Ministry of Health
Kenya

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KENYA

RAPID QUALITATIVE ASSESSMENT

Beliefs and attitudes around infant and young child feeding in Kenya

JANUARY 2011

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Acknowledgments

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CBO	community-based organization
CCC	comprehensive care clinic
CHW	community health worker
DNO	District Nutrition Officer
DPHN	district public health nurse
FBO	faith-based organization
FGD	focus group discussion
HIV	human immunodeficiency virus
IYCN	Infant & Young Child Nutrition Project (USAID's flagship project)
MCH	maternal and child health
MOH	Ministry of Health
NARESA	Network of AIDS Researchers of East and Southern Africa
NGO	nongovernmental organization
PATH	Program for Appropriate Technology in Health
PMTCT	prevention of mother-to-child transmission of HIV
TBA	traditional birth attendant

Executive summary

With funding from the United Nations Children's Fund Kenya Country Office through PATH, the Network of AIDS Researchers of East and Southern Africa (NARESA) carried out a rapid assessment of beliefs and attitudes around infant and young child feeding in 11 districts in Kenya. This work was conducted in collaboration with the Ministry of Health (MOH) Division of Nutrition.

This report represents findings from Central, Coast, Eastern, Nairobi, Nyanza, Rift Valley, and Western Provinces. The districts were randomly selected, but efforts were made to represent diverse areas. The assessment was carried out to respond to gaps identified in a literature review that was conducted by Faith Thuita (University of Nairobi) in June 2008 and to ascertain the realities of infant and young child feeding in Kenya.

The objectives of the assessment were to:

1. Describe the key influencers of infant and young child feeding practices.
2. Examine the barriers or constraints (social, cultural, religious) to the uptake of recommended practices.
3. Find out the types of foods used for complementary feeding and the age of the child when these foods are introduced.
4. Ascertain feasible and effective channels for promoting recommended practices in the regions under study.

The methods used for data collection were:

- Community mapping.
- Free listing.
- Focus group discussions (FGDs).
- Key informant interviews.

The study population included younger mothers (ages 18–25 years), older mothers (ages 26–40 years), fathers of young children, grandmothers, community health workers (CHWs), traditional birth attendants, nurses in charge of comprehensive care clinics and maternal and child health clinics, women's leaders, and representatives from community-based, faith-based, and nongovernmental organizations dealing with child survival issues. The tools used included guides on conducting community mapping, free listing, FGDs, and key informant interviews, developed by NARESA and PATH in consultation with the MOH Division of Nutrition.

Summary of findings

Key influencers of infant and young child feeding practices

Infant and young child feeding practices are influenced by household-level factors, social networks, and health institutions (both modern and traditional). The most influential advisor was

based on the age of the mother, the category of respondent, and the geographical area under study. Social influence around infant feeding is significant.

The most trusted source of information was the health worker in a facility, yet this source was least consulted and was usually consulted as a last resort. CHWs were the most accessible and were widely consulted. In all areas, participants reported mothers-in-law, husbands (for mothers 18–25 years old), and friends/peers (for mothers 26–40 years old) as the most influential advisors.

Barriers to uptake of recommended infant and young child feeding practices

The MOH recommends that women start breastfeeding within the first 30 minutes of birth, breastfeed exclusively for the first six months of a child's life, and introduce complementary foods at 6 months, with continued breastfeeding into the second year of a child's life and beyond.

Adherence to MOH guidelines was generally reported as low in all areas, despite demonstrated awareness by participants that breastmilk contains complete nutrition for the baby. The reasons suggested for these findings were:

- In all areas, exclusive breastfeeding for six months was not perceived as feasible because of maternal workload and family demands. Despite working outside the home, women do not commonly express breastmilk.
- Where food was insecure, mothers believed that breastmilk would be inadequate in quantity and quality. In all areas, it was believed that to exclusively breastfeed, a mother needed adequate food.
- The early introduction of certain foods was perceived to contribute to faster child development. Giving solid foods early symbolically meant adequate care in some areas.
- A baby crying was linked only to the idea of the baby being hungry.
- There is a cultural perception that breastmilk is not enough to meet a child's needs during the first six months of life.
- A woman who delivered at home and had problems during delivery would not initiate breastfeeding within the first 30 minutes of birth. The child would be given prelacteal feeds instead.
- Health workers do not regularly disseminate information about the MOH guidelines. In this assessment, nearly all of the CHWs did not believe that exclusive breastfeeding is possible for the first six months of a child's life.
- It is traditional to give prelacteal feeds to clean the stomach.
- Younger women were afraid their breasts would sag or become too big from breastfeeding.
- Exclusive breastfeeding for six months is associated with strategies for prevention of mother-to-child transmission of HIV (PMTCT) and not the nutritional benefits of breastfeeding. Mothers sometimes introduce other foods so that people do not assume they are HIV positive.

- There is a lack of social/community support in relation to exclusive breastfeeding. A woman who does not engage in economic activities (e.g., a stay-at-home mother) is sometimes perceived as lazy, while those who go out to work are idealized as hardworking.

Factors influencing infant and young child feeding practices

When asked about how they feed their children, mothers cited social and economic factors as the most influential for infant and young child feeding practices. Mothers did not report cultural and religious factors as being significant in the way they fed their children. Social factors included peer pressure to introduce foods early and general lack of community support for optimal infant and young child feeding practices. Age of the mother was a social factor in the sense that younger mothers looked to older mothers for guidance, but often the older women had incorrect information. Other social factors were marital abuse and stress. Economic factors included lack of monetary resources to purchase food, which led to food insecurity issues. This was linked to high unemployment rates and poverty levels. There was a belief that if the mother's diet was insufficient, the breastmilk would be inadequate.

Male involvement in infant and young child feeding

Fathers were found to hold some power over infant feeding because of the financial assistance they provided, although the responsibility of feeding was left to the mothers.

Infant and young child feeding within the context of HIV

Messages in relation to infant and young child feeding within the context of HIV were clear. Exclusive breastfeeding for six months was perceived as a strategy for PMTCT and not as a nutritional benefit. The communities had clearly received messages on the dangers of mixed feeding for HIV-positive mothers but not for HIV-negative mothers.

Feasible and effective channels for promoting adequate practices

Participants mentioned face-to-face communication and the media as effective channels for reaching them with infant feeding information. Suggested face-to-face communication channels included talks at health clinics, seminars, support groups, chiefs' barazas, and churches. The media channels reported included radio, television documentaries, mobile telephone text messages, theater, and take-away recorded cassette messages accompanied by information, education, and communication materials.

Summary of recommendations

The consequences of poor infant and young child feeding do not seem to be clear to the communities. Mothers and all community members need clear and consistent messages and encouragement on MOH guidelines at the household level, in social networks, and at health facilities. There is need for accurate information on infant and young child feeding to correct the misconceptions and misinformation provided by the many "advisors" (all those who give information) in the community. If possible, the source of information should be the same, and in particular, come from health care workers and CHWs.

Breastfeeding counselors who have a positive attitude toward exclusive breastfeeding and believe it works should be incorporated at provincial and district hospitals, with an aim of

reaching the community with the relevant messages and influencing the right practices. Mothers who have succeeded in exclusively breastfeeding can be used as role models within the community. Provincial hospitals can serve as lactation centers, where capacity-building of health workers and CHWs is done, with an aim of influencing communities with optimal infant and young child feeding practices.

Both interpersonal communication and media activities (print and non-print) should be adopted to reach the whole community. Key exclusive breastfeeding messages should include the following approaches:

- Emphasize the benefits of exclusive breastfeeding, including the nutritional, protective, emotional, and cognitive development value. Repackage the messages to speak to what is idealized within the community.
- Offer assurance that breastmilk is sufficient for the baby even in cases of food insecurity. Women need to understand that even when they lack food, their breastmilk is still adequate to sustain child growth and development.
- Explain the importance of colostrum for immunity and protective purposes. This point can be linked with the ideal time to initiate breastfeeding.
- Illustrate the dangers of introducing prelacteal feeds.
- Address the perception that exclusive breastfeeding is for PMTCT. Emphasize the nutritional benefits of exclusive breastfeeding, and remove its association with HIV-positive women.
- Educate mothers on the physiological benefits of breastfeeding, targeting young mothers who choose not to breastfeed for cosmetic reasons.
- Promote breastmilk expression, and educate women on how to express and store breastmilk.
- Address the misconception that when a baby cries, it always means hunger. Illustrate the possible reasons why a baby cries and the actions to take if the crying persists.

Key complementary feeding messages should:

- Address the misconception that early introduction of foods helps the baby learn to eat.
- Clearly illustrate introduction of complementary foods by developmental stage. Include what to introduce when, based on what is available in the geographical area.
- Address the benefits and risks of commercial cereal mixes that are used for making porridge.
- Provide information on food enrichment and food consistency during weaning. Describe the best supplements to enrich a child’s food as well as the best consistency based on the age of the child.
- Address hygiene and food safety issues during infant feeding, such as handwashing, utensil storage, leftover food storage, and water treatment.

1. Introduction

Poor infant feeding practices, and in particular, low levels of exclusive breastfeeding in the first six months of life contribute to poor child survival rates. The Kenya Ministry of Health (MOH) and the World Health Organization currently recommend exclusive breastfeeding for the first six months of a child's life for optimal growth and development. Complementary feeding should start at 6 months, when breastmilk is no longer sufficient to meet the nutritional needs of growing infants, with continued breastfeeding well into the second year of life. When complementary food is introduced before 6 months, children are vulnerable to malnutrition due to inappropriate diets during this transitional phase.

An immediate strategy to address childhood malnutrition is ensuring appropriate breastfeeding practices. It is estimated that 13 percent of all childhood mortality could be averted by this simple intervention. The Innocenti Declaration[1] and the Baby-Friendly Hospital Initiative[2] launched in the early 1990s have been key reference points that set a new pace of global action. Adequate support in health services for infant and young child feeding is a key intervention for improving breastfeeding rates and good complementary feeding practices.

In Kenya, breastfeeding is universal, with most mothers (97 percent) breastfeeding their children for up to two years (median duration: 20 months). The practice of optimal breastfeeding from birth to 6 months (early initiation and exclusive breastfeeding), however, is very poor. Currently, only 2.6 percent of Kenyan children are exclusively breastfed for the first six months of life.[3] Most communities believe that exclusive breastfeeding is not a feasible practice. Ironically, this belief is also held by health workers, who should be disseminating information in line with MOH guidelines.

Several factors were identified that contribute to poor breastfeeding practices, ranging from inadequate knowledge about optimal breastfeeding practices among mothers, families, and communities, to widespread belief that breastmilk is not sufficient to support an infant's growth, to weak partnerships and coordination in promotion and support of breastfeeding at all levels. Although early initiation of breastfeeding among neonates is important to ensure establishment of lactation, initiation of breastfeeding is delayed in most cases. The reasons for delayed initiation vary from region to region. Giving prelacteal feeds before the initiation of breastfeeding is a widespread practice.

Building on a desk review of the literature available on infant and young child feeding practices in Kenya carried out in June 2008,[4] this rapid qualitative assessment was conducted to ascertain the realities of infant and young child feeding in Kenya and to identify gaps in the current

[1] Innocenti Declaration page. United Nations Children's Fund website. Available at: http://www.unicef.org/programme/breastfeeding/innocenti.htm.
[2] World Health Organization (WHO), United Nations Children's Fund. *Baby-Friendly Hospital Initiative: Revised, Updated and Expanded for Integrated Care.* Geneva: WHO; 2009.
[3] Central Bureau of Statistics (Kenya), Ministry of Health (Kenya), ORC Macro. *Kenya Demographic and Health Survey 2003*. Calverton, MD: ORC Macro; 2004.
[4] Thuita F. *Infant and Young Child Feeding Practices in Kenya: A Review of the Literature.* Nairobi: PATH; 2008.

research available. PATH, with funding from the United Nations Children's Fund Kenya Country Office, contracted the Network of AIDS Researchers of East and Southern Africa to undertake the activity. Prior to conducting this assessment, the team sought permission from the office of the Director of Medical Services, Ministry of Medical Services, to work with the District Medical Officers of Health in the respective districts.

1.1 Objectives

The objectives of this study were to:

1. Describe the key influencers of infant and young child feeding practices.
2. Examine the barriers or constraints (social, cultural, religious) to the uptake of recommended practices.
3. Find out the types of foods used for complementary feeding and the age of the child when these foods are introduced.
4. Ascertain feasible and effective channels for promoting recommended practices in the regions under study.

1.2 Methods of data collection

This rapid assessment used qualitative study techniques including community mapping, free listing, focus group discussions (FGDs), and key informant interviews.

Community mapping

One community map per district was created with a heterogeneous group of women. The participants were requested to draw a map of their sub-location, clearly indicating the borders. They were then requested to show the important facilities in their sub-location, the facilities offering child health services, and the sources of information on infant and young child feeding. The map was initially drawn on the ground; once the participants agreed on the drawing, it was transferred to a notebook.

Free listing

Community members were interviewed using a free-listing guide to determine common childhood illnesses in their community, first foods given to newborn babies in their community, how soon after delivery breastfeeding should be initiated, appropriate age to start introducing complementary foods, who usually feeds the baby, and who makes the decision on how the child will be fed. Free listing was carried out with younger mothers aged 18–25 years, older women aged 26–40 years, grandmothers, and men who were fathers of young children.

Focus group discussions

Discussions were carried out using a structured FGD guide. Each group discussed breastfeeding and complementary feeding practices and ended with a discussion of general issues affecting infant feeding practices. The discussion on breastfeeding practices focused on particular information on infant feeding given to mothers immediately after giving birth, community practices on feeding babies aged 0 to 6 months, how soon after delivery babies start breastfeeding, use of prelacteal feeds, types of other foods given to the newborn baby (including

water), and perceptions on the adequacy of breastmilk alone to support the growth of an infant up to 6 months old.

The discussion on complementary feeding focused on when complementary feeding is initiated, foods and liquids commonly fed to young children in the community, and foods not fed to young children. There was a discussion of how the foods are usually prepared/cooked, if and how foods are enriched, storage and handling of food before feeding, and frequency of feeding, including types of snacks given between meals. There was also a discussion of common childhood illnesses in the community and feeding practices during illness.

The general issues that were discussed included the social, cultural, economic, or religious factors that impact how mothers feed their babies and their potential solutions. Discussions also covered male involvement in infant and young child feeding in the community and how men can further be engaged. The third general issue was a determination of who women consult when they are having problems with feeding their children and the most believable source of information. In addition, facilitators probed for the type of support available for infant feeding from family and community members.

Before concluding the discussions, the facilitators reviewed the current government recommendations on infant and young child feeding with the FGD participants, first to ensure that they did not leave the group with incorrect information, and second, to find out whether there was an awareness of these recommendations and to determine the level of adherence in the community. FGD facilitators asked community members to indicate the types of messages they would like to hear regarding breastfeeding and complementary feeding, the best method of communicating to community members and mothers of young children, and any additional strategies to improve infant feeding practices in the community.

Finally, the FGD participants were asked how women with HIV/AIDS feed their children (in the 0 to 6-month period and the 6-month to 1-year period) and the challenges they experience in feeding their children.

Key informant interviews

Interviews with key informants began with the establishment of how long the participants had practiced in their current role as nutritionist, community health worker (CHW), nurse, or leader/chief, and their involvement in infant feeding in the community they were serving. The interviews were structured in three sections, covering:

- Breastfeeding.
- Complementary feeding.
- General challenges of infant feeding, including feeding an HIV-exposed infant.

In the discussion regarding breastfeeding, the participants were asked to discuss what they observed mothers feeding their babies aged less than 6 months besides breastmilk, how soon after delivery these other foods were given, and the reasons. Key informants were reminded that MOH guidelines recommend that women exclusively breastfeed their children for the first six months of life and that breastfeeding should be initiated within one-half hour after delivery.

Introduction of solid foods should start when the child is 6 months old. The key informants were asked to describe the extent to which women in their community followed these recommendations and to give reasons why they did or did not. They were asked how common exclusive breastfeeding for the first six months was among women in their community. In the discussion on complementary feeding, key informants were asked when most mothers of young children introduce solid foods into the child's diet, reasons for starting at that time, types of foods given to children 6 to 12 months and 12 to 24 months, and major challenges faced by women in feeding their children.

The discussion of general challenges focused on factors influencing infant feeding practices in their community, including social, economic, religious, and cultural factors, as well as the age of the mother. Participants were asked whether, in their opinion, infants and young children were adequately fed in the community and reasons for their responses. They also discussed who were the most influential advisors in feeding children younger than 2 years and whom women consulted when they were having problems with infant and young child feeding. Participants were asked to indicate which individuals in the community can be engaged to actively support recommended infant and young child feeding practices in the community and the messages they would like to see communicated to the community regarding infant and young child feeding. The discussion then turned to the question of whether women who are HIV positive know how to feed their children 0 to 6 months and 6 months and older, whether they follow the recommended practices, and how messages to this population of mothers should be targeted.

1.3 Study population

Community mapping was carried out with a heterogeneous group of women of child-bearing age (Table 1). Free listing and FGDs were carried out with younger mothers aged 18–25 years, older mothers aged 26–40 years, grandmothers, and fathers of young children. Key informant interviews were carried out with health workers in comprehensive care clinics and maternal and child health clinics, district public health nurses, CHWs, traditional birth attendants (TBAs), women's leaders, and representatives from community-based, faith-based, and nongovernmental organizations (CBOs, FBOs, and NGOs) dealing with child survival issues.

1.4 Study area

The study was carried out in 11 districts in seven provinces. In Eastern and Central Provinces, the study was carried out around Mwingi and Maragua District Hospitals. In Nairobi, Nyanza, Coast, Western, and Rift Valley Provinces, the study was carried out at sites representing rural and peri-urban communities, as listed in Table 1.

- Central: Maragua.
- Coast: Mombasa, Kilifi.
- Eastern: Mwingi.
- Nairobi: Kibera, Buruburu.
- Nyanza: Kisii, Rachuonyo.
- Rift Valley: Oloitokitok, Kapsabet.
- Western: Mumias.

Table 1. Summary of study population per area.

	Focus group discussions	Free listing	Key informant interviews	Community mapping
Coast				
Kilifi	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=19	• Nurse, CCC • Deputy DPHN • Women's leader • CHW • NGO rep (PLAN Int'l.)	Respondents of child-bearing age
Mombasa	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=21	• Nurse, CCC • DNO • Women's leader • CHW • NGO rep (Red Cross)	Respondents of child-bearing age
Central				
Maragua	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=20	• Nurse, MCH • DNO • Women's leader • CHW • CBO rep	Respondents of child-bearing age
Eastern				
Mwingi	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=17	• Nutritionist, CCC • DPHN • TBA • FBO rep	Respondents of child-bearing age
Nairobi				
Buruburu	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=20	• Nurse, CCC • DPHN • Women's leader • CHW • CBO rep	Respondents of child-bearing age
Kibera	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 Total=9	• Nurse, CCC • DNO • Women's leader • CHW • CBO rep	Respondents of child-bearing age
Nyanza				
Kisii	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 Total=10	• Nurse, MCH • DNO • Women's leader • CHW • CBO leader	Respondents of child-bearing age
Rachuonyo	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=15	• Nurse, CCC • DPHN • Women's leader • CHW • NGO rep (CARE-Kenya)	Respondents of child-bearing age

	Focus group discussions	Free listing	Key informant interviews	Community mapping
Rift Valley				
Kapsabet	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=20	• DPHN • DNO • Women's leader (social worker) • CHW • NGO rep (Red Cross)	Respondents of child-bearing age
Oloitokitok	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=63	• Nurse, MCH • DPHN • Women's leader (women's guild) • CHW • CBO (Boma la Tumaini)	Respondents of child-bearing age
Western				
Mumias	• Women 18–25 • Women 26–40 • Men • CHWs/TBAs	• Women 18–25 • Women 26–40 • Men • Grandmothers Total=15	• Nurse, CCC • Assistant DNO • Women's leader • CHW • FBO rep	Respondents of child-bearing age
Total	44 FGDs	229 participants	54 key informants	44 maps

CCC: comprehensive care clinic; **DNO:** District Nutrition Officer; **DPHN:** district public health nurse; **MCH:** maternal and child health.

1.5 Participants' occupations

The team collected information about the participants' occupations. In each of the study locations and interventions, the following definitions were used:

- **Artisan:** Individual with a skill who sold his/her services to the community (e.g., an electrician or plumber).
- **Business:** Individual who traded in the market place to earn an income.
- **CHW:** Volunteers and others supported by organizations that hired them occasionally to achieve a certain objective in the community.
- **Farmer:** Individual who derived income from farming (small scale or large scale).
- **Housewife:** A married woman who stayed at home.
- **TBA:** Delivered babies for a living.
- **Unemployed:** Individual who had no income because s/he was not employed.
- **Wage earner:** Individual who had temporary, often menial, work that paid on a daily basis.

About PATH

PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.

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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.

For more information, please visit www.iycn.org.

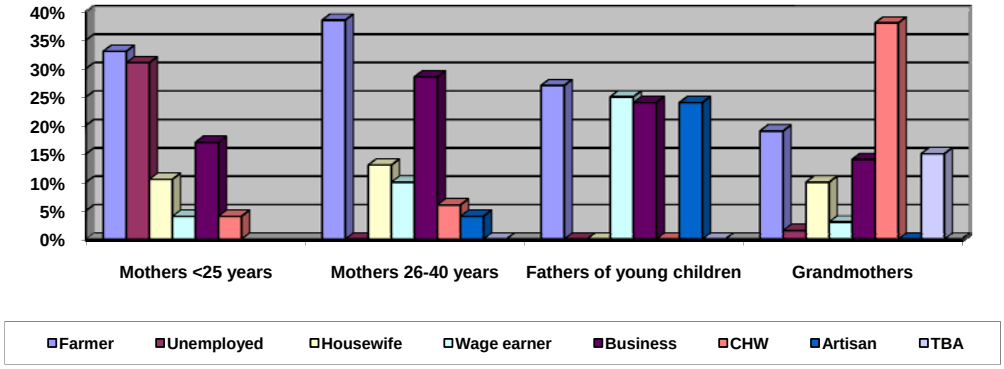
2. Findings

2.1 Study population

The ages and occupations of the FGD participants are shown in Figure 1. Demographic characteristics of the participants of the community mapping and free listing were not compiled.

Recruitment of study participants was generally successful, with participants of FGDs meeting the set criteria: younger mothers aged 18–25 years, older mothers aged 26–40 years, fathers of young children, and grandmothers. Only Maragua and Rachuonyo had women older than 25 years participating in the FGDs with the young women.

Figure 1. Occupations of the study participants.



The study participants varied in age, sex, and occupation. In all groups except the grandmothers, farming and business were the main forms of employment. Young women were more likely to report that they were unemployed or housewives. More than half of the grandmothers were engaged in health-related activities, either as CHWs or TBAs. FGD participants' occupations also varied by region.

2.2 Key influencers of infant and young child feeding practices

Results from community mapping, free listing, FGDs, and key informant interviews indicate that key influencers of infant and young child feeding practices can be broadly categorized into three groups: household level of influence, social networks, and health institutions (both modern and traditional). The most influential advisor often depended on the age of the respondent.

Household-level influencers

Women aged 18–25 years reported the following as key influencers:

- Husbands (Mwingi, Oloitokitok).
- Mothers, mothers-in-law (in all areas).
- Elderly women in the community (Kapsabet, Maragua).
- Grandmothers (Kapsabet).
- Peers.

Women aged 26–40 years reported the following as key influencers:

- Friends, peers, family members.
- Men.
- Mothers.
- Elderly women.

Men reported the following as key influencers:

- Themselves.
- Their own mothers (Maragua).
- The mothers' mothers.
- The mothers' friends.

Social networks: influencers outside the home

According to the community maps and FGDs, key influencers from social networks were:

- Chiefs during barazas (Coast).
- Conventional health providers.
- Churches.

Health institutions (modern and traditional) as influencers

Modern health institutions were identified as government health facilities, health providers/doctors, private practitioners, and CHWs. Respondents noted that money was needed to visit a health facility. In Mwingi and Kilifi, the nearest health center was too far for many women, and this distance was seen as a hindrance to accessing information from the hospital.

In Kilifi, the CHW was seen as the link between the community and the health institution and hence gave information on infant and young child feeding. One respondent noted that CHWs were consulted because they were easily accessible within the community. The CHWs affirmed that they were often consulted on infant feeding practices.

According to the community mapping, not all health facilities offered information on infant and young child feeding (Mombasa). In some areas in which there was no health facility, the sources of information were either schools where there was a feeding program or a supplementary feeding program, or religious institutions such as churches.

Traditional health systems were also identified by community mapping as sources of information on infant and young child feeding, including:

- TBAs (Mwingi).
- Herbalists (Mumias).
- Seers (Mumias).

Most trusted sources of information

According to the FGDs and free listing, facility-based health workers were the most trusted source of information, although not the most frequently consulted. Table 2 identifies the most trusted source for each category of respondent.

Table 2. Most trusted sources of information, by respondent type.

Category of respondent	Most trusted source
Women aged 18–26 years	Doctor/health facility, older women
Women aged 26–40 years	Family members, health facility
Fathers	Doctor
Grandmothers	Doctor, health worker

In Mwingi, respondents noted that although doctors were the most trusted source of infant and young child feeding information, they often could not be consulted because they were far away. Respondents were left to consult older women, husbands, peers, and CHWs—people seen to be near them. In Kisii, mothers-in-law were the most consulted and the most trusted source of information. They were reported as being authoritative family figures.

Men's responses differed from women's. Mombasa and Nairobi (Buruburu) noted that doctors were the most trusted and were the best suited to provide information on infant and young child feeding. The men noted that educated mothers felt that if they went to the hospital to ask about issues, they would be seen as foolish. In Mombasa, men said information on infant and young child feeding came from illiterate women because they were more likely to visit a health facility to obtain the information. One respondent said, "The funny thing is, mothers may seek assistance from those who are illiterate, who get information from the hospital."

In Kilifi, the men reported that they were the most trusted; this perception could be attributed to culturally defined roles in which men have power over women. Also in Kilifi (Ganze), PLAN International conducted a child survival campaign in which CHWs were trained to disseminate infant and young child feeding information based on government recommendations. On this basis, the CHWs perceived they were the most trusted, although they were not mentioned by other groups as key influencers. CHWs in Maragua reported that the mother's mothers and other women were the most trusted.

According to key informant interviews, the most influential advisor was the health worker. Other influential advisors (in order of priority) were:

- Mothers-in-law.
- Husbands.
- Peers or other community members who were with the mother.
- CHWs.
- Women leaders.

Other influencers mentioned by key informants were TBAs, older women in the community, the chiefs during barazas, religious leaders, and aunties.

When mothers had problems during infant and young child feeding, the following people were consulted (in order of priority):

- Health workers.
- Peers.
- Older women.
- Mothers-in-law.
- CHWs.
- TBAs.
- Church, women's groups, fathers.

NGOs and herbalists were also mentioned. One key informant noted that "the older mothers are seen as experts, as they are parents themselves and they could have had the same issues during child-bearing." Interestingly, when the mothers had problems with infant and young child feeding, they would approach health workers as a last resort.

Table 3. Influential advisors around infant and young child feeding.

	Nairobi		Western	Rift Valley		Nyanza		Eastern	Coast		Central
Advisor	Kibera	Buruburu	Mumias	Oloitokitok	Kapsabet	Rachuonyo	Kisii	Mwingi	Kilifi	Mombasa	Maragua
Husband/father	√	√		√	√	√		√	√		
Health worker	√	√	√	√	√			√	√	√	√
Mother's mother	√				√	√	√		√	√	√
Grandparent (mother-in-law)	√	√	√		√	√	√	√	√		√
TBA	√			√		√					
Neighbor	√			√	√					√	
Sister/brother to the mother	√									√	
Friend/peer		√			√		√		√	√	√
Women's leader		√					√				
CBO		√									
CHW		√	√	√	√		√		√	√	√
District officer providing supplementary foods		√									
Relative			√								
Church/religious institution			√	√							
Older woman				√	√		√	√	√		√
Chief				√							
NGO				√							
Women's group			√						√		
First wife				√							
Elder				√						√	
Auntie							√		√		
Peer educator							√				
Peer group								√			
Media: Television, radio										√	

2.3 Barriers to uptake of recommended infant and young child feeding practices

To understand barriers to uptake of recommended practices, the research team explored adherence to MOH guidelines, infant and young child feeding practices, initiation of breastfeeding practices, and complementary feeding practices.

Adherence to Ministry of Health infant and young child feeding guidelines

The assessment revealed that government recommendations for infant and young child feeding were not followed to a wide extent. The main reasons reported were:

- ***Maternal workload and family demands*** were linked to lack of adherence to exclusive breastfeeding. Women who exclusively breastfed were perceived as having time to be with their children (i.e., not having to go out to work) and were also perceived to have enough food to sustain lactation. Some mothers had to work to supplement the family income. Expressing breastmilk was not reported as an option for these women, and yet the mothers stayed away from their children for long hours and hence could not sustain lactation (according to key informant interviews in Kapsabet, Mombasa, Mumias, and Maragua). For mothers who had to go out to work, children were left in the care of housemaids (in urban areas) and grandmothers (in rural areas).
- ***Lack of enough milk***, which was often associated with poverty, was listed as a reason for low adherence to MOH guidelines. This reason was provided in all areas except Buruburu. Lack of milk was also synonymous with lack of food (according to interviews in Mumias, Kapsabet, Oloitokitok, Rachuonyo, Kilifi, and Maragua). It was perceived that a mother must have enough food to sustain lactation. Women who were poor and unable to purchase food did not see exclusive breastfeeding as a feasible option. Similarly, FGD respondents in all areas linked constitution of breastmilk to the mother's dietary intake. They noted that the quality and quantity of the milk produced is based on what the mother eats. A lactating mother with a wholesome diet was perceived to produce breastmilk that has all the required nutrients in the right quantities. On the contrary, a lactating mother who has food security problems was perceived to produce inadequate quantities of milk with inadequate nutrients. The respondents also linked lack of enough milk to the fact that women had to go out and work to supplement the family income.
- ***Availability of resources*** was reported by respondents in Nairobi (both Buruburu and Kibera) and Mombasa as a reason for not practicing optimal infant and young child feeding. Those who had resources were perceived to give foods that were idealized, such as fruits, porridges (e.g., Cerelac), and infant formula. In Mombasa, availability of resources led mothers to start giving infant formula and other milk. In a resource-limited environment such as Kibera, lack of resources made them unable to introduce idealized food early. A father noted, "The others we can't afford like Nan, Cerelac…these are for the rich, which make their babies start walking early." Within this context, families in resource-limited settings may introduce other foods in the hope their children will mature faster. Oloitokitok FGD respondents noted that a mother who does not introduce other foods early is perceived as not adequately caring for her baby. This societal pressure forces a woman to introduce other foods so that she appears to care for her baby and thus is accepted within the community.
- ***Short maternity leave*** was reported by key informants in Buruburu and Kapsabet. As one key informant said, "They can't get maternity leave for six months so they start giving other

foods." A key informant in Kapsabet noted that men are not actively involved in raising children; and hence, time for paternity leave should be added to the woman's maternity leave. FGD respondents in Nairobi-Buruburu reported that women introduced other foods early in preparation for going back to work. Said one respondent: "In the case of the working mother, she starts introducing other food like banana so that when she reaches three months, she can leave the child with food."

- ***Baby crying because of hunger*** (key informants in Kisii and Maragua). In all areas, a baby crying was linked to hunger and nothing else, and this led to lack of adherence to MOH guidelines. A crying baby creates pressure on the mother to introduce other food and reinforces the belief that breastmilk is insufficient for the baby in the first six months of life.
- ***Mother having problems during delivery*** (key informants in Mumias and Kapsabet). When a mother had problems during delivery, then she would not initiate breastfeeding within the first 30 minutes, especially in the case of delivery at home with the help of a TBA. The kinds of problems that would hinder initiation of breastfeeding were not clear. Once other feeds such as water were introduced, this practice continued even after the breastmilk came in. Warm water, glucose water, and salt-sugar solution were most likely to be given alongside breastmilk.
- ***Poor maternal health*** (key informants in Kapsabet and Kilifi). A woman who was perceived as not being in good health would be advised against exclusive breastfeeding.
- ***Educated people setting a bad example.*** Key informants in Oloitokitok said that people who were educated did not set a good example as far as adhering to MOH guidelines and that educated women should serve as role models for other community members to follow. They also said that health workers were not good role models. Very few mentioned that they had witnessed women successfully practicing exclusive breastfeeding for six months.
- ***Health education and health worker training on the MOH guidelines are lacking.*** Some health workers do not believe that exclusive breastfeeding is possible for six months and may pass on this perception to mothers (Maragua key informant). It was noted that the MOH policy is not well explained to mothers, so some may be lacking the adequate knowledge to implement these guidelines (Oloitokitok, Rachuonyo, Mombasa key informants). Participants in all of the FGDs made up of CHWs/TBAs, except in Kilifi, did not believe that breastmilk is adequate for the first six months of life. Some of the CHWs/TBAs encourage mothers to give water before breastmilk comes in. In Nairobi-Buruburu, the men reported that they were not aware of the MOH guidelines, as this information was not disseminated to them. During the FGD, after the men were told of the MOH recommendations on infant and young child feeding, most respondents noted that they did not favor the recommendations. One man said, "Mothers are not like grade cows to remove a lot of milk like that. Even if the government says that, it is just an assumption; one must use alternatives." It was not clear, however, whether the respondents were referring to early initiation or the practice of exclusive breastfeeding.
- ***According to cultural tradition, prelacteal feeds are given.*** Some cultures believe that the stomach must be cleaned before the initiation of breastfeeding (from key informants in Oloitokitok, Mombasa, Kilifi). Some of the materials used to clean the stomach are ghee, cream (Oloitokitok), salt-sugar solution, and warm water (in all areas). In Kilifi, among the

Giriama, a mother does not initiate breastfeeding in the first three to seven days. The colostrum is discarded, as it is perceived to be dirty. In these first few days, the child is given warm water, other milk, and light porridge.

- ***Exclusive breastfeeding is associated with HIV*** (key informants in Rachuonyo). Infant and young child feeding information that has been disseminated to HIV-positive women has focused on the exclusivity of breastmilk or infant formula. As a result, exclusive breastfeeding has been associated with prevention of mother-to-child transmission of HIV (PMTCT) and not nutritional or other benefits to the child and the mother. Younger mothers in Rachuonyo reported that mixed feeding is associated with a negative HIV status. One woman said that a "healthy mother can give water, but sick ones should not."
- ***Home delivery.*** According to key informants in Kisii and Mombasa, a woman who delivered at home was more likely to delay initiation of breastfeeding and to breastfeed for a shorter duration, compared with those who delivered in the hospital. Most staff at the hospital ensured that the women initiated breastfeeding within one hour of birth. A hospital delivery encouraged a woman to exclusively breastfeed for six months. However, it was not clear for how long these mothers were able to sustain exclusive breastfeeding and at what point they started giving other foods. Those who delivered at home were encouraged by TBAs and those around them to introduce other foods, for cultural reasons (Kilifi), for medicinal reasons (all areas), and when the baby cries.
- ***Influence from others, especially older women/peers*** (Kisii, Maragua key informants). Older women or other mothers were perceived as good advisors, and in this sense, they influenced mothers on the duration of breastfeeding. Unfortunately, they often lacked the right information, and they influenced uptake of practices that are not recommended. This result appeared in all the FGDs.
- ***The recommendation that exclusive breastfeeding duration should be four months.*** According to key informants in Mwingi, they have received information that the recommended duration for exclusive breastfeeding is four months, and this seemed to have taken root. In Kisii, the recommendation to exclusively breastfeed was perceived as a new practice.
- ***Cosmetic reasons*** (Nairobi-Buruburu, Kisii). Cosmetic reasons were especially cited among the younger women, who felt that their breasts would either sag or become too big. One father reported that "…mothers deny children food [breastmilk] because of beauty. They are afraid their breasts will sag and will not look beautiful as she was." A CHW in Nairobi-Buruburu also noted: "We really want them to breastfeed, especially the young mothers…. The young mothers who give birth to the first child say they do not want to breastfeed, and when they come out of hospital, they say the breast will sag like chapatti."

Table 4. Foods given to children less than 6 months of age.

	Nairobi		Western	Rift Valley		Nyanza		Eastern	Coast		Central
Food	Kibera	Buruburu	Mumias	Oloitokitok	Kapsabet	Rachuonyo	Kisii	Mwingi	Kilifi	Mombasa	Maragua
Breastmilk	√	√			√	√	√	√	√	√	
Water				√	√				√		
Salt solution			√								
Salt and sugar solution			√					√			
Glucose solution						√			√	√	
Strong tea									√		
Formula milk		√			√	√				√	
Cow's milk		√	√	√	√	√	√	√	√	√	
Ultra heat-treated milk	√										
Milk cream				√							
Porridge	√		√	√	√	√	√	√	√	√	
Porridge with cow's milk		√									
Fruits	√	√	√	√				√		√	
Mashed food	√	√		√			√			√	
Ugali	√		√	√				√			
Spinach	√			√							
Ugali and soup		√					√				
Matoke		√									
Ugali, mrenda		√	√								
Bread in tea			√								
Irish potatoes			√								
Sweet potatoes			√								
Ghee				√							
Weetabix				√							
Pumpkin				√							
Orange juice				√							
Honey								√			
Tomato soup								√			
Beans								√			
Goat's milk								√			
Eggs								√			
Madafu									√		
Tea										√	
Juice										√	

Breastfeeding perceptions and practices for infants aged 0 to 6 months

Participants' perceptions on breastmilk

Most participants mentioned that breastmilk had all the nutrients that a baby needs for growth. In context, this meant two things:

- That breastmilk constituted a balanced diet that a baby needs for adequate growth.
- That food eaten is processed into all nutrients that are present in breastmilk.

Nutrients mentioned, in order of frequency, were:

- Vitamins.
- Carbohydrates.
- Water.
- Colostrum.
- Antibodies (reported to be like medicine, helping the baby to fight disease).
- Energy, minerals, and iron.
- Calcium.
- Fats.

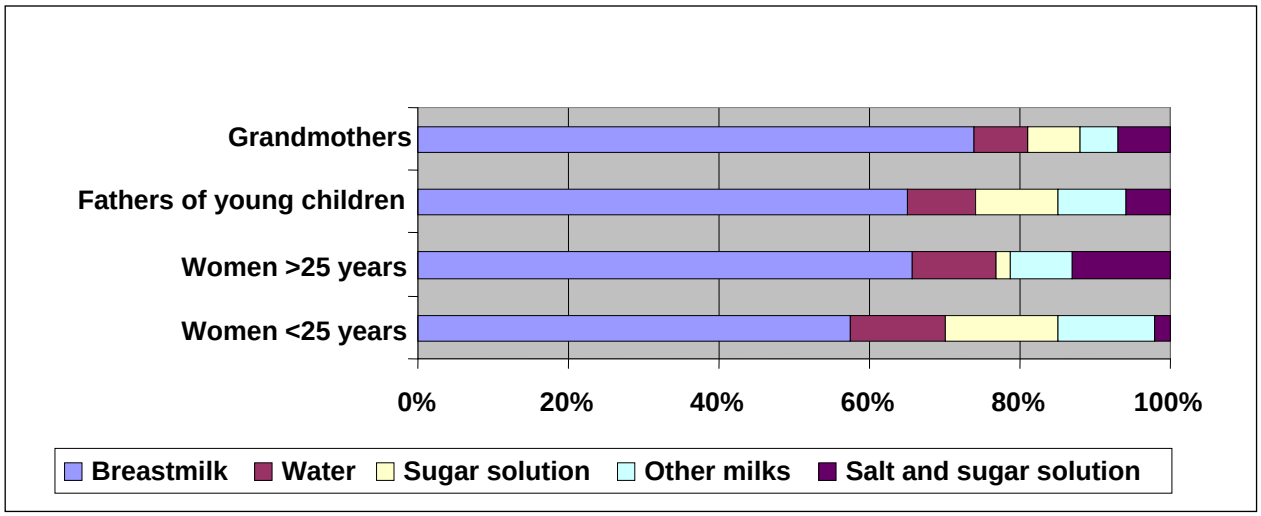
Other nutrients that were mentioned were sugar, fluorine (Buruburu), and nitrogen (Kisii).

In groups of men, younger women, and CHWs, colostrum was mentioned as being very important. In some cases, respondents noted that breastmilk has everything a baby needs for growth. Other respondents mentioned:

- A balanced diet. A man in Maragua noted that "…breastmilk has everything. That is what we believe. This milk has carbohydrates, vitamins, and all that is required for the body is found in the colostrum—igithana—the first milk."
- Breastmilk constitutes nutrients eaten by the mother (Maragua and Oloitokitok). The respondents meant that when the mother is not eating well, her milk may not contain the nutrients mentioned above.
- Breastmilk is readily available and safe (according to fathers in Mumias).

In the free-listing exercise, individuals were asked to identify what should be a baby's first food. Breastmilk was the most frequently cited answer, but a variety of other foods were thought to be suitable, including water, sugar solutions, other milks, and salt-sugar solution. Several older women identified salt-sugar solution as an appropriate food for the baby. The salt-sugar solution is particularly dangerous, putting the baby at risk of hypernatremia, a condition that may lead to brain damage and death. Figure 2 below shows the distribution of responses regarding a baby's first food by the different categories of study participants. The analysis is based on the first item listed by the study participants as a baby's first feed.

Figure 2. A baby's first feed (free-listing data).



Popularity of exclusive breastfeeding

Exclusive breastfeeding for the first six months was not common in any of the areas, despite the respondents' awareness of the nutritional value of breastmilk. There was little connection between what respondents knew about the constitution of breastmilk and the importance of these nutrients to the baby's health and growth. Respondents in most places reported that other foods are introduced before 6 months because working mothers need to go out to supplement the family income. In Maragua, even though women reported that complementary feeding should start at 7 months, they reported that exclusive breastfeeding is not common and that other foods are introduced as early as 2 weeks. In all areas, despite the benefits of breastmilk being known, and even in cases in which respondents had witnessed mothers successfully breastfeeding, exclusive breastfeeding was not a common practice.

As mentioned earlier, factors that contributed to the unpopularity of exclusive breastfeeding were:

- Working mothers do not have time to breastfeed. Expressing breastmilk is not widely practiced in any of the areas.
- The belief that in order to sustain breastfeeding, the mother needs to consume enough food.
- Peer pressure to introduce other foods before 6 months.
- Inadequate information on proper infant and young child feeding practices. Male respondents commonly said that a crying baby is a hungry baby. In Kisii, respondents said that baby boys need to be fed more than baby girls, and mothers reported feeling dizzy while breastfeeding baby boys.
- Cultural perception that the child cannot live on milk alone. A key informant in Kisii reported that breastmilk is light and just water. In Oloitokitok, feeding the child other foods before 6 months was an indication to others that you were not neglecting your child.

Introduction of other foods started as early as 2 weeks and intensified at 2 to 3 months. This is the age at which most children start receiving semi-solid foods.

Initiation of breastfeeding

In all areas, practices around delivery depended on the place of delivery. Generally, however, breastmilk was the main food given when a baby was born. Some respondents reported giving nothing after delivery except breastmilk, but the majority reported that food other than breastmilk was given. Women who delivered at the hospital tended to initiate breastfeeding within one hour and to not introduce other foods. These women were also likely to exclusively breastfeed for a longer duration than the women who delivered at home.

Women who delivered at home were more likely to start giving prelacteal feeds such as warm water, salt-sugar solution, glucose water, animal milk, thin porridge (in all areas), ghee and milk cream (Oloitokitok), and honey (Mwingi). Participants indicated that when women deliver at home, they are not encouraged to breastfeed immediately; they are encouraged to rest first to regain strength. In the event that the milk has not started coming in, a woman is encouraged to provide the baby with warm water to satisfy its hunger. Glucose is usually given to increase the child's energy, whereas salt solution and herbs are given as medicine for stomach problems. In all areas, a baby's crying justified introduction of prelacteal feeds.

In all cases, initiation of breastfeeding was reported to depend on the mother's condition after delivery. In Mwingi, the older mothers in the FGD session mentioned that initiation of breastfeeding should begin within two to seven hours, saying that this long duration warrants introduction of other foods like honey, herbal concoctions, warm water, or glucose water around the time of delivery.

Complementary feeding practices

As described earlier, it is common to introduce other foods and liquids to the infant's diet before 6 months. In all areas, introduction of other foods was based on the consistency of the feedings. These were classified as:

- From 0 to 2 months, the consistency of the foods was liquid (e.g., when porridge was given, it was very light). Other liquid feedings given were animal milk, warm water, and herbal concoctions. In Oloitokitok, ghee and milk cream were given, although the consistency was not clear from the respondents.
- At about 2 to 3 months, the consistency of the feedings became semi-solid, and in some cases, enriched with margarine or animal milk. In poor areas such as Ganze in Kilifi, porridge was enriched with salt. Introduction of food in most areas started at this age.
- By the time the child was 4 to 6 months, the consistency of the food became solid but soft. Most respondents reported giving a staple food such as ugali in soup and vegetables. For example, in Mumias, ugali was given with soup and mrenda (a traditional vegetable), as shown in the following excerpt from an FGD in Mumias:

  Respondent: "Ugali and soup and then the baby keeps quiet; if they were crying, they stop and become happy."
  Respondent: "Now he would give you time to even eat." [They all laugh.]
  Respondent: "Now when you are eating and they start aah, aah, you put another bite in their mouth and they keep quiet."

Moderator:	**"Now this ugali that we put in their mouth, do they chew or just swallow?"**
Three respondents:	"No, they just swallow."
Respondent:	"This ugali is put in the soup and you mash with your fingers to soften so the baby can swallow without a problem."
Moderator:	**"Do you normally give because the babies want to eat?"**
All:	"Yes."

By the time children are 1 year old, they eat solid food from the family pot.

In most areas, respondents reported that introduction of foods early was good, as it gave the mother time to concentrate on other chores. This assessment revealed that mothers have competing tasks; to enable them to concentrate on these chores, they need peace, which is disrupted when a baby cries. Giving food that will fill the stomach was perceived as the solution. In Kilifi, fathers in the FGD noted that a child who cries and is given food keeps quiet.

Age of introduction of solid foods

In all areas, introduction of complementary foods occurred before 6 months. Responses about the appropriate age at which to introduce solid foods varied. Introduction of other foods started as early as 2 weeks and intensified at 2 to 3 months. At the desired age of 6 months, when other foods should be introduced, most children are most likely already eating soft food. Liquids are being reduced, and those who can afford it increase the amount of fruit.

Flour used for porridge

Flour used for porridge varies from region to region and in terms of affordability. All flours except maize were perceived as expensive. In Kilifi, Kibera, and Rachuonyo, the respondents noted that they could not add sugar to the porridge because sugar is an expensive commodity. Flours used in different districts are as follows.

Nairobi Province:

- Kibera: Millet, sorghum, omena, and maize flours.
- Buruburu: Familia (a commercial weaning-porridge flour), millet, soya mixed with other things, green grams (mung beans), millet, omena, and sorghum.

Nyanza Province:

- Rachuonyo: Mixture of millet, sorghum, and maize flours. If this is unaffordable, then maize flour is used.
- Kisii: Mixture of millet flour, omena, soya, wheat, groundnuts, and green grams. If this is unaffordable, then maize flour is used.
- In Kisii and Rachuonyo, these mixtures were perceived as a balanced diet containing the necessary nutrients for a baby.

Central Province:

- Maragua: Mixtures are very common. Muhia flour mixed with dengu (green grams) and soya, maize flour mixed with sorghum, any flour with ground soya beans. Terere and thabai are also added to the children's flour, and omena is added to babies' flour.

Eastern Province:
- Mwingi: Millet, maize, and wheat flours.

Western Province:
- Mumias: Maize flour; mixture of maize, sorghum, and millet; cassava flour added to whatever flour is available (maize is most common).

Coast Province:
- Kilifi: Maize flour mixed with green vegetables and beans with kumbu.

Rift Valley Province:
- Kapsabet: Millet, sorghum, maize, and cassava flours.
- Oloitokitok: Sorghum, millet, omena, groundnuts, and a small amount of maize flour. Also, maize flour alone.

Food preparation, enrichment, and storage

In all areas, it was noted that before the child started eating food from the family pot, the main method of cooking the child's food was boiling followed by mashing. There were some differences by area in the way the food was enriched:

- Milk: All areas.
- Ghee: Oloitokitok.
- Blue band (fortified margarine): In all areas for those who could afford it.
- Salt: Kilifi. This was also added to porridge.
- Honey: Mwingi, Mombasa.

Respondents in Mwingi reported that it was not necessary to enrich a child's food.

Food was stored in a flask/thermos that was mainly used to store porridge meant to last the whole day. Other storage devices were hot pots and *sufurias* (cooking pots). Prepared food was reheated directly or with hot water. When resources were constrained, the food would be given to the child cold because the family could not afford to purchase the fuel required for reheating.

Person responsible for feeding the baby

In all areas, the person responsible for feeding the baby was the mother. When the mother was not available, the following individuals were reported as responsible for feeding the baby:

- The maid (Rachuonyo, Maragua, Nairobi, Kapsabet).
- Grandmother (Maragua, Kapsabet, Mwingi).
- Anybody in the home while the mother was away (Mumias).

Table 5. Age of introduction of other foods, by district, according to key informants.

	Nairobi		Western	Rift Valley		Nyanza		Eastern	Coast		Central
Age	Kibera	Buruburu	Mumias	Oloitokitok	Kapsabet	Rachuonyo	Kisii	Mwingi	Kilifi	Mombasa	Maragua
At birth									√		
As soon as the baby is crying										√	
First day				√							
1 week				√			√				
2 weeks		√								√	
2-3 weeks							√				
3 weeks	√										
1 month	√		√	√							√
2 months		√	√				√		√	√	
3 months		√	√	√	√	√	√	√	√	√	√
4 months			√	√	√	√		√	√	√	
4-6 months	√										
6 months						√					

Table 6. Foods introduced at 6–11 months, by district, according to key informants.

	Nairobi		Western	Rift Valley		Nyanza		Eastern	Coast		Central
Food	Kibera	Buruburu	Mumias	Oloitokitok	Kapsabet	Rachuonyo	Kisii	Mwingi	Kilifi	Mombasa	Maragua
Fruit	√	√			√		√	√		√	
Infant formula (Nan, Lactogen)										√	
Animal milk	√	√	√	√		√	√	√		√	√
Porridge	√	√	√	√	√	√	√	√	√	√	√
Potatoes	√	√									
Bananas (matoke)	√	√	√	√		√	√		√		√
Ugali with stew	√					√			√	√	
Pumpkins		√		√							√
Spinach		√		√							
Ugali			√	√	√		√				√
Ugali with milk		√									
Fruit juice		√									
Carrots		√									
Bread			√								
Tea			√								
Irish potatoes			√	√	√	√	√	√			
Sweet potatoes			√				√				
Rice				√					√		
Beans					√		√				
Mashed cassava									√		
Green vegetables										√	
Mchicha									√		
Skuma wiki								√			
Eggs					√						
Food from family pot			√		√			√			

2.4 Factors influencing infant and young child feeding practices

In all districts, the factors that influenced infant and young child feeding practices were mainly social, economic, or related to the age of the mother. Religious and cultural factors were mentioned but not emphasized. The following influencing factors were similar in all the districts.

Social factors

The perception that mothers do not have enough milk was common and prevalent in all areas. This was closely linked to peer pressure that influenced mothers to introduce other foods early. Young mothers depend on older mothers to teach them how to feed their children. Frequently, however, these older women have inaccurate information.

Working women have to leave their children in the care of secondary caregivers, who may not feed the children adequately. Expressing breastmilk was not mentioned in any of the districts as an option for working mothers to be able to sustain exclusive breastfeeding. The reasons for this were not clear from this assessment.

Economic factors

Families that had a source of income were perceived to have resources to enable them to implement infant and young child feeding successfully. Lack of money was identified as a reason why mothers did not exclusively breastfeed for six months; they needed money to buy food for themselves to enable them produce enough milk.

Age of the mother

In all districts, older women were perceived as having more experience in child nurturing and feeding. Younger mothers were perceived as needing more supervision and direction with regard to infant and young child feeding.

Specific factors that influence infant and young child feeding practices and examples from each district are described below.

Regional factors

Nairobi Province: Kibera and Buruburu

In Kibera and Buruburu, several factors were reported as influencing how infants are fed. Social factors included the following:

- During social gatherings (e.g., at church), mothers whose children are seen as healthy may offer advice to women who perceive that their children are not healthy.
- Lack of support from the father of the baby. A young girl may become pregnant without support from her partner, forcing her to go back to her parents, who are poor (reported by fathers in Kibera).

Economic factors reported in Kibera and Buruburu included the following:

- A mother may employ a caregiver who may not be able to feed the child well. As an older woman in Kibera reported, "…some of them lie that they have fed the baby and they have not."
- Most women are not empowered to work, and the father of the child may not provide financial support. A man may impregnate a young girl and abandon her. In an area such as Kibera, where poverty is common, a woman may not be able to feed her child, as she is unable to feed herself in the first place (reported by fathers in Kibera).
- In Kibera, the CHWs idealized Cerelac (instant porridge) and reported that mothers in the slums were unable to afford it. Cerelac was said to increase babies' strength.

Most people in Kibera and Buruburu do not follow cultural practices when feeding their babies, although they are aware of them. Some cultural beliefs reported were:

- A child who eats eggs before talking will develop a heavy tongue and will have problems in speech development. This was mentioned in both Kibera and Buruburu.
- A key informant in Buruburu reported that most women nurture their babies in the same way their own mothers nurtured their children.
- Force-feeding was reported as a cultural norm in Buruburu, referring to the practice of covering a baby's nose during feeding so that the child will swallow and eat quickly.
- The older women in Kibera reported that if a man was intimate with his breastfeeding wife and she conceived, then she would not be allowed to continue breastfeeding. The child would have to be given traditional medicine. This was reported to be common among the Luo community.

Respondents suggested the following ways to address infant and young child feeding problems in these districts of Nairobi:

- Provide more counseling from professionals. This was believed to empower people with knowledge.
- Provide more assistance from the government, especially to poor families. This assistance would help to ensure that children are fed better, especially in areas where poverty is rampant due to high unemployment. Younger mothers in Kibera proposed using churches as places for giving assistance.
- Create more employment or business opportunities, so that people are able to afford food for their families.
- Improve efficiency in health systems like those at Kenyatta Hospital. Participants indicated that the lines are too long and that getting help sometimes takes so long that clients give up trying.
- Create women's support groups so that women have the opportunity to start income-generating activities with funds from the government.

Western Province: Mumias

There was no clear line between social and cultural factors influencing how infants in Mumias were fed. Social and cultural perceptions reported in Mumias included the following:

- Family size affects feeding ability. If the family is big, limited resources make it more difficult to feed the children. Younger and older women linked family size to the availability of family planning.
- Beliefs around the "evil eye" (*bikhokho*) can interfere with the way a child is fed. When a woman travels with her baby, she will not breastfeed her baby due to fear of the evil eye.
- Elderly women are sometimes brought children by their sons and daughters, even though they cannot take good care of the grandchildren, who then become malnourished.
- Pregnant women are not always allowed to breastfeed. It was perceived that breastfeeding interferes with foetal development.
- Women who deliver twins are isolated for some time and are not allowed to go out until they take certain herbs (as reported by fathers).
- Mothers have many competing tasks. Within the community, lactating women receive minimal support and end up doing most of the household chores. This leaves mothers with little time to concentrate on feeding their babies.
- In the case of marital conflict, the mother's breastmilk is perceived to disappear (as reported by CHWs).
- Children are not fed eggs because it is believed they will develop heavy tongues and not be able to speak.

Economic factors identified in Mumias included the following:

- Poverty is rampant, and people lack money to buy food.
- Farms were described as small and used to plant sugar cane because of the financial gains from this crop. Sugar cane takes a long time to mature; during the period of maturity, there may be no money to buy food.
- The availability of food depends on having employment or being able to farm.

Proposed strategies for addressing infant and young child feeding practices in Mumias were:

- Improve uptake of family planning (mentioned by younger women).
- Reduce men's alcohol consumption. In context, this meant that money was being used to buy alcohol, rather than food for the family.
- Help community members with money to start income-generating activities.
- Educate community members (at church) that when children get sick, they should be taken to the hospital promptly, and to stop fearing the evil eye (mentioned by fathers).
- Educate men on their role as the head of the family and how to relate to their wives.

Rift Valley Province: Kapsabet, Oloitokitok

In Rift Valley, the social factors reported to influence infant and young child feeding practices included the following:

- Exclusive breastfeeding was associated with an HIV-positive status. Mothers sometimes introduce other foods so that people do not assume they are HIV positive.
- Most people do not plan their families well. For example, a family having a baby every year leads to scarcity of resources and results in young children being poorly fed.
- A woman who drinks too much is likely to neglect her baby. This group of women needs counseling (Kapsabet).

Economic factors reported in Kapsabet and Oloitokitok included the following:

- Drought impacts food availability in a significant way. The little food that is harvested is sold for income, which may lead to an inadequate food supply for the family. In Oloitokitok, mothers who live in the lower zones are true pastoralists and have problems getting food, whereas those in the upper zones can be considered to have adequate resources. It is perceived that women in the upper zones are adequately feeding their children.

Cultural factors reported in Kapsabet and Oloitokitok included the following:

- In Kapsabet, among the Kalenjins, key informants reported that grandmothers decide the type of food to feed children.
- Breastmilk alone is perceived as not being enough to sustain a child for six months (in both Kapsabet and Oloitokitok).
- In Kapsabet, when a lactating mother travels, she is expected to wash her breast before breastfeeding.

Proposed strategies for addressing infant and young child feeding practices in Kapsabet and Oloitokitok were:

- Educate women on proper time management.
- Empower community members economically.
- Encourage lactating women to consult one another on how to care for their babies.
- Encourage mothers and fathers to support one another.
- Provide counseling to mothers during lactation and weaning.

Nyanza Province: Kisii, Rachuonyo

Social factors reported in Kisii and Rachuonyo included the following:

- Women who are in abusive relationships and experiencing marital stress are not able to adequately feed their children. Some women are beaten by their husbands when breastfeeding, causing psychological stress so that they cannot effectively carry out exclusive breastfeeding.

- Social networks such as mother-to-mother support groups have helped to disseminate infant and young child feeding information.
- Role models who are successful in infant and young child feeding teach women appropriate practices through interaction (e.g., at church or during women's meetings).
- Grandparents of young girls help them care for their babies. These grandparents may not have the skills to care for young children, which may compromise infant and young child feeding practices.
- There is a lack of family planning. When families are large, there may not be enough resources to feed the children well.
- In social gatherings, when mothers perceive that other children look healthier than their own, they ask the mothers of those children for advice.

Cultural factors reported in Kisii and Rachuonyo included the following:

- The belief that a child should be given food early to promote better growth.
- A baby boy needs to be fed more than a baby girl because boys are perceived to be hungrier and stronger. Hence, solid foods are introduced earlier for boys than for girls (Kisii).
- Pregnant women should not breastfeed, as breastfeeding interferes with foetal development.
- Traditional herbs are given to newborn babies.
- Children should not be given eggs, as they will develop a heavy tongue and not be able to talk (Rachuonyo).
- Seventh Day Adventists do not cook food or warm food on the Sabbath (Rachuonyo).

Proposed strategies for addressing the factors that influence infant and young child feeding in Kisii and Rachuonyo were:

- Engage community members in business and farming activities to improve family income.
- Provide government assistance, such as food rations, to support poor families.

Eastern Province: Mwingi

Social factors reported in Mwingi included:

- Lack of emotional support from fathers during infant and young child feeding.
- Marital/family problems lead to mothers producing less milk.

Cultural factors reported in Mwingi included:

- Goat's milk is believed to cause severe protein-energy malnutrition.
- A mother who is thought to be promiscuous is not allowed to breastfeed her baby.
- Older mothers are perceived to feed children more traditional foods as compared to younger mothers. This point was not elaborated on in terms of the types of foods considered to be traditional or modern.

Proposed strategies for addressing factors that influence infant and young child feeding in Mwingi were:

- Increase food relief in this dry region.
- Encourage and assist fathers to provide adequately for their families, which will ensure that children are well fed.
- Improve access to clean water.

Coast Province: Mombasa, Kilifi

Social factors identified in Mombasa and Kilifi included the following:

- Lack of social support for lactating women (according to fathers in Kilifi).
- Lactating mothers are overburdened by sociocultural roles.
- Lack of emotional support from spouses. Women reported high stress levels.
- Absence of knowledgeable people to teach women about breastfeeding practices.
- Low literacy levels. Mothers who are more educated are more likely to feed their children better than those who are not.
- Advertisements (Mombasa). Commercial foods such as Cerelac and Proctor & Allan porridge are idealized in the media and influence what mothers feed their children.

Economic factors identified in Mombasa and Kilifi included the following:

- Drought affects the availability of food and the way food is priced. It also impacts a woman's ability to practice what she has been taught. If food is plentiful, the child will get food to eat.

Cultural factors identified in Mombasa and Kilifi included the following:

- Breastfeeding is the cultural norm; those who do not breastfeed are stigmatized.
- If the breast produces milk when the mother is pregnant, the fetus is likely to die (Kilifi-Giriama).
- A newborn child should be given sugar solution, which is thought to clean the stomach (Kilifi).
- The colostrum should be disposed of, as it is perceived not to be good. This is a belief among the Giriama that is slowly fading away.

Proposed strategies for addressing factors that influence infant and young child feeding in Mombasa and Kilifi were:

- Educate both men and women on recommended infant and young child feeding practices.
- Empower community members economically.
- Empower women financially through women's support groups.

Central Province: Maragua

Social factors reported to influence infant and young child feeding in Maragua included:

- Family planning is not taken seriously. This leads to large families with limited resources. As a result, children are not adequately fed.
- There is a spillover effect from HIV-positive mothers, who receive free supplies of infant formula, to HIV-negative mothers. These mothers formula-feed openly, influencing other mothers.
- There is inadequate knowledge on optimal infant and young child feeding practices.
- Religious influences affect people who attend the Akorino church. Church members do not visit the health facility and may miss out on infant feeding counseling.
- Younger mothers are perceived as lacking knowledge and experience and needing supervision.

Economic factors reported in Maragua included:

- Insecurity in some parts of Maragua district has discouraged community members from keeping poultry and other dairy animals.

Proposed strategies for addressing factors that influence infant and young child feeding in Maragua were:

- Provide government support to women with young children so that they can feed their children well.
- Empower and employ women.
- Educate the community on recommended infant and young child feeding practices.
- Encourage fathers to be actively involved in infant and young child feeding.

2.5 Male involvement in infant and young child feeding

In all districts, the culturally defined role of nurturing children rested with mothers. Men were not directly involved in infant and young child feeding; their role was mainly to provide food for children and the breastfeeding mother. In some cases, the mother also contributed to the provision of food. Areas that reported lack of male involvement (Kapsabet, Maragua, and Rachuonyo) identified men's alcohol abuse as the reason.

Strategies suggested for increasing male involvement in infant and young child feeding included the following:

- Educate men through barazas and seminars to make them more aware of their role in infant and young child feeding.
- Form father-to-father support groups; train father leaders to train other father leaders.
- Report difficult men to administrative authorities such as chiefs (suggested by younger women in Mwingi and Kibera).

- Train parents on how to budget with minimal resources (suggested by men in Oloitokitok).
- Improve employment opportunities for fathers so that they can provide for their families.

2.6 Infant feeding within the context of HIV

Messages on infant feeding within the context of HIV were very clear in all areas. It was generally reported that a woman who was aware of her HIV status and visited the health facility was counseled on infant and young child feeding. The research team was not able to determine whether this counseling was conducted in groups or individually. Respondents in Oloitokitok reported that there was no HIV/AIDS in their area. In most districts, participants reported that most women did not know their HIV status and thus lacked knowledge on infant and young child feeding within the context of HIV. Information on PMTCT was provided at the time of testing in antenatal clinic settings.

Feeding 0 to 6-month-old children within the context of HIV

It was noted that a woman should breastfeed her child for six months without giving water. If water was given, the child would become infected (reported by younger women in Kibera).

In Rachuonyo, exclusive breastfeeding by an HIV-positive woman was perceived as a measure that would ensure that the child would not become HIV infected. Other respondents reported early cessation of breastfeeding at 3 months. In other districts, respondents reported that an HIV-positive woman should not breastfeed at all and instead should give infant formula or animal milk. Others reported that women who were HIV positive received free supplies of formula from the hospital (Maragua).

In general, the information that came from the respondents was very clear on the exclusivity of breastfeeding or formula feeding. However, there were concerns that those who chose to avoid breastfeeding would raise questions among those around them. There was an exception in Mwingi, where the key informants reported that HIV-positive women lack adequate information on infant and young child feeding. HIV-positive women faced stigma, and this led to women not easily disclosing their status.

Feeding 6- to 12-month-old children within the context of HIV

Most respondents noted that after six months, women who chose to breastfeed had stopped breastfeeding and had introduced balanced complementary foods. Animal milk was widely mentioned as ideal for children older than 6 months. Most respondents noted that advice from doctors was crucial at this stage. The research team was not able to obtain the specific advice that doctors give, but it could determine that information from health workers was the most trusted. Some respondents noted that HIV-positive women do not have problems, as they are given free food for a full month and are paid to cover their rent (reported by older women in Kibera).

Infant and young child feeding problems encountered by HIV-positive women

Respondents identified the following problems faced by HIV-positive women:

- ***Financial constraints:*** It was noted that women did not have enough financial resources to purchase food to implement the infant and young child feeding recommendations they

received from the clinic. It was not clear whether this money would have been used for buying replacement foods or complementary food. It would be safe to assume, however, that money is lacking for both types of feeding, due to high poverty. This was mainly reported by urban women. Furthermore, women who become sick cannot work, which depletes the family's monetary resources and leads to poverty.

- ***Inadequate family and community support:*** Respondents noted that families and communities do not support HIV-positive women adequately with regard to infant feeding. Women who chose to formula-feed are stigmatized and branded as HIV positive. Paradoxically, the same situation is true for women who chose to exclusively breastfeed. In some cases, women who disclose their status are abandoned by their husbands. Most HIV-positive women face stigma and exclusion from the community.
- ***Onset of illness:*** Most respondents perceived their HIV-positive status with onset of illness and weakness. It was reported in most areas that an HIV-positive woman who becomes sick cannot adequately feed her infant. Those who take antiretroviral drugs sometimes lack food for themselves and their infants. It was reported that taking antiretrovirals on an empty stomach makes a woman weak and prevents her from having the energy to feed her baby or look for food for her child.
- ***Psychosocial stress:*** It was reported that HIV-positive women who choose not to breastfeed their infants feel stress. Breastfeeding is a culturally accepted norm and in most cases associated with expressing love for the baby. A woman who chooses not to breastfeed may feel that she is not like other women. HIV-positive women who breastfed felt stress that they were likely to infect their children. The fear of infecting the baby was real among those who breastfed. Women who were secluded often felt lonely, with no one to turn to.
- ***Inadequate knowledge:*** It was noted that HIV-positive women need more knowledge about infant and young child feeding, especially during introduction of complementary foods.

2.7 Feasible and effective channels for promoting infant and young child feeding

Infant and young child feeding information needs and messages

Participants were asked to identify the areas in which they need information to support appropriate infant feeding. The needs varied for different demographic groups, as listed below.

As one FGD respondent noted, "Women should be told whether breastmilk is enough to satisfy the baby, because in this community, they think that giving breastmilk alone is bad and not caring for the child."

Younger mothers (18–25 years old) requested information on the following infant and young child feeding topics:

- Importance of breastfeeding.
- What a baby should be fed.
- Number of times a baby should breastfeed per day.
- How to plan time for breastfeeding.
- Duration of breastfeeding.
- What to do when returning to work.

- Illnesses during breastfeeding.
- When to start feeding young children.
- How to prepare the baby's porridge.
- Correct answers to the questions they were being asked.
- How to space children.
- Foods needed by lactating mothers.

Older mothers (26 years or older) requested information on the following topics:

- Foods to eat during breastfeeding.
- Stress management.
- Correct answers to the questions they were being asked.
- Problems associated with early introduction of porridge (complementary foods).
- What to do when there is not enough breastmilk.

Fathers of young children overwhelmingly indicated that it would be nice to know more about breastfeeding and requested the following information:

- The value of exclusive breastfeeding for six months.
- What to do when there is not enough milk.
- When to consult the doctor.
- Infant feeding for HIV-positive women.

TBAs and CHWs requested information on the following infant and young child feeding topics:

- What foods are now recommended for the baby between birth and 6 months (since they used porridge in their own time).
- How to teach mothers how to breastfeed, and in turn, teach others.

Best strategies for communicating infant and young child feeding messages

Participants were asked to identify the best strategies for providing infant and young child feeding information. Participants mentioned a number of strategies that can be grouped into two themes: face-to-face communication and the media. (Face-to-face communication includes health talks at clinics, seminars, and talks at chiefs' barazas.) As seen below, the strategies differed by demographic group.

Younger mothers (18–25 years old) were clearly interested in one-on-one communication. They identified the following channels of communication as best:

- Radio and television.
- Seminars.
- Health clinics.
- Village-level sensitization.
- Women's groups.
- Traditional health systems and TBAs.
- Formal education through schools.

Older mothers (26 years or older) wanted information brought to them in their community. They preferred methods that do not require one-on-one consultation, probably reflecting their time constraints due to family-related activities. Their preferences included:

- Seminars.
- Door-to-door campaigns.
- Posters and brochures.
- Churches.
- Social places.
- Labels on government vehicles.

Fathers of young children were largely interested in the use of media as a means of infant and young child feeding communication, as follows:

- Government documentaries on television.
- Seminars with monetary incentive.
- Health clinics.
- Booklets in the clinics for mothers to bring home to their spouses.
- Chiefs' barazas.
- Plays and roadshows.
- Church couple days.
- Community mobilization.
- Music.
- Re-introduction of home science.

Fathers also suggested that providing trained breastfeeding counselors in addition to nutritionists and CHWs would be helpful.

Participants recommended the following media channels as effective:

- Radio.
- Television documentaries in urban areas.
- Mobile telephone text messages on infant feeding.
- Theater.
- Recorded cassette messages to listen to at home (take away).
- Information, education, and communication materials to accompany face-to-face and media communication.

Infant and young child feeding audiences and messages within the context of HIV

When asked to recommend target audiences for messages about infant and young child feeding within the context of HIV, participants mentioned the following, in order of priority:

- Mothers of children; women of child-bearing age.
- Fathers of children.
- The whole community.
- Opinion leaders and the church.
- Women's groups.

- CHWs.
- Youth.
- Health workers.
- Young couples and peer counselors.

Others included Muslim leaders, TBAs, church elders, NGOs, grandmothers, and mothers-in-law.

5. Conclusions and recommendations

5.1 Sources of information on infant and young child feeding

Women received information on infant and young child feeding from multiple sources. However, the FGDs revealed that the most influential advisors were not necessarily the most trusted. For example, CHWs reported that they frequently provide information on infant and young child feeding and are trusted by women, but no focus group identified CHWs as influential. On the contrary, both women and men identified clinic-based health workers as people they trusted to provide information, but it was noted that health workers are rarely seen due to financial, transportation, and other constraints. In fact, no focus group of men or women named health workers as influential infant and young child feeding advisors.

At the community and household levels, older mothers said that friends/peers were the most influential, even though they most trusted health workers and family members. Younger women said that their husbands were the most influential, although they most trusted older women. Across all groups of respondents, however, mothers and mothers-in-law were identified as influential, and mothers in all focus groups said that family members were among the people they most trusted to provide help with infant and young child feeding problems. Older women in the community were, in most cases, perceived to have previous experience and were widely consulted for advice on infant and young child feeding.

This incongruity between those who are influential and those who are trusted is an important finding for program managers. It suggests that infant and young child feeding programs might achieve a greater impact by targeting more resources toward household members who are most likely to influence infant and young child feeding behaviors rather than toward people who are traditionally expected to provide health advice, such as CHWs and health workers. In fact, when asked to list the most important target audiences for messages about infant and young child feeding within the context of HIV, mothers, fathers, the community at large, and opinion leaders and church members were listed first.

Recommendations

- Design interventions that target the most influential people, including fathers and older women/grandmothers.
- Take a family- and community-based approach to changing infant and young child feeding practices rather than primarily relying on health worker training and individual counseling.

5.2 Barriers to uptake of exclusive breastfeeding

Group discussions and interviews in every district revealed poor adherence to MOH guidelines on infant and young child feeding. Food is introduced as early as 2 weeks and given more regularly at 2 to 3 months. Interestingly, most respondents were aware that breastmilk provides a balanced diet for infants. Moreover, they were able to name many important components of breastmilk. Nonetheless, this knowledge did not translate into the practice of exclusive breastfeeding. There were numerous reasons cited for poor adherence. The most important

included women working outside the home, cultural traditions and social norms that contradict national guidance, and lack of information and support available to women and their influencers.

In most areas, poverty was cited as a major impediment to exclusive breastfeeding. Most mothers work outside the home to supplement the family income and therefore leave their infants in the care of housemaids or grandmothers for long hours. In some places, stay-at-home mothers are perceived as lazy. Expressing breastmilk was not reported as an option for these women. Therefore, a strategy that involves families, communities, and workplaces is necessary to support women to continue exclusive breastfeeding after returning to work. This could include working with local businesses to ensure that women are given time and a place to express breastmilk or that women get breaks to breastfeed when the child is nearby. It could include teaching women to express breastmilk and mobilizing the community to encourage that behavior. It would involve securing buy-in from grandmothers and other caregivers to ensure they do not give foods or liquids other than breastmilk.

In addition to the challenge of financial strain requiring women to work, there was a perception that poor mothers who had inadequate diets could not produce enough breastmilk. Information and support are therefore required to change the perception that maternal diet directly effects breastmilk production.

While working outside the home is a major challenge for women who want to exclusively breastfeed, the data suggest that overcoming this challenge would not dramatically improve exclusive breastfeeding rates. Respondents said that breastmilk was an excellent food for a baby, but they also believed that infants need other foods. In the first few days, prelacteal feeds such as ghee, salt-sugar solution, and light porridge are seen as important for cleansing the baby's stomach. Later, certain foods, including commercial baby foods, are idealized, and respondents said that people who do not give additional foods are seen as poor caregivers. Some of these perceptions are likely reinforced by community-based health personnel, as almost none of the CHWs and TBAs believed that breastmilk alone is adequate for six months, and mothers who deliver their babies at home are not encouraged to breastfeed immediately. Key informants said that influential people, including older women, educate people, and health workers set bad examples and give incorrect advice. For example, key informants said that many people do not know that the recommendation to exclusively breastfeed for four months was changed to six months, and focus group participants said that MOH guidelines were generally poorly explained to mothers. Some respondents said that exclusive breastfeeding is now associated with being HIV positive. Moreover, traditional beliefs are strongly held, as evidenced by a FGD with men who said they disagree with the MOH recommendations.

It is an important finding that even science-based recommendations coming from experts in the central government may not be believed or accepted at the community level. There is an urgent need to overcome dangerous misconceptions about infant and young child feeding and to disseminate correct information to influential people through respected community-based stakeholders. Those who have frequent contact with women at critical time points, including TBAs, must be targeted. Currently, the focus in these communities seems to be on the challenges and risks of giving only breastmilk. This thinking must be changed so that people are focused instead on the challenges and risks of giving foods other than breastmilk before 6 months. An

effective community campaign will help people connect their infant and young child feeding behaviors with health outcomes.

Based on participants' responses, messages around exclusive breastfeeding should:

- Emphasize all benefits of exclusive breastfeeding, including the nutritional, protective, emotional, and cognitive development value. Repackage the messages to speak to what is idealized within the community.
- Offer assurance that breastmilk is sufficient for a baby even in cases of food insecurity. Women need to understand that even when they lack food, their breastmilk is still adequate to sustain child growth and development.
- Explain the importance of colostrum for immunity and protective purposes. This can be linked with the ideal time to initiate breastfeeding.
- Illustrate the dangers of introducing prelacteal feeds.
- Address the perception that exclusive breastfeeding is for PMTCT. Emphasize the nutritional benefits of exclusive breastfeeding, and remove its association with HIV-positive women.
- Educate mothers on the physiological benefits of breastfeeding, targeting young mothers who choose not to breastfeed for cosmetic reasons.
- Promote breastmilk expression, and educate women on how to express and store breastmilk.
- Address the misconception that when a baby cries, it always means hunger. Illustrate the possible reasons why a baby cries and the actions to take if the crying persists.

In addition to guidelines being poorly understood, there is evidence that families simply need more support navigating the complexities of caring for small infants. For example, when a baby cries, people believe that the baby is not getting enough to eat. This leads to intensified pressure at the household level and from husbands to give foods other than breastmilk. In Kibera, for instance, fathers give money for other foods to be bought when a baby is crying often. Data suggest that women also want to give other foods, as they welcome the peace and quiet to complete their household chores once babies are well fed. This practice of solving crying with other foods could lead to a vicious cycle that continually worsens infant and young child feeding practices; a young infant who eats foods other than breastmilk is more likely to become ill or to be inadequately fed, thus giving the infant more reasons to cry. Families need to be educated about the variety of reasons why children cry and taught healthier ways of soothing them. In addition, fathers need to be informed about different ways to support mothers and babies other than by buying food, such as helping with other household chores so that women can breastfeed. Finally, information and support should focus on helping families cope with specific challenges with childcare that were identified through this assessment and that lead to poor infant and young child feeding practices (e.g., providing glucose to improve a child's energy and salt solution to resolve stomach problems).

5.3 Complementary feeding perceptions and practices

As described above, introduction of foods in addition to breastmilk begins well before 6 month of age, which is the recommended age for introducing complementary foods. The types of foods given and the consistency of the foods depend on the age of the child. Introduction of other feeds started as early as the first day after birth, when a mother's milk was slow to come in. However, while respondents in most areas reported introducing food in the first days or weeks, respondents in Kapsabet, Rachuonyo, and Mwingi reported that food is not introduced until the third month, suggesting that families in these areas may have benefited from better awareness or safer family traditions. This diversity in practices warrants further exploration and may provide insights into how to promote delay of food introduction in other geographic areas.

While food introduction occurs too early, the data also revealed some positive complementary feeding practices in most districts. In all areas, maize flour was said to be the most affordable, but it is common to use flour mixtures for preparing porridge. Using a mix of flours increases the nutritional diversity of a child's diet. In some cases, the flour mixture contains excellent sources of nutrients, such as soya, mung beans, and groundnuts. In addition, respondents in nearly all districts reported that porridge is usually enriched, with milk and fats (ghee or margarine) being the most common ingredients. While commercial cereals were idealized and perceived as providing a balanced diet, the practices of using mixed flours and enriching porridge are excellent and should be reinforced. Finally, data revealed a good understanding of the importance of increasing the consistency and texture of foods as a child gets older. Children get solid food by age 6 months and eat from the family pot by age 12 months.

The reported practices of providing enriched flours and porridges and giving solid foods provide a good foundation upon which to improve the dietary diversity of young children in Kenya. Based on responses about foods given from 6 to 12 months of age, vitamin A-rich foods are noticeably lacking in the diet. For example, pumpkin was given in only three districts, and carrots and eggs were each given in only one district. Beans and spinach, which are important sources of iron, protein, and other nutrients, were also given in very few places. These foods are easily grown or affordable in many places, and if given, could dramatically improve the nutrient profile of the diet. Cooking demonstrations and distribution of recipes might encourage women to try introducing these foods.

5.4 Factors influencing infant and young child feeding practices

Respondents in each province listed many factors that influence infant and young child feeding practices. Some of these were unique to specific areas, but there were several common themes across the provinces. These included perceptions about breastmilk supply and adequacy, family size and birth spacing, and economic factors.

As in many places, the perception of inadequate milk supply featured prominently among the reasons that women do not exclusively breastfeed. This perception was sometimes based on the fact that women themselves did not eat properly, as well as on a general belief that breastmilk from any woman is simply inadequate for six months. This belief is reinforced regularly by older women, who often care for infants while their mothers go to work, by family members who buy or give food to infants when they cry, and by community norms that suggest a mother is neglectful when she gives nothing other than breastmilk to an infant. These influences can be

particularly powerful for younger mothers, who rely more heavily on older women for advice and guidance and are likely to lack confidence. In order for the MOH to succeed at improving breastfeeding practices, these powerful influencers must work to convince doubtful mothers that they are capable of providing enough milk for their infants. These influencers must believe in and promote the superiority of breastmilk over all foods, regardless of a mother's own nutritional or health status.

While inadequate breastmilk supply is sometimes a perception, it can also be a reality, particularly for women who do not use optimal breastfeeding practices. For example, a woman who is advised to discard her colostrum and delay breastfeeding initiation may have extra difficulty establishing her milk production. Other women may experience reduced milk supply when they return to work and are unable to feed or express for long periods during the day. And an infant who receives other foods may breastfeed less often because its stomach is already full, thus reducing a mother's milk supply. These poor practices are frequent in all provinces. Therefore, concern about milk supply must not simply be dismissed as a perception. Counseling for a mother should focus on improving practices to ensure there is enough breastmilk, as well as on building her confidence so she believes she can provide for her baby.

Poor birth spacing or failure to use contraception was mentioned in nearly every province as something that influenced feeding practices. In three places, respondents said that a woman who becomes pregnant can no longer breastfeed. In four provinces, participants said that lack of family planning resulted in families with more children than they can afford to feed properly. These observations suggest that greater coordination is needed between family planning and infant and young child feeding programs. Community- and facility-based family planning programs should integrate infant and young child feeding messages into their activities, and infant and young child feeding programs should talk about the advantages of exclusive breastfeeding and birth spacing (e.g., lactational amenorrhea method), as well as other family planning methods for improving a family's capacity to optimally care for children. In addition, families should be informed about the feasibility and importance of continuing to breastfeed young children, even if the mother becomes pregnant. This message could be given in family planning services, during well-child visits, and during antenatal care consultations.

A variety of economic challenges were also reported to impact infant and young child feeding. As mentioned above, respondents did not feel that a woman with a poor diet could produce enough breastmilk for her baby, and working women do not feed or express milk during working hours. In other instances, women are not allowed to work and do not receive enough financial support from the father to buy food for older children. In rural areas where farming is the main source of food and income, drought and harvest cycles can impact food availability. This range of economic challenges suggests that a variety of approaches is required to address the particular challenges of different communities. Infant and young child feeding programs may be able to directly influence some of these challenges by educating people about inexpensive sources of good nutrition, promoting extended breastfeeding, and engaging fathers. To achieve maximum impact, infant and young child feeding programs should link with agricultural, food security, and income-generation programs.

Solutions recommended by participants

Respondents had several suggestions for initiatives that might improve infant and young child feeding practices. The most common suggestions can be grouped into the following categories:

- ***Improving male involvement:*** A man's role is widely believed to be limited to providing enough food for his wife and children. Better engagement of men and fathers was among the most frequent suggestions for improving infant and young child feeding practices. This suggestion logically follows the finding reported above that husbands are among the most influential people in determining how a woman feeds her child. Some respondents suggested that fathers be encouraged to become involved in infant and young child feeding and that they be given information through seminars or father-to-father support groups. Several others implied the need for a more general change in the way husbands and wives relate and take responsibility. It was suggested that men and women need help with how to relate better to each other and that men need to better provide for their families. In several areas, alcohol abuse was reported as a major challenge. These findings suggest that in some places, it may be beneficial to simply educate men about infant and young child feeding. Others might need programs designed to change gender roles and expectations.
- ***Increasing economic opportunities for women:*** As poverty is perceived as a major hindrance to improving infant and young child feeding, many respondents suggested that improving the economic situation of families is critical. While some called for direct government assistance, several people suggested increasing employment opportunities. This might be achieved through an initiative suggested by several people, which is the creation of women's support groups that can participate in income-generating activities. Fathers also reportedly need more employment opportunities, and one group of men suggested providing training on how to budget scarce resources.
- ***Increasing access to counseling and support:*** A variety of suggestions were made that relate to improving access to information and support. Participants asked for better and more accessible counseling during lactation and weaning, and for the community to be educated about infant and young child feeding. The demand for this kind of support could be met by community-based lactation counselors or through community-based mother support groups managed by trained facilitators. For the greatest impact, counselors and facilitators should be people identified as both influential and trusted, such as older mothers and grandmothers. There was also a suggestion to educate women on time management and one for lactating women to be encouraged to consult with each other. These suggestions reveal insight into the fact that simply knowing about recommended infant and young child feeding practices is not enough. In addition, women require support from each other and help with managing their heavy workloads in order to implement best practices. Providing training on certain life skills, such as time and budget management, may be a critical component of all infant and young child feeding education initiatives.

5.5 Infant feeding within the context of HIV

Respondents generally understood one of the most important messages given during infant and young child feeding counseling for HIV-positive women, which is that mixed feeding is dangerous. However, beyond avoidance of mixed feeding, there was inconsistency in the way the feeding recommendations for HIV-positive women were understood. Some respondents favored

formula, some favored breastfeeding, and others favored breastfeeding but only for a short time. The range of beliefs reported suggests a general lack of knowledge among the population about optimal infant and young child feeding within the context of HIV and the need for wider dissemination of national recommendations.

HIV-positive women were reported to face even greater challenges with infant and young child feeding than other women. They often have little family or community support and experience stress about infecting their children through breastmilk or being stigmatized for not breastfeeding. It is very concerning that exclusive breastfeeding is associated with being HIV positive, so not giving other foods can also be a source of stigma. In this way, incorrect infant and young child feeding beliefs and practices in the general community are spilling over and potentially leading to dangerous practices among HIV-positive women who fear being identified as HIV positive. Exclusive breastfeeding should be promoted as the best option for all women in Kenya. Radio and television advertisements could widely disseminate that message and help to dispel the belief that exclusive breastfeeding is correlated with HIV-positive status.

6. Geographic-specific recommendations

The conclusions and recommendations presented above represent common themes across the assessment areas and can therefore be widely generalized to most areas in Kenya. In addition, each geographic area had certain unique characteristics and findings for which specific programming recommendations can be made and messages can be developed.

Nairobi Province

Kibera. In this slum area, commercial mixes such as Cerelac and Nan were idealized by the respondents. The following messages need to be incorporated:

- Breastmilk is nutritious even in the face of food insecurity.
- Breastmilk is enough for the first six months; defer solid food.
- Illustration of how a healthy baby looks.
- Spouses/men should support women in exclusive breastfeeding.
- Community support is important in infant and young child feeding.
- It is important to have a hospital delivery (as opposed to a home delivery).
- Expressing milk can be helpful.

Buruburu. This is an urban area of primarily middle-class residents. Availability of resources has led to introduction of solid foods early. Some of the messages for this area:

- Working mothers may find it helpful to express breastmilk.
- There is a spectrum of appropriate complementary foods based on the age of the child (illustrate accordingly).
- A variety of locally available flours are appropriate to use for porridge. (Identify these and demystify/deglamorize the pre-made cereal mixes.)
- Maternal nutrition is important.

Western Province

Mumias. This town is located along the sugar cane belt. Messages should focus on:

- Demystification of the evil eye (*bikhokho*). Currently, the health worker is usually the last one to be consulted, after traditional cures have failed. Women should be encouraged to visit the hospital and not fear that children could be suffering from the evil eye.
- The benefits of expressing breastmilk for working mothers.
- Appropriate complementary feeding practices from 6 to 24 months.
- The importance of community support for lactating women and ways to offer support.
- The importance of a hospital delivery (as opposed to a home delivery).

Rift Valley Province

Kapsabet. This is an area in which men are not supposed to be involved in childcare. Messages specific to this area should involve:

- Appropriate complementary feeding practices from 6 to 24 months.
- The benefits of expressing breastmilk for working mothers.
- Male and community support for lactating women.
- Infant feeding within the context of HIV.

Oloitokitok. During the rapid assessment, some respondents incorrectly said that there was no HIV in this area. Messages specific to this area should involve:

- The dangers of introducing prelacteal feeds (ghee and herbal concoctions).
- The importance of getting tested for HIV.
- Infant feeding within the context of HIV.
- Appropriate complementary feeding practices from 6 to 24 months.

Nyanza Province

Rachuonyo. Infant and young child feeding practices in this province seem good. The use of prelacteal feeds was not rampant. This could be due to the high prevalence of HIV and PMTCT efforts in this province. Messages specific to this area should involve:

- Appropriate introduction of complementary foods based on the child's developmental stage.
- The importance of expressing breastmilk by young mothers going to school and leaving their children with grandparents.

Kisii. This area is agriculturally rich. Messages specific to this area should involve:

- The dangers of prelacteal feeds (e.g., lisuza, an herbal concoction).
- Appropriate introduction of complementary foods based on the child's developmental stage.

Eastern Province

Mwingi. This area is faced with challenges of food insecurity. The messages that would benefit this area are:

- The importance of treating water and following other hygienic practices during infant and young child feeding. Storage messages could be included.
- Appropriate introduction of complementary foods based on the child's developmental stage.
- The dangers of botulism associated with giving honey to children.
- The nutritional benefits of breastmilk even in the face of food insecurity.
- For health workers, appropriate food supplements for supplementary feeding programs.
- Demystification of goat's milk and its association with childhood severe protein-energy malnutrition.

Coast Province

Mombasa. Messages that would benefit this coastal urban town include:

- Appropriate introduction of complementary foods based on the child's developmental stage.
- Explanation that locally available foods meet the nutritional needs of children; commercial mixes are not needed, especially where resources are constrained.

Kilifi. In this coastal rural province, PLAN International has done considerable work to improve infant and young child feeding practices, including training CHWs who have passed on the relevant messages. There are also active mother-to-mother support groups to help women with malnourished children. In this area, the biggest need is to translate cognitive knowledge into practice.

Central Province

Maragua. Women who are HIV positive here receive overwhelming support from an NGO to choose replacement feeding. In some instances, there is a spillover effect on women who are not HIV positive, which has a negative effect on exclusive breastfeeding. Here, messages should:

- Demystify/deglamorize the cereal mixes that are widely used.
- Widely disseminate messages about the advantages of exclusive breastfeeding.
- Work with the NGO supporting replacement feeding to minimize the spillover effect and ensure that only qualified women choose replacement feeding.