmilk production. Porridge is said to improve appetite.

Focus group participants said that the child of a mother who does not eat well during breastfeeding has poor health and is usually more vulnerable to sickness. Foods that should not be eaten when a mother is breastfeeding include alcoholic beverages, kunde (amaranth), and roasted maize, as they may cause breastmilk to dry up. This concern is mainly for the first six months of life, because after that, a baby can eat other foods. As much as mothers would like to eat well, it is often not possible because they are sorely dependent on earnings from fathers, who are dependent on the availability of casual jobs. Foods that women eat more often during pregnancy include millet porridge, beans, indigenous vegetables such as pumpkin leaves, and ugali.

Sources of advice to mothers on diet

In Eastern Province, the main sources of information and advice for mothers on diet are health workers; grandmothers; older, more experienced mothers; and community health workers. Breastfeeding women are advised by health workers to eat pumpkins, black beans, and porridge. They are also advised to visit the clinic at least four times before the delivery. Asked if they were able to eat and drink the foods and drinks they like while breastfeeding the youngest child, mothers in both Kithimu and Karurumo said this remains a challenge. Mothers reported having consumed the usual diet, except for a few, who mentioned having been able to eat extras like bone soup, meat, matoke (mashed fried bananas and potatoes), and fruits.

In Western Province, the sources of advice seem to be more extensive, including:

- Health workers when women attend the antenatal clinic, especially first-time mothers.
- Group health talks.
- APHIA II field facilitators through community-level support groups.
- Community health workers trained by APHIA II.
- Grandmothers/mothers-in-law.
- Women's merry-go-round (savings and investment) groups (community health volunteers provide information to the group during meetings).
- Media. Health programs are broadcast on the local FM radio station (West FM). *Jua Afya Yako* (Know Your Health), which is usually broadcast in the evening, was reported to be very educative.
- Churches, at which guest speakers are sometimes invited to address topical issues on health.
- Public gatherings, at which teachers come to teach how to take care of children from birth.

One mother in Shivuli explained how she had benefited from advice from a women's group meeting on infant feeding:

I used to be told that three weeks after giving birth, I had to go back to work. I would give the baby porridge and go to the shamba [garden]. After these teachings, I learnt that it was wrong because I was denying the baby milk and motherly care. With the current baby, my husband was more supportive and I rested more and breastfed our baby, who is healthier and jovial.

Antenatal services

Eastern Province

Women in Kithimu attend the antenatal clinic at Kithimu Health Centre, which offers comprehensive, integrated maternal and child health services, including a package of care on PMTCT. According to the facility in-charge, nutrition interventions offered at the clinic at the facility include maternal, infant, and young child nutrition education, supplementation with iron and folic acid, and routine monitoring of weight gain for all pregnant women. Health talks cover issues on breastfeeding exclusively for the first six months, with emphasis on a balanced diet for

pregnant women. The nurse in-charge noted that they discourage women from using multi-mix flours, which are popular in the area for porridge of young children. Instead, they advise use of a mix of millet and maize meal only. The facility also liaises with community health extension workers and community health workers for deworming and supplementation of children younger than 5 years with vitamin A every six months through Early Childhood Development Centres and primary schools in the community.

Karurumo Health Centre offers integrated maternal and child health and curative services. It also has voluntary counseling and testing facilities. Strong teamwork and personalized counseling of mothers on maternal, infant, and young child nutrition was observed at the facility. Three nurses trained on infant and young child feeding have mainstreamed counseling on maternal, infant, and young child nutrition in the maternal and child health, maternity, and postnatal wards at the facility. Every mother was observed receiving individualized counseling after their babies were weighed, using the age-related feeding practices outlined in the mother-child health card. Mothers who are literate are encouraged to read the card for themselves.



While vitamin A supplementation for children younger than 5 years is rigorously adhered to, examination of records showed that vitamin A supplementation for postnatal mothers is rarely done at either facility. It was also observed that there is no referral system for mothers to community health workers for follow-up at the community level.

Focus group participants in both Karurumo and Kithimu reported having attended the antenatal clinic at least once during the last pregnancy. Services received included a blood pressure check, HIV testing, and weight and position of the baby. The majority said that they gained weight regularly during pregnancy. Participants reported that they were given iron supplements at the first antenatal visit, to be taken daily for one month. Women were advised to eat green vegetables, liver one or two times a week, and to eat animal proteins. Mothers were to attend postnatal care at six weeks. Routine checks were performed on the baby and mother. The majority of mothers said they had not received vitamin A after delivery. None of the mothers were aware of the benefits of vitamin A for women.

Western Province

Data from Western Province demonstrated that all the women in the groups in Ivakhale and Shivuli reported having attended an antenatal clinic for the last pregnancy. Services received included counseling on diet during pregnancy; physical examinations, including recording of weight; and advice on clothes to wear during pregnancy. They also received iron tablets; their

blood pressure was taken; and they were administered a tetanus injection. Mothers said the services were good, although some of the health workers reportedly were rude. Women reported attending an antenatal clinic three or four times during their most recent pregnancy, although this could not be verified.

I went to Eshikuhyu clinic and was advised to take a balanced diet, like in the morning, when you take milk, tea, with sweet potatoes, then lunch time, you could eat ugali with vegetables and maybe an egg as well.

There are different medicines that I was given when I visited the clinic. Some were for increasing my blood levels; others were multivitamins and anti-malarial tablets. I was also given an anti-tetanus injection. After that, only my weight was taken when I went.

Most of the mothers reported receiving iron tablets, which they understood to increase blood in the body. They were taken three times a day for five weeks. However, most women reported throwing the tablets away and lying to the clinic doctor and alternatively consuming more beans as a substitute for the iron tablets. Although the women were knowledgeable about the purpose of iron supplements, to increase blood levels, most women said they would rather eat iron-rich foods than take the supplements because of the aftertaste and nausea they caused.

Men's views on accompanying women to the clinic

In both areas, men explained that accompanying a woman to the clinic is uncommon, largely because it is perceived as a woman's responsibility. Men did however note that newly married men sometimes accompany their wives to the clinic, but this ceases with time. The few who accompany their wives do so only when there is an emergency. Men see their role as providing money to go to the clinic and any additional things recommended by the clinic. However, it was pointed out that there are men who do not want to discuss the advice from the clinic or support mothers. It was reported that only a few men follow up to find out the outcome of a visit to the clinic; the majority do not, unless the mother volunteers the information. Mothers pointed out that the few fathers who show interest usually seek to find out if a child has gained weight. Men said they support their wives by providing special foods that health workers advise be purchased for the child. Some are also willing to allow a mother to reduce her workload when advised by a health worker, especially during the last trimester of pregnancy. A man in Kithimu gave an example of support to his wife during her last pregnancy:

Last year, my wife went for prenatal clinic and the doctor told her to stop doing heavy work. I didn't ask her for the reason, but allowed her to do simple chores until she delivered. FGD, Kithimu

However, generally, women continue to perform all their responsibilities with little respite until they deliver. Advice from health workers to reduce workload, especially during the last trimester, is not followed by most women, as they do not have alternative support. Male partners often regard this as an excuse by women to avoid working. After delivery, women are relieved from routine responsibilities by relatives and grandmothers for about two to three weeks, after which they gradually resume full responsibilities.

In Western Province, men saw providing adequate food for mothers who are breastfeeding as their role. A second role for men is to ensure that women attend clinics so they obtain

information or education about how to feed infants and young children properly. Men were categorical that there is no need for them to accompany a mother to the clinic unless she is very sick after delivery, to assist her by carrying the baby. They argued that it is a waste of time because they do not have *any businesses at the clinic*. One man in an FGD in Shivuli said, *When she visits the clinic, she is tested and examined but what of me? What shall I be tested for?* In addition, men said they are generally busy and lack time to accompany their wives to the clinic.

Postnatal care

Those who deliver at home go to the clinic for the baby's follow-up after one week, while those who deliver in the hospital attend the postnatal clinic afterward, up to six weeks. Mothers are sometimes given vitamin A to boost their immunity and to prevent blindness in the child.

Challenges faced by pregnant and breastfeeding women

- ***Lack of experience in childcare:*** Key informants in both areas noted that there is an increasingly large group of very young girls getting married just after completing primary school. These young mothers are largely inexperienced and ill-prepared for motherhood, and therefore, rely on grandmothers, who also do not have up-to-date information on proper care of young children.
- ***Maternal workload:*** The main challenge mothers said they face is related to workload. Women continue to shoulder household responsibilities and engage in productive activities with little assistance throughout pregnancy. Time-consuming activities like fetching water and firewood are a challenge. After delivery, mothers receive support and help with household chores only for a few weeks before resuming full responsibility.

We have no time to rest unless when hospitalized.

When you have a young one, it is difficult. When you wake up, you start preparing the children for school; at the same time, fixing their breakfast and the baby is crying. Sometimes your husband wants you to do for him things, forgetting that you are nursing the baby. He comes back and you have not washed his shirt and the next thing you get is a slap.

We hardly have time to rest. Even now, I am dozing. I wake up at 5 am and my responsibilities are just too much, and most times, I have no one to assist me.

The greatest problem we face is lack of water. We also have to dig, feed the livestock, and fetch firewood.

Getting clean water is not easy. Sometimes we fetch water from the stream and store it for the whole week, although we know good water requires that you fetch, boil, and store in a pot. We don't do that. We just take it straight from the stream and drink due to lack of time.

Getting firewood is very difficult. Sometimes we go looking for dry firewood because of the scarcity of kerosene for lighting the lamps.

- **Inadequate household income:** This forces women to engage in casual work to supplement household income, resulting in inadequate time for care of young children.

When you have a young child, it is difficult for you to do a lot of things, including casual jobs which can help you earn some income. Sometimes when you are lucky, you can get a casual job for ploughing which earns you like 80 shillings (US\$1). That is like a jackpot. When I come back home, at least am able to budget with that, but it's difficult when you have a young child like this one because you cannot go anywhere to work. FGD, Ivakale

- **Poor diet:** Women mentioned that they do not get enough of the right types of foods to eat during pregnancy and breastfeeding because of lack of money.

We don't get a balanced diet. We are forever eating tea with sweet potatoes for breakfast, same thing for lunch, while dinner is always ugali with sukuma wiki [green leafy vegetables]. This is not balanced. We need a variety.

- **Conflicting information:** Sometimes mothers receive conflicting information from grandmothers and health workers. For instance, while they are advised by health workers to breastfeed exclusively for six months, some grandmothers encourage them to give newborn infants other fluids as early as 2 weeks of age.
- **Crying babies:** During the first six months, babies cry a lot so we give other food.
- **Insufficient support from fathers:** Key informants at health facilities noted that there is minimal involvement of men during pregnancy and breastfeeding, and they do not accompany their wives for antenatal and postnatal services, citing being busy as the reason.
- **Inadequate social support for pregnant and breastfeeding women:** Pregnant women struggle on their own to take care of the other young children.

It is very difficult when you have just delivered and are nursing a baby. You don't have much strength and time to go and fend for yourself, so you end up asking for help from others who may help you but they keep talking about you or complaining after you have left.

- **Inhibiting cultural beliefs on childcare:** Traditional beliefs from elderly women on care of young children is a challenge. For example, when a child gets sick, you can get some women advising the mothers not to take the baby to hospital, claiming that it's just something normal.

Dietary practices and care of children younger than 2 years

Practices and perceptions around exclusive breastfeeding for the first six months of life

Perceptions of mothers, fathers, and grandmothers on the MOPHS recommendation on exclusive breastfeeding for the first six months were sought. Mothers in both Kithimu and Karurumo were unanimous that breastmilk is beneficial for young infants and that it is good to breastfeed exclusively for the first six months of life. Key benefits cited were that babies grow well and are observed to fall sick less often compared to those who are given other foods early. Grandmothers concurred that breastmilk is the best food for newborns up to 6 months. While both mothers and grandmothers were aware of the MOPHS recommendation for exclusive breastfeeding of babies for the first six months, they concurred that few mothers in the community practice this. Focus

group participants in Kithimu argued that only mothers who do not have much work and who eat strong foods such as bananas, potatoes, green vegetables, and black beans can breastfeed exclusively for six months. Unfortunately, it was noted, most women can afford to eat only githeri (boiled salted maize and beans) and so are not well-nourished to breastfeed exclusively for six months. Grandmothers in Kithimu mentioned that although most mothers start giving foods before 6 months of age, they will not admit it because they are advised by health workers not to give other foods before 6 months.

Similar findings were seen in the data from Western Province. Mothers were aware of the recommendation on exclusive breastfeeding and agreed that babies grow well on breastmilk alone in the early months of life. As in Eastern Province, while some mothers acknowledged that it is possible to breastfeed a baby exclusively for six months, they noted that this is only possible when a mother has access to a balanced diet and when she is with the baby throughout, which they argued is not practical for the majority of women. One mother in Ivakhale summarized it thusly: *The major reason as to why most of us don't breastfeed is because most of us don't eat well, so we cannot produce enough milk.*

In Ivakhale, mothers were unanimous that exclusive breastfeeding for the first six months is not possible. They explained that those who try do not go beyond three months because breastmilk is not enough and the baby becomes too hungry and cries often.

We sympathize with their cries and end up preparing food for them. Other mothers after birth still have abdominal pain, so they don't have time to attend to a crying baby and they end up giving other liquids to the baby. Some mothers are still students, which makes them not to be available all the time to feed the baby. This makes the guardians give other foods besides breastmilk. When the mother is unwell, especially if it's a breast sickness, it makes her not able to breastfeed. FGD, Shivuli

Lack of support from fathers was noted as another reason mothers do not exclusively breastfeed for the first six months, and from it was reported that some mothers are able to breastfeed exclusively for the first six months, while others are not, because they receive extra support from their husbands during that time:

Those who are able to breastfeed for six months have a lot of milk in their chest. They are also well taken care of by their husbands, who buy them food while they are breastfeeding. This is not possible to most of the mothers who cannot be able to breastfeed exclusively because their husbands don't provide enough food for them to eat during the months following delivery. Stress also causes milk not to be produced, especially when the stress is from the husband. When mothers are stressed, they produce less milk, making them look for alternative feeds like porridge.

Other key hindrances to exclusive breastfeeding cited:

- **Crying:** *Some babies cry even before you leave hospital after delivery, and the mother is forced to feed the baby so that it can stop crying. Others get hungry very fast and must be fed to stop crying* (FGD, Karurumo). A mother in Kithimu said, *At one month, some babies start yawning and crying for food. Most times when the babies are given food, they stop crying.* In Eastern Province, goat's milk was said to be strong and to give extra energy, especially to

baby boys. In Western Province, it was noted that babies stop crying when they are given porridge. The men in Western Province stated, *Some children are born hungry and need to feed frequently. For such children, breastmilk alone cannot be enough for six months.*

- **Maternal work:** Some mothers go for casual jobs, such as tea-picking, and have to leave babies behind with other caregivers, who give the infants something to “hold the stomach.” In Western Province, participants said that some mothers are very busy and cannot afford to stay at home the whole day, and so they prepare porridge or milk and leave it with a caregiver to feed the baby. Men mentioned that mothers return home from work “with chests tired,” and therefore, produce minimal milk. A male participant in Western Province noted: *Most of the women I know leave very early and return late in the evening. One cannot just keep the child til evening waiting, so she can buy some milk for the child to take while she is away. If she decides to stay at home and not go out, she still cannot just stay at home for a whole six months, all because of breastfeeding, so that makes it difficult to breastfeed for the first six months.*
- **Inadequate milk:** Mothers believe their breastmilk is not adequate for a baby and thus the baby frequently cries. A health worker in Kithimu told the story of a mother seen at the facility with a 2-week-old baby, who said she was waiting for the umbilical cord to dry up so she could start giving porridge because she was not producing enough milk and the baby was crying often. In Western Province, breastmilk is thought to be very light, and given exclusively, not adequate to meet a child’s needs for six months: *Ni ngumu tu mtoto kuishi na maziwa ya mama tu kwa hiyo miezi yote* (It is impossible for a baby to thrive on breastmilk only for all those months).
- **Home stress:** Mothers, grandmothers, and even men mentioned stress at home as an important issue. Men in Karurumo (Eastern Province) said that stress on women due to domestic responsibilities hinders the ability to produce enough milk: *The home environment also matters a lot. If the husband comes home and starts quarreling, the women will be stressed and have nothing or just little milk in her breast.*
- **Maternal diets:** Many grandmothers and mothers have the perception that mothers do not have the means to eat well enough to be able to breastfeed exclusively for six months.
- **Boys’ needs:** In Western Province, participants mentioned that boys need more to eat and cannot thrive on breastmilk exclusively for six months.
- **Hiccups:** According to a focus group participant in Shivuli (Western Province), babies are sometimes given water when they hiccup for a long time.
- **Influence of grandmothers:** Health workers in Karurumo noted that despite counseling given to grandmothers on exclusive breastfeeding for the first six months of life, given when they bring women to deliver, many infants are already on water by the six-week postnatal clinic visit. The majority of mothers attribute this to pressure from grandmothers, who insist that water is necessary. Noted one mother in Karurumo: *I was forced by my mother-in-law to start giving water. I talked with her and told her that breastmilk has enough water, but she insisted. I did not want to offend her, so I agreed.* In Kithimu, a nurse remarked: *We counsel them to breastfeed exclusively for six months but when they get home, the grandmother doesn’t want to hear that.* Similar incidences were reported in Western Province, where

grandmothers sometimes discourage mothers from exclusive breastfeeding and advise mothers to give other foods to the baby.

Men's perspectives on breastfeeding

Men in Kithimu and Karurumo were aware that doctors recommend that a child should be breastfeed exclusively for the first six months of life. While they agreed that breastmilk is very good for babies, they nevertheless contended that exclusive breastfeeding for six months is impossible in their community because *mothers need strength and must eat nutritious and healthy food to do so*. Further:

We lack means of putting nutritious food on the table for our wives; therefore, many babies are fed on other foods apart from breastmilk well before the six months are over.
FGD Karurumo.

If you buy a cow and feed it well, it will produce a lot of milk. So also our wives can manage to breastfeed if they eat a balanced diet. Usually they breastfeed for three months and then complain that their body is weak and they do not have enough milk.
FGD, Kithimu

Men cited the following additional key reasons mothers do not exclusively breastfeed for the first six months:

- **Pregnancy:** Men in Western Province mentioned that when a mother becomes pregnant again, breastfeeding should stop immediately, as “the other baby’s milk is being consumed.”
- **Youth:** Men in Eastern Province mentioned there is insufficient knowledge on the importance of exclusive breastfeeding, especially among young couples: *Some girls become mothers at age 15 and have no idea about care for children or family planning.*
- **Poverty:** Rampant poverty renders it difficult for mothers to get enough to eat to be able to breastfeed exclusively: *It is true that mothers need to eat good healthy diet, but our sources of income are not good. In a week, it is only possible for a woman to eat well maybe for two days, when our income is good* (FGD, Kithimu). In Western Province, inadequate money was cited as a common challenge: *You have to be well financially to ensure that the mother gets enough food to eat to produce the milk required for six months and the energy she needs. It should be food that builds their bodies. Even if she milks her breast and stores for the child, she is able because whatever she is eating is nutritious.*

Ways in which men can support women to breastfeed exclusively

When men in Eastern Province were asked if they think women have enough time to breastfeed, men in Karurumo felt that women generally have adequate time: *They can breastfeed while they work because a child only needs to breastfeed for about two to five minutes when it cries. Instead of breastfeeding, some women use baby cups, which they fill with cow’s milk and give to babies when they are busy.* Focus group participants suggested that fathers could be of more help to mothers by keeping the mothers healthy through providing good food such as bone soup, millet porridge, beans, milk, eggs, and meat, and ensuring that mothers get enough rest. They also suggested that they could spend more time with their wives, and ensure they practice family planning so that they do not conceive within the first six months following birth.

In Western Province, men highlighted the following ways fathers could support mothers to breastfeed exclusively:

- Providing mothers with a good diet, including foods that enhance breastmilk production, such as fruits (avocado pears), beans, meat, green vegetables, chocolate to drink, millet porridge with soya and groundnuts, maize, and sorghum.
- Ensuring mothers are free from stress by avoiding domestic conflict.
- Ensuring mothers attend clinics to obtain information and education about breastfeeding.

Duration of breastfeeding and weaning practices

Women said that most mothers stop breastfeeding their children when they are around 2 years old, although some babies refuse to suckle and quit earlier. Sometimes mothers force babies to stop breastfeeding when they perceive breastfeeding is causing a child to refuse to eat other foods well. Mothers also stop breastfeeding due to multiple responsibilities. One participant in Karurumo asserted: *Our chores and breastfeeding cannot go together, so we opt to stop breastfeeding.* Mothers in Kithimu and Karurumo shared several methods they use to wean their babies from breastmilk, including applying aloe vera or pepper to the breast, sending the child to a grandmother for awhile to forget about the breast, and putting the baby to sleep with older children.

Men in Karurumo said that a baby should be breastfed for one to two years, but added that it all depends on the mother. Mothers know that it is time to stop breastfeeding when the baby loses interest in breastfeeding after introduction of other family foods: *A child who is 1–2 years old usually eats many types of food. The more it eats, the more it forgets its mother's breast.* Mothers determine when to stop breastfeeding, most often when young children refuse to eat well, preferring to only suckle. Mothers then opt to stop breastfeeding so the child will eat, most often from the age of 2 years. Some mothers stop breastfeeding when the child starts biting the breast while suckling, or when the mother becomes pregnant.

In Western Province, the duration of breastfeeding was said to depend on individual mothers, with some breastfeeding for three years, others two years, and others stopping as early as eight months. Focus group participants in Ivakhale reported that most mothers breastfeed for at least one and a half years. Reasons given for early cessation of breastfeeding include becoming pregnant: *Some mothers stop breastfeeding when they conceive almost immediately after giving birth.* Mothers' multiple responsibilities also get in the way of breastfeeding. In Shivuli, babies were said to be breastfed for two to two and a half years. In most cases, the babies want to go on breastfeeding, but the mothers force them to stop.

Complementary feeding

Factors influencing the feeding of children younger than 2 years

Key informants interviewed were unanimous that feeding of young children in Kithimu and Karurumo is poor. Despite both areas boasting of good food production, it was observed that young children subsist on monotonous diets comprising mashed bananas and potatoes. This was attributed to:

- Inadequate knowledge of proper feeding of young children due to low educational levels of most mothers. While foods are available, most young mothers have limited knowledge on how to mix these to yield a balanced diet for young children.
- The strong influence of grandmothers, who sometimes contradict health worker messages to mothers on the ways to feed young children.
- Poverty, prompting families to sell nutritious foods such as beans and milk in order to purchase foods such as rice, sugar, wheat flour, and cooking fat.
- Young mothers typically not joining women's groups, where they could gather information from other mothers.

Feeding of children younger than 2 years

In Kithimu, grandmothers said they decide what young children eat. This is because they feel that their daughters-in-law, most of whom are young, are inexperienced in matters of proper child feeding. Grandmothers in Karurumo noted that while mothers primarily decide what young children eat, grandmothers observe closely how their grandchildren are fed. If, for example, a mother is giving only porridge, a grandmother will introduce the child to solid foods when left to care for the child. These grandmothers also noted that *sometimes, mothers seek our advice and we tell them what foods to give.*

In Kithimu, grandmothers said that children younger than 2 years eat special foods (e.g., rice, green grams, and beans), different from those eaten by adults. However, men pointed out that children aged 1–2 years eat most of what the rest of the family eats, such as bananas, potatoes, and ugali (maize meal) with milk or vegetables, such as pumpkin leaves and black night shade. The only food they are not given until they reach 2 years is githeri (boiled salted maize and beans). Men also observed that after a child reaches 2 years, mothers stop preparing special foods for them. When the family is eating githeri, the mother picks out beans, potatoes, and vegetables or meat soup for the young child. It was observed that children from 2 years also walk around and can eat at the grandmother's home. According to the grandmothers, foods that are considered appropriate for infants 6–12 months are breastmilk, matoke (mashed fried bananas and potatoes), porridge, and fruits. In addition to these, other foods that are perceived as appropriate for children 1–2 years are eggs, meat, and beans. Children are not allowed to eat meat before 2 years.

In Western Province, young children were reported to eat the same foods as the rest of the family but with some modification. Grandmothers in Shivuli and Ivakhale concurred that young



children generally eat the same food as the rest of the family, but that it is made lighter and softer: *We make children's food a little different by mashing and adding soup to make it soft. Potatoes are mashed for easy swallowing, while ugali is softened with soup.* Some grandmothers however observed that children eat some foods that are not regularly consumed by the rest of the family, such as rice, mashed bananas, avocados, mashed beans, and porridge. In addition, the following were cited as foods typically eaten by young children: sweet bananas, *because we have them in plenty*; sweet and Irish potatoes; beans; ugali; mashed beans; and porridge. The porridge fed to young children comprises a multi-mix of soya beans, omena (dried fish), groundnuts, and maize ground together. These different ingredients are combined, as they are believed to make a baby strong and impart good health.

First fluids typically given to young babies

Most often, babies are first introduced to glucose or sugar water. Mothers said they start to give water to their babies at different ages depending on when a need is perceived, such as showing signs of abdominal discomfort, hiccups, or delayed passing of stool. Some give water as early as 2 days. Other fluids introduced in the early months of life are cow's or goat's milk and fruit juices. Mothers underscored that the type of milk given is dependent on the type of animal kept. Goat's milk, for instance, is rarely given, as it is rarely available and therefore expensive. It was explained that the milk is usually diluted because it is very strong for the baby (especially from cows that have stayed long after calving). Probing showed that fluids are given using a cup. Though not used to feed milk, it is common to use feeding bottles to give young children tea.

In Western Province, mothers indicated that by 6 months, most infants have been introduced to foods other than breastmilk. This was confirmed by key informants, who reiterated that very few mothers manage to breastfeed exclusively for six months as advised by health workers. Grandmothers in Ivakhale and Shivuli were aware that mothers are advised by health workers not to give babies any other fluids or foods before 6 months of age; however, they said that age at introduction of other fluids depends on how hungry a baby is. Grandmothers said that water is given by 1 month, while cow's milk should be given at 2 weeks because breastmilk is not enough. In addition, supplementing breastmilk with cow's milk is believed to make the baby healthier, symbolized by smooth, healthy skin. It was noted that milk and porridge are given from birth when a mother dies. The fluids are typically given to the child using a cup. According to mothers, salt/sugar water is introduced any time from birth onward when the child cries or fails to pass stool. Water and other fluids are also given when the mother does not have breastmilk soon after delivery; fruit juices are given to the baby alongside plain water. These fluids are fed using cups with teats, a cup and spoon, or a cup alone.

Introduction of solid foods

Focus group participants in Kithimu said mothers decide what to feed a baby depending on what is available, what a baby likes, what other mothers say is good for babies, and what the doctor advises. The first solids to be introduced include porridge and boiled mashed bananas softened with milk. A focus group participant in Kithimu observed: *As the baby grows bigger, we add other items, such as potatoes, tomatoes, and green vegetables such as spinach, pig weed, and green grams. The amount and thickness given is based on a baby's age.* Mothers begin with one item, most frequently thin ugali (maize meal porridge) to which other ingredients such as millet, sorghum, and groundnuts are added gradually. Most often, women sieve food to remove the

outer cover and wash until the food is fine. Initially, babies are fed twice a day with a small portion of food, and the quantity given is increased over time.

Cues for readiness to eat solid foods

The following were cited by mothers and grandmothers as common cues of a baby's readiness to start eating solid foods:

- Staying awake during the day while on breastmilk, indicating readiness for something else.
- Reaching out for food while someone is eating.
- Biting the breast, taken to mean a baby is ready to chew food.
- Crying too much even after breastfeeding, perceived to mean the baby is not satisfied and needs to eat something else.
- Following a spoon with the eyes when a mother is eating a meal.
- Refusal to take fluids, perceived as wanting solid foods.
- When given porridge, the baby shows signs of not being satisfied, which is perceived as being ready for solid foods:

At times when you are eating, you may see the infant opening its mouth and at times trying to reach for a spoon in a manner suggesting that it is not satisfied. Grandmother, Karurumo

Very similar signs were mentioned by mothers and grandmothers in Western Province:

- Grandmothers in Ivakhale explained that a key indication is when a baby starts following the hand from the plate to the mouth with their eyes. *This shows that a baby wants to eat what you are eating.*
- *If you take a small portion of the food and put it to the baby's mouth and it swallows, then the baby is ready to start eating other foods.*
- *If a baby starts pulling things and putting in its mouth, it is a sign that they want to eat.* Usually this is followed by the mother or grandmother introducing soft mashed foods to the baby. This normally happens around the time babies begin to sit up (at around 4 months). They start picking food particles and putting them into their mouth.
- When a child continues to cry after being given fluids, the mother may introduce solid foods.
- When in the company of older siblings and a baby cries and reaches for the solid food being eaten by the older siblings, the baby is deemed ready to eat solid foods.
- Extending their hands toward food or cups or becoming restless when they see an adult eating is taken to signify that a baby is ready to start eating solid foods.

The first solid foods that are introduced include light foods like porridge and mashed fruits such as pawpaw. Thickness of the porridge depends on the age of the child. During the initial stages (3–6 months), thin porridge is given. The flour is mixed with water and passed through a sieve. The residue is discarded and the water solution put on the fire to make porridge. From 6–8

months, whole flour is used without sieving. Porridge is made from a combination of soya beans, omena, groundnuts, beans, and Blue Band margarine. Other foods given to infants include mashed potatoes and avocados.

In Eastern Province, the majority of mothers also mentioned supplementing breastmilk with other foods by the second or third month of life. The foods that are introduced during this period include water, cow's or goat's milk, thin maize meal porridge, and fruit juice, depending on the baby's ability to tolerate the foods. According to grandmothers, some mothers add water to the milk so that it is not too strong for babies. These are followed by thin maize flour porridge that is sieved. Most often, fluids are given using a baby's cup (plastic cup with a spout), feeding bottle, or cup and spoon. Grandmothers underscored that babies less than 6 months are never given sorghum porridge, which is perceived as "too strong" and difficult to digest.

Feeding patterns of children 0–2 years

0–2 months: In Eastern Province, grandmothers in Kithimu said babies are breastfed but they also receive water and sometimes diluted cow's milk, when the mother is perceived to have inadequate milk. Grandmothers argued that everyone gets thirsty, including infants. In addition, they explained that infants need water because the other foods they receive, such as porridge, needs water to be digested. The water also enables the infant to pass soft stools.

In Western Province, it was unanimously agreed that breastmilk is best for newborns and babies up to 2 months. Porridge was perceived as the best alternative for babies at this age who cannot be breastfed. In addition to breastmilk, babies 2–3 months receive water, cow's milk, and thin maize meal porridge.

3–6 months: In Eastern Province, in addition to water and milk, most babies are introduced to sieved maize meal porridge and mashed fruits at this age.

In Western Province, babies are introduced to mashed fruits such as pawpaw and avocado pears, depending on their availability, and boiled pumpkins softened with cow's milk.

7–12 months: In Eastern Province, infants receive boiled pumpkins and matoke (mashed fried bananas and potatoes). Grandmothers insisted that if babies are not introduced to mashed food by 9 months, they will not be able to consume other foods. Mothers explained that the porridge given after 6 months comprises maize flour, finger millet, groundnuts, and soya beans, and is enriched with cow's milk. This multi-mix ensures that even if a baby refuses to eat other foods, mothers feel the baby has already taken a complete meal. Salt, spices, and sugar are not given at this age. This is borne out of fear that the baby might get used to sugar and refuse to drink the porridge when parents do not have sugar. Salt is also not used in children's food *so that the infants may not be exposed to tastes too early*. Probing revealed that consistency of porridge given is neither thin nor thick; it has a medium consistency. Grandmothers emphasized that individual babies determine when to start eating certain foods. Other fruits given at this stage include pawpaws, mangoes, avocados, and oranges. A grandmother in Kithimi explained that:

It reaches a point when the child refuses to eat food specifically prepared for it starts to eat what the family is eating. Like my grandchild is 9 months and it eats ugali and sukuma wiki.

In Western Province, mothers in Ivakhale said that by 6 months, in addition to breastmilk, babies subsist on porridge with additional ingredients such as millet, groundnuts, sorghum, and omena. Milk is also given. Participants explained that porridge given at this age gradually increases in consistency, with the thickest given when babies are 9 months old. Other foods that are given at this age are mashed Irish potatoes, beans, and ripe bananas. A mother in Shivuli illustrated this, saying:

In the morning, I breastfeed my baby and then put her to bed. When she wakes up, I give her porridge, then later, breastfeed her again. I do this until she gets to 8 months, when I introduce mashed potatoes or ugali. I was advised at the clinic that from 7 months, I can start giving foods like mashed avocados or soft ugali that is dipped in soup.

In Western Province, at 9–12 months, more foods are added to an infant's diet, such as ugali with soup, pumpkins, and fruits that are in season, such as mangoes, ripe bananas, and pawpaws. Commercial cereals such as Weetabix are also given by those who can afford it. Babies at this age are also fed mashed food to which beans and green vegetables are sometimes added. Probing revealed that porridge consumed by infants and young children in Western Province primarily consists of maize meal in the early months of life, with other flours gradually added. Multi-mixes of flour that include millet, beans, groundnuts, soya beans, sardines, green grams, simsim, cassava, and sorghum are common. These are milled together or purchased as multi-mixes.

13–24 months: In Eastern Province, children at this age eat most of what is eaten by other family members: *At this age, they are not selective.* The child is introduced to family foods such as rice, ugali, beans, and avocados. The only family food not given is githeri (boiled salted maize and beans). Mothers in Kithimu said they also give green grams, rice, and ugali softened with milk or soup. Children at this age are also given meat soup and liver when available. They are introduced to other foods such as pumpkins, and mothers begin to give fried foods seasoned with salt and mild spices. Porridge continues to be a key part of young children's diet up to 2 years of age. Fluids are fed using baby cups (with spouted lids).

In Western Province, young children from 12 months continue to breastfeed and eat most foods consumed by the rest of the family, such as tea, sweet potatoes, yams, ugali, and cowpea leaves. Meat, chicken, and fish are also given when available. Porridge continues to constitute an important part of the diet for young children. Focus group participants in Western Province noted that the child eats everything the family eats, including sugar cane.

Frequency of feeding

In Eastern Province, patterns of feeding young children in the two areas are comparable. Both mothers and grandmothers concurred that the financial well-being of a family influences what young children are fed, and how often. Grandmothers pointed out that infants from well-to-do families may eat between five and six times a day. In Kithimu, focus group participants said mothers feed their babies four to five times a day: three solid meals and porridge given mid-morning and mid-afternoon. Fluids given other than breastmilk include passion juice, milk, and water to which some sugar or glucose is added. Around a glass and a half of milk is spared each day for the baby. This is given plain or mixed into the baby's porridge or with mashed foods for babies who do not like to drink plain milk.

In Karurumo, children younger than 2 years are fed four to five times a day. The majority of mothers give solid foods and fruits such as pawpaw, mangoes, or bananas three times a day and a fruit and porridge in between the two meals. A typical pattern: porridge at 7 am, matoke (mashed fried bananas and potatoes) at 10 am, a fruit at 12 or 1 pm, milk or porridge at around 4 pm, and more matoke in the evening. Milk is given after every meal and at 3 pm *to make the food that has already been given strong*. It was explained however that frequency of feeding depends on individual children. Mothers noted that babies and young children eat as often as they want: *This can even be seven times in a day*. Another mother emphasized: *A small baby can eat up to five or six times in a day but at short intervals, as their stomachs are still small*. Mothers said young children do not have specific feeding times but get to eat when the food is available and when the mothers are available.

In Western Province, the frequency at which food is given to young children was said to be determined by factors such as the appetite of the child, whether the child is sick or not, the age of the child, and the child's eating habits. Focus group participants in Ivakhale pointed out that most mothers feed young children four to five times in a day, or more, because they eat in small quantities. *Some even feed up to seven times in a day*. In Ivakhale, a grandmother said that young children eat four or more times in a day: *In the morning they take tea, lunch time they eat mashed potatoes, at four in the evening they take porridge, and finally in the evening they take ugali with the rest of the family members*.

Mothers in Shivuli pointed out that the frequency of feeding for infants 6–12 months is four times a day, while from 12 months onward, frequency of feeding varies, with some children fed between three and four times, while others are fed on demand. Generally, there are no specific times when children are fed. They are given the meals on demand. A mother in Ivakhale observed: *Some mothers give porridge throughout the day, give the baby ugali in the evening, and give porridge again either once or twice in the night*. Porridge is normally given four times in a day, while fruits are given once a day when available. Mothers in Shivuli however concurred that children younger than 2 years are generally fed in the morning and between 1 and 2 pm so that they can sleep and give mothers time to carry out other activities in the home or in the *shamba* (garden).

How mothers know how much food to give the baby

Findings of the assessment in Western Province showed that the quantity of food given to a young child depends on various factors, such as the age of the child and the rate at which they finished the previous meal. In Ivakhale, mothers said that they do not have a standard measure for food given to young children and estimate amounts based on the size and age of the child. Mothers feed until a baby refuses to swallow any more food: *Then you can tell that he or she has had enough*. Moreover, they explained that babies and young children have various cues to indicate that they have had enough to eat. The body language of a child will tell when they have had enough food:

The baby might start shifting their head from side to side, not concentrating on what they are eating whenever you bring food near its mouth. Also when they have been given food to eat, they might start to pinch for chicken and dogs to eat, too. Other children will belch to show that they are satisfied. Those who are able to speak tell their mothers that they are already satisfied. FGD, Ivakhale

In Shivuli, mothers argued that quantities given to babies and young children depend on how the child eats:

You can determine by the quantities the baby eats daily. If they finish one cup today and the following day, you give two cups and then you keep adding as they desire more. If a child continues to cry after feeding, then you give more.

Focus group participants also said young children are most often fed using a cup referred to in the village as *Kikombe cha chai* (a tea cup). Grandmothers in Ivakhale said that mothers feed their babies using cups because they are much easier to handle. They said that they no longer use *khukakula* (the five finger method). Participants agreed that small babies do not eat much so they are given small portions. At 6 months, a baby will be fed about a quarter- to a half-cup, with the quantity increasing as the child grows. Other cues that were mentioned in Shivuli: After feeding, when the child is put down to sit or rest on the bed, the child does not cry. When the mother gives more, the baby refuses to swallow and spits out the food.

Key informants interviewed pointed out that young children in Western Province are force fed, using a method locally referred to as the five finger method. This entails scooping porridge into the palm and pouring it down the baby's throat while holding the nose.

Foods not considered suitable for babies and young children

In Eastern Province, some of the foods and fluids not given to children include ready-to-drink juices, sodas, or sour porridge. The juices are considered not good because of the chemicals that are used to preserve them, although at times, people may buy them (e.g., when going to the hospital). These foods are given depending on "the power of the pocket" and also to please children.

In Western Province, a longer list of foods was named as not suitable for young children:

- **Ivakhale:** Eggs, because they "make the tongue heavy," thus delaying the speech of the child, and sweet potatoes because they will constipate the child.
- **Shivuli:** As cited by grandmothers, sweet potatoes, cassava, and green maize because they will cause constipation and make the child's stool look like a sticky paste; a mixture of beans and maize, which can give the child a stomach ache; soda because it contains acid and chemicals that are not good for the child; and fermented porridge because it will cause diarrhea and a stomach ache.

Food preparation

Due to heavy workloads, mothers prepare food once a day for young children. Most mothers prepare porridge in the morning and store it in a flask for use throughout the day. This ensures that young children have a ready hot 'meal' whenever they are hungry. It is the food most commonly left with grandmothers when mothers are away from home. A mother in Western Province observed: *We cook once in a day and keep warming the food for the baby as the need arises.*

Mothers in both Karurumo and Kithimu also cook matoke in the morning. The food is stored in a covered *sufuria* (a cooking pot or container) and caregivers warm a little for each feeding; if any remains, it is given to older children because babies are not fed leftovers. Mothers rely on cues from the baby or young child to decide on amounts to give:

We give food according to the way the baby consumes. If the baby finishes what you give today, then tomorrow you add little more. Observe and continue adding the amount as the baby consumes. We start with a few spoons when a baby is very young and keep adding. FGD, Kithimu

Similarly, in Karurumo, focus group participants said that mothers know that the baby is full when the baby refuses to eat or spits out the food.

In Western Province, while there was some variation in how often food is cooked, like in the Eastern Province, the majority of mothers cook food for young children once—in the morning—then keep it in a covered container for use throughout the day. A mother in Ivakhale explained: *For the 6 months old baby, I just make once that's the porridge, then I keep in a flask which will serve me the whole day.* An adequate amount of porridge is also cooked once and stored in a flask that keeps the porridge warm until evening. A mother in Shivuli explained: *Sometimes depending on how the baby consumes the porridge, it can stay for the whole day, up to 8 pm, when they can take a cup before they sleep.* Some mothers prepare food three times a day, in the morning, at lunch, and in the evening, although these mothers were said to be in the minority.

Refusal to eat

In both Eastern and Western Provinces, both mothers and grandmothers felt that refusal by a baby to eat is construed to mean that the baby is sick. When a baby refuses to feed, initial action is to consult the grandmother. Mothers in Kithimu enumerated the various methods that are used to encourage young children who are reluctant to eat: some sing for them, carry them while feeding, or give food while continuing to breastfeed: *You suckle a little, then give one spoon, suckle again until the baby finishes the food.* And mothers were emphatic that when a baby completely refuses to eat despite these measures, they are fed by force.

In Western Province, the child may be taken either to a herbalist or a health facility, most often on the grandmother's advice. Some of the methods mothers use to encourage young children to eat include providing alternative foods or changing foods (e.g., giving milk or tea instead of porridge). Some mothers buy multivitamins tablets for the baby.

Feeding during illness

Mothers admitted that *there are some illnesses children get and we young mothers have no way of knowing until the grandmother/mother-in-law discovers and brings to our attention.*

Actions taken by mothers when a young child is sick include trying to establish the cause of the illness. For example, when a child has diarrhea, they check if the porridge given to the child was well-cooked, and if not, they withdraw the food and give well-prepared food. When the diarrhea persists, they seek medical attention. Mothers generally appeared knowledgeable about care practices for young children with diarrhea, although incorrect practices included giving extra

fluids: *When she has diarrhea, I keep feeding her and giving her plenty of water.* Babies are given water with some salt and sugar added. Mothers in Ivakhale said they continue breastfeeding when a child has diarrhea. In Shivuli, mothers said young children with diarrhea are also given a traditional herb which was said to be very effective, called *dawa kali*. If the diarrhea persists, then a child is taken to the doctor. However, it was also noted that some diarrhea is expected, such as when the baby is teething or when the moon is full. This is considered normal and no action is taken.

In Eastern Province, focus group participants said they continue giving mashed foods when a child has diarrhea, but potatoes are avoided, as they are thought to increase the diarrhea. Children with diarrhea are also given water with salt and sugar and sometimes rice water. Focus group participants in Kithimu explained that young children are breastfed more when they have diarrhea because they tend to eat less, and children with persistent diarrhea are taken to the hospital. As stated by one participant, *When a child is sick, you give them fruits. A sick child is not be given matoke made from bananas for it brings pus. We substitute the bananas with pumpkins.*

Sources of advice to women on childcare and infant and young child feeding

Health care providers

In Eastern Province, mothers, fathers, and grandmothers cited health care providers as the main source of information on nutrition of young children. Mothers receive information and advice on infant feeding from health care providers when they attend prenatal and postnatal checks. Interviews conducted with key informants at the local facilities confirmed that they offer general health education on nutrition of mothers and young children at various contact points, including the antenatal clinic and maternity and postnatal wards. Individual counseling sessions were observed for mothers attending the well-baby clinic in Karurumo. Some of the advice given by health workers that mothers find useful includes dietary advice: to eat good, nourishing food such as beans and vegetables.

Grandmothers

As expected, grandmothers emerged as a key source of advice to mothers in feeding of young children. A mother in Karurumo, Eastern Province, illustrated the point: *We listen to them because they are very experienced in child-rearing.* Grandmothers in Kithimu said they advise mothers on what to cook for young children:

As grandmothers, we advise them on the introduction of solid foods, how to cook different types of for babies, how to use the different ingredients to have a balanced diet. For example, when preparing mashed food, we advise them to add carrots, tomatoes, and greens to the potatoes and bananas. We also advise mothers to add milk and to use sorghum flour for porridge. Also, when a child starts to sit down by itself, you caution them that the infant should not eat soil because they will get intestinal worms. FGD, Karurumo

Grandmothers in Kithimu said they are happy with most advice given to mothers by community health workers on how to feed children and on the importance of exclusive breastfeeding. Some of the advice that grandmothers do not like includes advice from peers that infants should not be

held by the grandmother because they will become spoiled. This results in young mothers carrying the infants on their backs as they do their chores.

When asked if mothers usually follow their advice, a few grandmothers noted that *some mothers refuse to hear what we tell them since some of them have a lot of responsibilities. They argue that during our time, we did not have as many responsibilities as they do. Sometimes they ignore our advice, claiming turi a mbere ya computer* (we are old fashioned and belong to the pre-computer age). Grandmothers also lamented that mothers generally do not share the information they receive from the clinic: *We don't really know what they are taught.*

Community health workers

Mothers receive advice from community health workers when they conduct home visits and also through women's groups: *They come to our homes and advise us to take babies to clinics and also educate us on general hygiene in around the home and in care of young children.*

Peers

Mothers receive advice from other mothers: *When a young mother sees another woman with a healthy baby, they enquire and want to copy how that child is fed.* FGD, Kithimu

In Western Province, mothers said they receive advice on childcare from various sources, including churches, community health workers, community meetings, health workers, traditional birth attendants, and other mothers (peers). Mothers were asked about the types of advice they receive from these different sources, and the following were mentioned:

- Advice on the importance of attending the antenatal clinic during pregnancy.
- After giving birth, how to feed babies, from the matron at the clinic.
- How to dress comfortably during pregnancy.
- The importance of getting rest and avoiding heavy duties when pregnant.
- Advice on immunization and how to care for the baby.
- Advice from health workers to deliver in the hospital so that emergencies can be handled properly.
- Advice on PMTCT, which is especially helpful to HIV-positive mothers.
- Advice on the importance of multivitamins.

Participants in Shivuli pointed out that the types of advice given by grandmothers depends on their age; a younger grandmother will have different views from an older one because they are of different generations so their perspectives are different. Therefore, it is felt that grandmothers need to be educated on maternal and child nutrition through churches and community structures, such as the merry-go-round savings and investment groups to which many grandmothers belong.

Role of fathers in young child nutrition

Fathers were not cited by mothers as a source of information on child nutrition. Sometimes they enquire whether young children are given some foods, like fruits, which motivates mothers to look for fruits. Mothers lamented that fathers do not advise, saying, *They command us*. For example: *If the baby is crying, they ask why you are neglecting the child and order you to silence the baby*.

Asked about ways in which fathers help in the care of young children, mothers in both areas cited providing food for the family, clothes for the baby, and money for other needs in the home as fathers' primary responsibilities. Another way in which some fathers assist with childcare is by holding the child when the mother is cooking. Mothers clarified that generally, fathers do not hold very young children but those who do know what to do. When asked, fathers were emphatic that they do not cook or assist in feeding babies; this, they said, is a woman's work. The only exception is when the mother is sick.

Asked how fathers could be more helpful, mothers in Kithimu and Karurumo mentioned the following:

- Provide food for breastfeeding mothers, *since we are weak for some time after delivery*.
- Supervise farm workers so that mothers are more free to concentrate on their children.
- Work at casual labor to support the family.

Sources of advice to men on childcare and infant and young child feeding

Men in both Karurumo and Kithimu said that there are no specific forums at which they receive information or advice on childcare. Some access fliers from the clinic, brought home by their wives, and try to follow the advice given. The general advice they receive is on responsible parenthood: to bond with children and to learn about and provide the things children need. Community sources of information to fathers that were cited included:

- **Parents:** *My father tells me that I should know how the baby is faring. I should not leave the care of children to the mother only. He tells me that I should look for employment and not stay at home all the time, so that I can get money to buy milk for the child and also provide for the family.* Father, Shivuli
- **Community health workers** who attend group meetings and are given a few minutes to talk, courtesy of the women who are in the groups (although it was reported that generally men do not attend community meetings; an attendance ratio was given of ten women to every two men per meeting).
- **Churches:** Sometimes pastors give information on how to care for children.
- **Wives:** Men receive information from their wives, who have received it at clinics, seminars, and community meetings.
- **Radio:** The majority of fathers in both areas receive information from radio programs. Men listen to radio most often between 7 and 10 pm. Some programs emphasize family welfare and the importance of family members eating together, and others discuss health issues.

- ***Magazines and newspapers:*** Men read magazines and newspapers that are available in local hotels, where they relax after work, including *Taifa Leo*, *Daily Nation*, and *Parents* magazine.
- In Western Province, some of the same sources of information were reported, including:
 - Newspapers and magazines.
 - Handouts from the clinic and APHIA II community health volunteers.
 - Mass media, including radio; for instance, West FM runs APHIA II programs on pregnancy, family planning, and childcare (e.g., *Jua Afya Yako* [Know Your Health], which airs every Monday from 7:30 to 8:00 pm).
 - Church: Sometimes health experts are invited to speak on health issues.

Types of advice that men would like on childcare

In both Eastern and Western Provinces, when asked about which sources of information on childcare they would prefer, fathers said they would listen to advice from educators, peers with children of similar ages to theirs, health officers like nurses and trained community health workers, school teachers, community health extensions workers, and community health promoters. Fathers said they would like to receive information on:

- Disease prevention and infections that can affect young children.
- How they can combine efforts to raise money.
- How to keep a child comfortable at home and respect the parents.
- How to encourage children to do their work and be independent.
- How they can do well in school.

Discussion

The formative assessment covered several topics related to maternal, infant, and young child feeding and nutrition in both Eastern and Western Provinces, Kenya. This section focuses on how this information can be used to tailor interventions that work directly with fathers and grandmothers in these regions to enhance the feeding of pregnant and lactating mothers and children up to the age of 2 years.

Breastfeeding practices

In both provinces, initiation of breastfeeding is universal. Duration of breastfeeding for the majority of women is around two years, in line with WHO recommendations. These practices are positive and should be encouraged during the dissemination of information on infant and young feeding. However, women who become pregnant cease to breastfeed because of the widely held belief that it is inappropriate to breastfeed when pregnant. This could easily lead to malnutrition of the baby who is weaned, especially because supplementary foods given in place of breastmilk are nutritionally inferior. Exclusive breastfeeding for the first six months of life is rare. While mothers are aware of the MOPHS recommendation to breastfeed exclusively for the first six months, few women in either province practice this. The majority of mothers introduce other foods early on the advice of grandmothers, particularly when a baby cries often in the early months, which is regarded as an indication that breastmilk is insufficient. By 2 months of age, most infants are receiving water, thin porridge, and animal milk. These tend to replace breastmilk, predisposing the young infants to early onset of malnutrition, especially because the foods given are low in energy and vital nutrients. Another motivation is that when babies are fed porridge, they sleep for long hours, enabling mothers to attend to other responsibilities. Some mothers are afraid to breastfeed exclusively for the first six months because it may be taken to mean they are HIV positive. Lack of support for mothers to breastfeed exclusively, especially from grandmothers and male partners, is a major factor in the low uptake of the practice in both provinces. These malpractices, despite apparent knowledge of recommended practices, point to the need for behavior change strategies in the promotion of appropriate practices and improved social support for mothers. Although breastfeeding is a natural act, it is also a learned behavior. Evidence shows that virtually all mothers can breastfeed provided they have accurate information and support within their families and communities and from the health care system.

Complementary feeding practices

While mothers in both provinces are knowledgeable on recommendations related to breastfeeding, they have much less awareness of recommended complementary feeding practices. This may derive from the fact that major emphasis in the country through advocacy and training of community health workers by the MOPHS and partners has largely focused on promotion of appropriate breastfeeding practices. As discussed above, supplementary foods are introduced much earlier than the recommended age of 6 months. Discussions held with men and grandmothers revealed limited knowledge on the appropriate age of introduction of complementary foods. Both fathers and grandmothers said that other foods are necessary in addition to breastmilk during the first six months. To achieve timely introduction of complementary foods, dialogue focused on hindrances to exclusive breastfeeding for six months

identified by the formative assessment, such as poor maternal diet, perceived insufficiency of breastmilk, and frequent crying as a trigger for introduction of other foods too early, will be important. These practices are culturally determined and are not in line with the recommended practices.

Generally, it was reported that young children eat the same foods as the rest of the family, but with some modification. Generally, diets of young children are limited to what is available to a household. The rampant household food insecurity will be a challenge and should be kept in mind when planning interventions to improve feeding practices of children in the target communities. This explains why maize meal porridge is the main food given to children younger than 2 years. The consistency and ingredients used however increase with age. By the age of 6–8 months, babies are fed mashed potatoes and bananas softened with soup and multi-mix porridge comprising maize, soya beans, sorghum, millet, and sardines milled together. The diets of young children rarely include fruits and vegetables, thus are limited in micronutrient content. The dietary diversity indicator is based on the premise that the more diverse the diet, the more likely it is to provide adequate levels of a range of nutrients. While mothers reported feeding young children on demand, probing revealed that infants and young children subsist on maize meal porridge most of the day, feeding on solid meals only two or three times a day. Children are generally fed fewer times than what is recommended because of lack of food.

Discussions on methods of food storage revealed that most mothers prepare food for young children once a day. Although mothers said it is stored covered, there was no way to verify this. Of special concern is the practice of cooking porridge once a day and storing it in a flask for use throughout the day. The composite flours used and milk added present a good opportunity for multiplication of harmful microorganisms in the semi-warm environment of a flask. Food safety will need to be addressed.

While children less than 12 months of age are assisted during feeding, those 12–24 months of age feed themselves or are fed by force.

Both positive and negative practices are exercised during child illness. Positive practices include continued breastfeeding and giving increased amounts of fluids, particularly during diarrhea. On the contrary, the practice of withdrawal or dilution of milk given to a sick child denies the child the much-needed nutrients to boost the immune system against further infections. Withdrawal of solid foods during diarrhea exerts the same effect on the child. Fruit juices were viewed to be particularly suitable during illness. The positive practices should be encouraged, while the negative ones should be discouraged in the promotion of infant and young child feeding.

Maternal nutrition during pregnancy and lactation

Overall, maternal diets during pregnancy and lactation are inadequate. Generally, diets of pregnant and breastfeeding mothers do not differ from those of other women in the community. The only period women receive special support and improved diets is within two to three weeks after delivery. Inadequate diets are a likely contributor to the low levels of weight gain and anemia among pregnant women, as reported by health workers during the assessment to be a common problem. It is noteworthy that men, women, and grandmothers acknowledged the

importance of a good diet for women during pregnancy and breastfeeding; however, poverty leading to rampant household food insecurity is a key cause of poor diets.

While men acknowledged that it is their role to ensure women receive a nutritious diet, they lack information on appropriate dietary needs of pregnant and breastfeeding women. This is exacerbated by the fact that they do not accompany their wives to the clinic and have limited avenues from which to obtain information on maternal diets. Discussions held with men revealed that they view themselves as providers. This could form a good entry point in male engagement dialogue sessions toward motivating men to provide nutritious foods for their wives. Men could also become advocates for good maternal nutrition among their peers in the community.

Along with poor dietary practices, the heavy workload of women during pregnancy is a contributor to low weight gain, which was cited as a challenge by health care providers in both provinces. Men and grandmothers, who are instrumental in decision-making on labor allocation in the family, will need to be sensitized on this aspect, with a view toward enlisting their support to women. Men's ideas should be tapped to identify a specific way in which they can assist mothers in the last trimester and after delivery with labor-intensive activities.

Cultural influences on diets of pregnant and breastfeeding mothers are rife. Positive practices such as the promotion of traditional foods believed to be “strong” and to increase production of breastmilk should be encouraged. Conversely, myths and taboos that continue to prohibit consumption of foods such as eggs and chicken by pregnant women among the Luhya of Western Province will need to be discussed.

While supplementation of vitamin A, which is tied to the immunization schedule for children younger than 5 years, is fairly widespread, supplementation of postpartum women with vitamin A is generally poor. Few women understand the benefits of supplementation, nor do health workers adhere to the MOPHS recommendation to provide supplements to women who deliver or attend postnatal care within six weeks after delivery. Supplementation with ferrous sulfate is also irregular due to inadequate supplies. This is a missed opportunity for a much-needed boost to the generally poor diets of women. It predisposes pregnant and lactating women to malnutrition and inadequate nutrients in breastmilk. Building awareness around this should be a priority when engaging men and grandmothers around issues of improved maternal nutrition. This would lead to increased demand for the supplements.

Table 1. Maternal, infant, and young child feeding practices and associated beliefs and attitudes.

	Good practices and positive attitudes	Poor practices and cultural influencers
Breastfeeding	<ul style="list-style-type: none"> Breastmilk is recognized as important for growth and is regarded as the food of choice in the early months of an infant's life. Initiation of breastfeeding is almost universal. Total duration of breastfeeding is around two years. Most children are breastfed on demand. 	<ul style="list-style-type: none"> Exclusive breastfeeding is rarely practiced. Breastmilk is replaced by bulky, low-energy, low-nutrient substitutes. There is a widespread belief that breastmilk is insufficient to sustain a baby for the first six months. Fathers and grandmothers believe that exclusive breastfeeding for six

	Good practices and positive attitudes	Poor practices and cultural influencers
	<ul style="list-style-type: none"> Breastfeeding continues alongside complementary feeding in both provinces. 	<ul style="list-style-type: none"> months is not feasible and do not support it. Breastfeeding for six months is associated with being HIV positive. Breastfeeding is halted when a mother becomes pregnant. A mother's multiple responsibilities and usual diet are not compatible with exclusive breastfeeding.
Complementary feeding	<ul style="list-style-type: none"> Milk is an important component of young children's diets. Efforts are made to respond to cues for hunger among young children. Fathers occasionally provide special foods for young children. Mothers are knowledgeable on the need to feed young children a variety of foods. Mothers make an effort to give enriched porridge to young children. Most children receive vitamin A supplementation from six months. Grandmothers are very supportive and keen to ensure that young children are well-fed. 	<ul style="list-style-type: none"> Early introduction of supplementary foods (0–3 months) is common, including water, cow's milk, and thin maize meal porridge. Cooked foods are not safely stored and stored for too long. Diets are predominantly starchy and lack variety, especially in Western Province. Force feeding of young children in Western Province is a norm. The frequency of feeding is low. Fluids are fed using plastic cups with spouts. Unsupervised feeding of young children common.
Maternal diet and utilization of health services by pregnant and breastfeeding mothers	<ul style="list-style-type: none"> Efforts are made to eat iron-rich foods (meat and dark green leafy vegetables), which are encouraged by health workers. There is strong consensus among mothers, fathers, and grandmothers on the importance of a good diet for pregnant and breastfeeding mothers. Dietary advice is given to pregnant women through group health talks. Traditional foods are perceived as good for milk production and encouraged. There is good attendance at postnatal clinics. 	<ul style="list-style-type: none"> Diets of pregnant and breastfeeding mothers are largely the same as for the rest of the family. Provision of special foods by fathers is limited to the first weeks after delivery. Pregnant and breastfeeding mothers have heavy workloads. There is limited attendance at antenatal clinics by pregnant women (one or two times). Fathers do not accompany their wives to antenatal and postnatal visits. Vitamin A supplementation for postnatal mothers is low. Supply of iron/folic acid tablets is erratic, and there is low adherence to taking them among pregnant women.

The following table provides a summary of the main reasons given by women, men, and grandmothers for the inappropriate practices and negative attitudes. These will need to be targeted and discussed through dialogue groups with fathers and grandmothers, as they are currently fueling the poor maternal dietary and complementary feeding practices for children younger than 2 years.

Table 2. Summary of practices and beliefs on breastfeeding, complementary feeding, and maternal nutrition.

Breastfeeding	
Issue/Problem	Reasons
Exclusive breastfeeding rarely practiced	<ul style="list-style-type: none"> • Maternal diet: Grandmothers and mothers have the perception that mothers do not have the means to eat well enough to be able to breastfeed exclusively for six months. • Influence of grandmothers: The majority of mothers attribute pressure to give water and other foods early to grandmothers, who insist these are necessary. • Maternal workload: Mothers are unable to produce enough breastmilk because of doing hard work and not getting enough food to eat. • Separation: Some mothers go for casual jobs, leaving babies behind with other caregivers, and do not express breastmilk because it cannot be warmed and they fear it might become contaminated. • Inadequate milk: Mothers, fathers, and grandmothers believe that breastmilk is not adequate for a baby for six months, evidenced by frequent crying even after breastfeeding. • Crying: Babies who cry often in the first six months are perceived to be hungry and are given other foods.
Complementary feeding	
Issue/Problem	Reasons
Early age at introduction (supplementary foods comprising water, cow's milk, and thin maize meal porridge introduced by 3 months)	<ul style="list-style-type: none"> • Belief among grandmothers that while breastmilk is good, it is not entirely adequate for six months. • Lack of social support for exclusive breastfeeding by grandmothers and peers. • Inadequate knowledge among fathers of recommendations on exclusive breastfeeding.
Foods given (amounts and diversity)	<ul style="list-style-type: none"> • Diets of young children are limited to foods available and consumed in a household, which are often limited in diversity. • Inadequate knowledge of proper feeding of young children, attributed to low levels of education of most mothers, who are the primary caregivers. • Strong influence of grandmothers, who sometimes contradict health worker messages to mothers on ways of feeding young children. • Poverty, prompting families to sell nutritious foods such as beans and milk in order to purchase foods such as rice, sugar, wheat flour, and cooking fat. • Young mothers typically do not join women's groups, where they could gather information from other mothers.
Frequency of feeding	<p>Low feeding frequency of children younger than 2 years is occasioned by:</p> <ul style="list-style-type: none"> • Limited access to a variety of foods due to poverty. • Maternal work (mothers who work at casual labor and leave only porridge to feed their child). • Inadequate motivation and appreciation of the importance of frequent feeding.
Safety and hygiene	<ul style="list-style-type: none"> • Preparing food once a day and storing it to feed young children throughout the day is a coping strategy employed by mothers who have competing priorities. • Young children are often left unattended or under the care of other children. • Inadequate knowledge of the dangers of long storage of food in semi-warm states.
Responsive feeding	<ul style="list-style-type: none"> • Force feeding, which is attributed to inadequate time for busy mothers. • Ability to respond to cues for hunger is limited to availability of food.

Maternal diet during pregnancy and lactation	
Issue/Problem	Reasons
Poor diet	<ul style="list-style-type: none"> • Lack of awareness by men of the importance of improved diets for pregnant and breastfeeding women. • Poverty and household food insecurity, which leads to limited access to foods women know are good. • Cultural beliefs and taboos prohibit consumption of certain nutritious foods by women during pregnancy, such as eggs, chicken, and ripe bananas among the Luhya of Western Province. • Pregnancy and breastfeeding are normal functions of women, so there is no need for a special diet during those periods. • Limited familial and community support for women during pregnancy and after delivery, which leads to heavy responsibilities that deplete energy. • Men do not accompany women to clinics for pre- and postnatal care and so are largely uninformed about dietary requirements of pregnant and lactating women.

Roles and responsibilities of men in maternal, infant, and young child feeding

Discussions held with men and key informants revealed that the culturally defined role of fathers entails providing for the family (food, clothing, shelter, health, security) and the moral upbringing of children as disciplinarians in the home. Findings of the assessment nonetheless showed that on issues of childcare and feeding, men believe the counsel of their mothers (grandmothers) more than their wives because they believe their mothers are more experienced in childcare. It is noteworthy that despite the cultural limitations imposed on them in terms of their role in childcare, men expressed interest in obtaining information that can enable them to support good health and nutrition of the young children in their families. A community leader in Western Province observed that *they yearn for information on child-rearing but are concerned that accompanying their wives to the clinic or for seminars on such issues will make them appear as weak.*

Men in both provinces hold the view that to breastfeed successfully, mothers must eat a well-balanced diet to produce milk and to have enough energy to do their work. More importantly, fathers regard provision of adequate food for pregnant and breastfeeding mothers as their responsibility. Although lack of money was cited by men as a common challenge to providing an adequate diet for women, this belief should be used as an entry point to encourage men to fulfill their obligations to provide a nutritious diet for their wives. Further, this can be linked to men's perception that poor diets prevent women from breastfeeding exclusively for the recommended six months: *The type of foods that our women eat cannot enable them to breastfeed exclusively. Our women are not strong enough.*

Men generally have poor knowledge of recommended feeding practices for children and women. In all areas, men asserted that exclusive breastfeeding for the first six months of life is not feasible. This can be attributed to the fact that there are no specific forums at which men receive information or advice on childcare. Most initiatives that address maternal and child health at the community level involve women as primary caregivers. Such initiatives focus on women mostly through existing community structures such as women's groups. In addition, men generally do not accompany women to the clinic, which is the other key source of information on maternal, infant, and young child feeding. They do not see the need to do so because they are busy, and

moreover, *they have no business at the clinic*, since it is the wives and children who are examined and questioned. Few men follow up to find out the outcome of a visit to the clinic by their wives. Some men however encourage mothers to attend the antenatal clinic and ensure that recommendations given related to the health of young children, such as immunizations, are followed.

It will be important to provide fathers with information and allow dialogue on the rationale for key recommendations on feeding of young children. In doing this, it will be worth remembering that men emphasized that they would like to engage and be taught by “experts.” Discussions held with fathers revealed that men listen to and respect people who are perceived as knowledgeable or professionals on issues of health and nutrition. They generally will not listen to someone, unless they know the person has received some training and “knows what they are talking about.” It is noteworthy that just like other members of the community, men hold certain myths about feeding young children that need to be addressed through awareness-raising.

Sources of information on childcare for men include occasional flyers brought home from clinics by women, radio programs on health, newspapers/magazines, and sometimes church. Trusted sources of information for men include health officers like nurses and trained community health workers, school teachers, community health extension workers, and community health promoters.

Roles and responsibilities of grandmothers in the family and the feeding of young children

As well as running their own homes, grandmothers provide support to daughters-in-law in caring for the family and general family life:

As a grandmother in the home, you are the planner. You ensure there is order in the home, and see to it that there is a constant supply of food in the shamba [garden]. As elderly women in the home, we also give directions and advice to our daughters-in-law on how to take care of their husbands and families. Grandmother, Kithimu

Grandmothers are also actively involved in supporting and providing for their sons’ families, financially and in-kind. This is because increasingly, many young people start families without a reliable source of income and heavily rely on grandparents for their livelihoods.

Findings of the assessment showed that grandmothers in both provinces are also frontline caregivers of young children, and powerful influencers of decisions related to the general care and feeding of young children. They are the main alternative caregiver in the mother’s absence. They provide general oversight and care for infants and young children in the community, ensuring they are safe, bathed, and fed. Further, grandmothers are central in decision-making on issues related to food preparation and feeding of young children, health care (recognizing signs of illness and advising on a course of action when a child is sick), family livelihood (food production), and spiritual nurturing: *Once she gives birth, I tell her that the child is for both of us. I show her how to bathe, change, feed, and take care of the baby.*

Discussions with mothers and grandmothers revealed that grandmothers play a key advisory role on a wide range of issues within the extended family. They feel that it is their responsibility to

advise and guide mothers in the running of the family. Mothers (especially young ones) also seek and take advice given by grandmothers seriously. Given their very influential position in the extended family, grandmothers are a strategic entry point in seeking to improve infant feeding practices in the target areas. It is important to keep in mind, however, that not all mothers take the advice of grandmothers; some regard them as old fashioned. Others are unwilling to leave their children in the care of grandmothers, arguing that they are dirty. In Eastern Province, mothers dislike grandmothers' practice of chewing roasted bananas to mash them and then giving them to young children on the grounds that it is unhygienic.

Grandmothers have inadequate knowledge on recommended complementary feeding practices. This was shown in some of the cues they use to decide that an infant is ready to eat solid foods. Their belief that breastmilk alone is not adequate to satisfy a baby for the first six months fuels early supplementation with animal milk, porridge, and water in both provinces. Grandmothers in Eastern Province advise that meat should not be given to children before 2 years. In Western Province (Ivakhale), they said that age at introduction of other fluids depends on how hungry the baby is. They recommend that water should be given at 1 month, while cow's milk should be given at 2 weeks because mother's milk is not enough.

There were notable differences between grandmothers' and health workers' recommendations on feeding of infants and young children. While some grandmothers were aware of the recommendation to breastfeed exclusively for the first six months, all agreed that water, animal milk, and thin porridge are necessary by the third month of a baby's life. Because of their powerful position in the family, coupled with the backing paternal grandmothers receive from their sons, they push for introduction of these foods even when mothers intend to breastfeed exclusively as advised by health workers. This presents a dilemma that needs to be addressed when engaging grandmothers. Further, the assertion by grandmothers that reducing maternal workload of women during pregnancy renders them lazy has probably contributed to the same belief among fathers, who respect their mothers' perspectives on many issues.

Women feel that for men to be more helpful, they need awareness on their role in childcare and supporting women with responsibilities in the home. They suggested that men be reached through chief barazas (social gatherings), churches, or organized meetings before they go for busaa (local brew). Women in both areas said they do not receive any advice from men on childcare issues. Other suggestions given:

- Mothers should share with men the information they receive from support groups.
- Men should be helped to form their own support groups, such as father-to-father groups on infant feeding and maternal nutrition. They should be taught by other trained men how to take care of their families and support their wives and children.

Recommendations

Engagement of grandmothers

- Grandmothers should be engaged in dialogue on the issues of maternal, infant, and young child nutrition within the context of grandmother groups. As custodians of cultural knowledge, it will be important to adopt a consultative approach in working with grandmothers and seek to build on some of the positive practices of feeding young children identified through this assessment.
- Interventions to improve complementary feeding among young children in target areas should build on the positive behaviors and practices around feeding of infants and young children identified through this assessment and correct any misperceptions that may be perpetuated by grandmothers.
- Efforts at the household and community levels to improve feeding of young children should emphasize the use of local foods. While traditional vegetables are widely used in Western Province, they are hardly used in children's dishes. Grandmother groups can be encouraged to exhibit nutritious complementary foods during family bazaars (community meetings) to promote community uptake of good practices.
- Initial training of grandmothers will need to address recommendations for infant and young child feeding; in particular, early introduction of foods and fluids other than breastmilk before 6 months of age.
- Interventions targeting grandmothers need to incorporate and build on the community's positive practices related to maternal diets identified through this assessment. A starting point could be a review and guided dialogue on specific foods identified by the community during the assessment as good for increasing breastmilk production when consumed by mothers.
- Both fathers and grandmothers have a negative view on the recommendation to women to reduce work during the last trimester. In addition to advocacy for improved diets for women, it will be important to dialogue on this issue and generate consensus on specific ways in which men and other family members can relieve women of onerous labor during the last trimester and after delivery.
- Grandmothers should be told about the benefits of micronutrient supplementation for both the mother and the infant, and the importance of their support to the mother to comply with regular consumption if needed.
- Grandmother groups and networks, once established, should be encouraged to visit newly delivered mothers in the community and encourage support for proper breastfeeding practices, rest, and a good maternal diet. This would serve to reinforce messages given at health facilities, while gifts of local nutritious foods to the mother would be a practical way of providing support.
- Grandmothers traditionally communicate through songs and dances, which presents an opportunity to disseminate information and ideas on young child feeding to the rest of the community. Individual groups with their mentors should be encouraged to creatively

compose songs, poems, and dances in praise of proper feeding as a means to healthy, well-nourished children. These innovations should be celebrated during biannual family bazaars.

- Organized visits by grandmothers to homes with newborn babies to support and give key messages on appropriate feeding would serve to raise the profile of infant feeding issues and begin to challenge widespread malpractices such as early introduction of diverse foods.
- Family bazaars will provide a forum for various groups to showcase their innovative strategies in encouraging uptake of proper feeding practices. Bazaars can also be used as an opportunity to exhibit various ways of preparing nutritious complementary foods using locally available ingredients.
- In addition to support to their daughters or daughters-in-law, grandmothers in support groups should be encouraged to share new knowledge learned with their peers and other women in the community. Social forums in the community would be a useful entry point in the promotion of proper feeding practices for young children.
- Recognition and support of grandmother groups by the local administration will boost their morale and legitimize their efforts in the eyes of the community. This is especially important because grandmothers are often regarded as obstacles to uptake of critical health messages.
- Grandmothers should be encouraged to accompany mothers to the clinic whenever possible. This will provide an opportunity for them to engage with a respected source of information on child feeding.
- While promotion of proper feeding practices of young children is key, groups of grandmothers should also be encouraged to propose other activities that could enhance group cohesion and sustainability.
- Ongoing support for group mentors by community health workers and community health extension workers will facilitate linkage of these community-based activities with health facilities and allow for monitoring of progress.

Engagement of men

- Men should be engaged in dialogue on the issues of maternal, infant, and young child nutrition within the context of men's groups as well as other activities.
- Men are typically preoccupied during the day with earning a livelihood, mostly through engagement in casual labor. Building consensus on appropriate meeting times and frequency of meetings with them will be important, to ensure their concerns about busy work days are addressed. This may mean planning meetings during non-working hours.
- Based on the assertion that came from the assessment that men listen to men, interventions for engagement of men should seek to engage well-trained male facilitators. These need to be fathers of young children to enlist the respect of other men.
- The programmatic experience of APHIA II in working with men in Western Province showed that sustaining men's interest in group-based activities for more than a few months is a challenge. A key recommendation from discussions held with men is that a practical component alongside dialogue on maternal, infant, and young child feeding will serve to

enhance and sustain interest in the male engagement agenda. Men involved in this study should be encouraged to come up with activities of interest.

- One of the strategies that can be encouraged and strengthened to increase male involvement in support of improved complementary feeding is mobilization of men to buy special foods for young children. This should be supplemented with dissemination of information on foods that are nutritious for young children.
- Interventions targeting men should build on the community's positive practices related to maternal diets. A starting point could be a review and guided dialogue on specific foods identified by the community during the assessment as good for increasing breastmilk production when consumed by mothers.
- Men expressed interest in and eagerness to learn more and play a greater role in maternal and child nutrition, and should be encouraged to provide nutritious foods for their wives during pregnancy and breastfeeding. This would be feasible since it is in line with their culturally defined role of providing for the family. A major motivation for men would be a rationalized explanation of the role of good maternal nutrition and health consequences for the baby and mother of a poor diet during these times.
- Both fathers and grandmothers have a negative view on the recommendation to women to reduce work during the last trimester. In addition to advocacy for improved diets for women, it will be important to dialogue on this issue and generate consensus on specific ways in which men and other family members can relieve women of onerous labor during the last trimester and after delivery.
- Micronutrient supplementation for women during pregnancy and lactation is critical, given the generally poor diets consumed against heightened requirements. Men need to understand this and support women to adhere to taking iron and folate supplements.
- While men feel strongly that accompanying women to the clinic is not their business, it may be worthwhile to encourage them to give this a chance, as a way of strengthening support for the good health of their wives and children. This will expose them to health and nutrition interventions and has the potential to increase adherence to recommended feeding practices in the family. To achieve this, the IYCN Project should encourage health facilities to implement men-friendly services.
- Male engagement on issues of young child nutrition will be enhanced by engaging the local administration to accord public recognition to the initiative. This will further serve to publicly affirm the involvement of men in interventions to improve young child health and nutrition, which traditionally is regarded as a women's issue.
- Approaches and concerns raised by men through this assessment should guide the design and implementation of interventions for engagement of men. These include planning for brief focus meetings, scheduling of meetings after work, use of take-home materials such as brochures, and using experts or well-trained resource people to train men.
- Dialogue groups that have been used by APHIA II in Western Province are recommended as an entry point for other interventions involving men. These will provide a consultative forum that allows men to learn as they contribute ideas and rationalize new information.

- Men involved in this study should be encouraged to be agents of change in the community among their peers for increased male involvement in promotion of good maternal and child nutrition. This can be achieved through periodic family bazaars.

Maternal nutrition

Awareness on the importance of a good diet for mothers during pregnancy and breastfeeding needs to be emphasized at the household and community levels, as currently, it is not a priority in either province. Information and dialogue on specific ways that men and grandmothers can support women to eat nutritious foods will be critical.

Interventions targeting men and grandmothers need to incorporate and build on the community's positive practices related to maternal diets identified through this assessment. A starting point could be a review and guided dialogue on specific foods identified by the community during the assessment as good for increasing breastmilk production when consumed by mothers.

Men should be encouraged to provide nutritious foods for their wives during pregnancy and breastfeeding. This would be feasible since it is in line with their culturally defined role of providing for the family. A major motivation for men would be a rationalized explanation of the role of good maternal nutrition and health consequences for the baby and mother of poor diet during these times.

Both fathers and grandmothers have a negative view on the recommendation to women to reduce work during the last trimester. In addition to advocacy for improved diets for women, it will be important to dialogue on this issue and generate consensus on specific ways in which men and other family members can relieve women of onerous labor during the last trimester and after delivery.

Micronutrient supplementation for women during pregnancy and lactation is critical, given the generally poor diets consumed against heightened requirements. Grandmothers and men need to understand this and support women to adhere to taking iron and folate supplements. Mothers also need to understand the importance of postpartum vitamin A, and health facilities need to give it routinely as per MOPHS guidelines.

Grandmother groups and networks, once established, should be encouraged to visit newly delivered mothers in the community and generate support for proper breastfeeding practices, rest, and a good maternal diet. This would serve to reinforce messages given at health facilities, while gifts of local nutritious foods to the mother would be a practical way of providing support.

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