



Photos: Kati Erickson (left and center) and Josephine Nyambe (right)

ZAMBIA

# FORMATIVE ASSESSMENT OF INFANT AND YOUNG CHILD FEEDING PRACTICES AT THE COMMUNITY LEVEL IN ZAMBIA

NOVEMBER 2010

This document was produced through support provided by the United States Agency for International Development, under the terms of Cooperative Agreement No. GPO-A-00-06-00008-00. The opinions herein are those of the author(s) and do not necessarily reflect the views of the United States Agency for International Development.

IYCN is implemented by PATH in collaboration with CARE;  
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## Acknowledgments

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Thank you to everyone who contributed to the assessment. Dr. Augustus Kapungwe served as the principal investigator and led the research team in collecting data. The Provincial and District Health Offices in Central, Eastern, and Lusaka provinces facilitated the implementation of the formative research and health facilities staff led the recruitment and identification of study participants. We appreciate all the study participants who shared valuable insights and experiences during in-depth interviews and focus groups discussions.

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## Acronyms

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AIDS	acquired immunodeficiency syndrome
CHV	community health volunteer
DHS	Demographic and Health Survey
HIV	human immunodeficiency virus
IYCN	Infant & Young Child Nutrition Project
TB	tuberculosis
USAID	United States Agency for International Development
WHO	World Health Organization

## Executive summary

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The Infant & Young Child Nutrition (IYCN) Project is the flagship project on infant and young child nutrition of the United States Agency for International Development. 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.

In Zambia, the IYCN Project is providing technical assistance to the Government of Zambia and the US President's Emergency Plan for AIDS Relief (PEPFAR) partners to support infant and young child feeding within the context of HIV through training and materials development for health workers and community volunteers. IYCN is helping to improve the training curriculum, strengthen training sessions, design a supportive supervision system, and train providers in four provinces. Additionally, IYCN supports nutrition counseling and clinical referrals for HIV-positive mothers, their children, and other orphans and vulnerable children through activities at the community level in surrounding catchment areas.

To inform the rollout of a community intervention, IYCN needs to ensure that the key messages and community activities directly target the main barriers to optimal infant feeding practices at the community level. Following on the results of the 2007 Zambia Demographic and Health Survey, this formative study was intended to fill gaps in understanding of caregivers' practices. In particular, the study explored factors that influence a mother's ability to exclusively breastfeed for the first six months of the infant's life and factors that influence appropriate complementary feeding for children 6 to 23 months of age. The overall purpose was to provide information to facilitate effective implementation of IYCN's planned interventions to improve infant and young child feeding practices and programs.

The study was conducted in the catchment areas of six health facilities in Central, Eastern, and Lusaka Provinces. The study sites represented urban (Lusaka and Kabwe), peri-urban (Chibombo and Katete), and rural (Mkushi and Chipata) settings.

The objectives of this study were to:

- Describe the key influencers of infant and young child feeding practices in targeted areas in Zambia.
- Examine the barriers and constraints to the uptake of recommended feeding and caring practices.
- Learn more about the types of foods used for complementary feeding and the age of children when these foods are introduced.
- Identify feasible and effective channels for promoting recommended infant and young child feeding practices.

The project collected information during focus group discussions and in-depth interviews. A total of 24 focus groups were held with (a) mothers of children less than 6 months of age, (b) mothers of children 6 to 23 months old, (c) fathers of children less than 2 years of age, and

(d) grandmothers of children less than 2 years old. Each group had 6 to 12 participants. In addition, researchers conducted 36 in-depth interviews with a range of other informants, including community leaders, representatives from community-based organizations, and community health volunteers. Key findings from focus groups and interviews are outlined below.

## **Breastfeeding**

Breastfeeding is recognized as extremely important by mothers and other members of the community and remains the first choice for infant feeding for most mothers. Bottle-feeding is very rarely practiced in the study communities. Nevertheless, some mothers in the study sites said they were unable to exclusively breastfeed for six months, as recommended. Barriers mentioned include traditions that encourage early introduction of water and watery foods, time constraints such as work responsibilities, and uncertainty about whether breastmilk is sufficient to meet infants' nutritional needs until six months of age. Confusion regarding HIV and breastfeeding is another factor that prevents some mothers from exclusively breastfeeding. Also, although some participants indicated awareness and acceptance of the practice of expressing breastmilk, most were strongly opposed to it as they felt it was not a natural or hygienic way to feed infants.

## **Complementary feeding**

Participants gave various reasons for initiating complementary feeding—chiefly the need to satisfy an infant's hunger when parents perceive that breastmilk is not enough for the child. Also, parents mentioned introducing watery foods to infants younger than six months as a way of providing food when the mother is not available to breastfeed. The age range for introducing foods was as early as one month of age to six months. A few respondents were aware of the value of enriching children's foods with fat or protein, but it was common to feed thin, unenriched corn porridge to children. Participants generally agreed that complementary feeding is not meeting the needs of young children in the study communities, primarily due to their perception that most families cannot afford the recommended foods for their children.

## **Influencers of infant and young child feeding**

Participants said health facilities are the main providers of information on infant and young child feeding. This guidance is provided through under-5 clinics, antenatal care, and a variety of outreach activities. Participants also mentioned community-based organizations and programs as sources of information. In addition to health center staff, participants also mentioned community leaders, traditional birth attendants, and community health volunteers as sources of guidance. At the household level, however, mothers are the main influencers of infant and young child feeding. Although grandmothers and fathers expressed strong interest in supporting the care and nutrition of young children, mothers did not cite them as important influences. The media—particularly radio and, in some areas, newsletters or brochures—was also a commonly cited source of information on infant and young child feeding.

## **Recommendations**

Based on the study findings, recommendations include:

1. Develop innovative strategies to increase the belief that breastmilk is sufficient to provide an infant from birth to 6 months with all the calories, nutrients, and water needed.

2. Increase awareness that even mothers whose diets are not optimal (in terms of calories and diversity) can provide adequate breastmilk for their babies.
3. Intensify efforts to train health workers and community health volunteers about the relative risk of an HIV-positive woman breastfeeding versus the risks of artificially feeding her infant.
4. Address the common belief that expressing breastmilk is a taboo and unnatural way to feed infants by increasing awareness of some families' successful experiences with expressing and feeding breastmilk. Also, increase women's skills to express breastmilk and maintain sanitary conditions (e.g., heat treatment, use of a cup). This approach will address how best to feed young infants when women need to work and manage other commitments that cause them to be separated from their infants.
5. Decrease the perception that families cannot afford adequate complementary foods by promoting high-nutrient, low-cost foods that are commonly available to Zambian families.
6. Address families' economic constraints in affording food for their children by linking them with income-generating activities and agricultural support.
7. Develop programmatic linkages with organizations that run community programs that could include infant and young child feeding messages and activities.
8. Incorporate fathers and grandmothers into the design and implementation of programs and projects to improve the well-being of infants and young children.
9. Use radio to reach a large segment of mothers and other caregivers with information on optimal infant and young child feeding practices and messages that address social norms/beliefs that impede good infant and young child feeding practices.
10. Encourage, duplicate, or scale-up the use of publications distributed at health facilities to increase knowledge of optimal feeding practices for infants and young children.
11. Conduct additional research to investigate informational gaps related to (a) amounts and nutritional values of locally available foods fed to infants and young children; (b) dietary practices (e.g., nutrient composition of diets); (c) socioeconomic and demographic profiles of households that are unable to afford food and those that are able to; and (d) constraints, both financial and human, faced by organizations/institutions implementing infant and young child feeding programs. The data will be valuable for targeting evidence-based programming to the nutritional challenges in Zambia.



## Background

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The Infant & Young Child Nutrition (IYCN) Project is the flagship project on infant and young child nutrition of the US Agency for International Development (USAID). The five-year project (2006-2011) aims to improve nutrition for mothers, infants, and young children, and promote HIV-free survival of infants and children. IYCN builds on 25 years of USAID leadership in maternal, infant, and young child nutrition.

In Zambia, the IYCN Project is providing technical assistance to the Government of Zambia and US Government/US President's Emergency Plan for AIDS Relief (PEPFAR) partners to support infant and young child feeding within the context of HIV through training and materials development for health workers and community volunteers. IYCN is supporting training of health providers in infant and young child feeding within the context of HIV, providing technical assistance to improve the national infant and young child feeding curriculum, strengthening training sessions, designing a supportive supervision system, and training providers in four provinces. Additionally, IYCN supports nutrition counseling and clinical referrals for HIV-positive mothers, their children, and other orphans and vulnerable children through activities at the community level in surrounding catchment areas of participating health clinics. IYCN is also leading the development of an infant and young child feeding training package for community health workers. The project has a strong behavior change communication component that integrates community behavior change messages on maternal, infant, and young child nutrition.

To inform the rollout of the community-level intervention, IYCN needs to ensure that the key messages and community activities directly target the main barriers to optimal infant feeding practices. Following the results of the 2007 Zambia Demographic and Health Survey (DHS), this formative study was intended to fill gaps in understanding caregivers' practices. In particular, the study explored factors that influence a mother's willingness and ability to exclusively breastfeed for the first six months of her infant's life and factors that influence appropriate complementary feeding for children 6 to 23 months of age.

The DHS indicated that virtually all infants (98 percent) are breastfed in Zambia. Furthermore, exclusive breastfeeding rates for children less than 6 months old have improved from 40 percent in 2002 to 61 percent in 2007. Although this improvement is significant, additional efforts are needed to sustain and increase rates of exclusive breastfeeding. It is an extremely common practice to offer water to a baby during the first months of life. Between 5 and 6 months of age, 51 percent of children are already receiving foods in addition to breastmilk, a practice that puts them at risk of diarrhea and also potentially displaces breastmilk with watery, starchy foods with low nutritional density. Frequency of complementary feeding is also problematic, as only 56 percent of breastfed children aged 6 to 23 months are fed the recommended number of times per day. Particularly worrisome is that only 22 percent of non-breastfed children are fed with the recommended frequency, and very few (15 percent) consume dairy products. This group of non-breastfed children is likely to include a higher percentage of children born to HIV-exposed mothers who practice early weaning. Overall, only 37 percent of Zambian children 6 to 23 months are being fed in accordance with international guidelines.

It is not surprising, therefore, that the 2007 DHS found that 45 percent of children less than 5 years of age are stunted, likely a result of both chronic undernutrition and frequent illness. Results also indicated that the rate of stunting rises markedly during the first 2 years of life, increasing from 18 percent among children less than 6 months of age to 26 percent among those 6 to 8 months and then up to 59 percent among those aged 18 to 23 months. These data are especially troubling because the period from birth to 2 years of age is a time of rapid growth and high nutritional requirements, when most permanent damage due to malnutrition occurs. Infants and young children are also at high risk of infection during this period. These combined factors make this age group especially vulnerable to growth failure, and therefore interventions to prevent stunting should be targeted to this age group.

The overall purpose of this study was to provide information to facilitate the design and implementation of community interventions by the IYCN Project to improve infant and young child feeding practices and programs. The qualitative nature of the study enabled extensive exploration of factors that promote and inhibit optimal infant feeding practices.

The study was conducted in the catchment areas of six health facilities in Central, Eastern, and Lusaka Provinces. The study sites represent urban (Lusaka and Kabwe), peri-urban (Chibombo and Katete), and rural (Mkushi and Chipata) settings.

The objectives of this study were to:

- Describe the key influencers of infant and young child feeding practices in targeted areas in Zambia.
- Examine the barriers and constraints to the uptake of recommended feeding and caring practices.
- Learn more about the types of foods used for complementary feeding and the age of children when these foods are introduced.
- Identify feasible and effective channels for promoting recommended infant and young child feeding practices.

## Methodology

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Researchers collected data through focus group discussions and in-depth interviews. Local health facility staff facilitated recruitment of focus group participants, who they categorized into four groups:

- Mothers of children up to 6 months of age.
- Mothers of children 6 to 23 months of age.
- Fathers of children up to 23 months of age.
- Grandmothers of children up to 23 months of age.

The project team conducted six focus groups (one in each catchment area) with each of the four groups. Before the discussions started, the research team introduced themselves, explained the purpose of the study, and read the consent form to the group. Participants were given an opportunity to opt out, and the focus groups were held only with those who verbally consented. Each group had 6 to 12 participants. Discussions were conducted in the first language of the participants.

Clinics and community-based organizations in the study areas identified participants for the in-depth interviews. Researchers conducted a total of 36 in-depth interviews with a range of participants who each provided written informed consent prior to the interviews. Participants were drawn from the following groups:

- Community leaders (e.g., heads of schools, members of neighborhood health committees, local government representatives, heads of community-based organizations).
- Community health volunteers (CHVs).

Research protocols and consent forms were approved by the School of Humanities and Social Sciences Ethics Committee of the University of Zambia.

All interviews and focus group discussions were audio-taped, transcribed, and translated into English. The data were reviewed for main themes and then coded by theme and subthemes. The main themes were infant and young child feeding practices, sources of information, key influencers, barriers and constraints to the uptake of recommended practices, timing and types of foods used for complementary feeding, age of child when complementary foods are introduced, and channels for promoting recommended infant and young child feeding practices.

Experienced data collectors conducted the focus group discussions and in-depth interviews under the supervision of the study team supervisor. Before beginning the study, the data collectors participated in two days of training designed to familiarize them with the purpose of the study and the content of the data collection instruments. Appropriate techniques for conducting interviews and focus group discussions were also discussed.

## Results

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### Breastfeeding

#### Initiation of breastfeeding

The 2007 DHS found that 57 percent of Zambian mothers initiated breastfeeding within the first hour and 93 percent within the first day. Interviewed community health workers provided further details about this practice:

*They start breastfeeding a newborn baby one hour after the baby is born. (CHV, Katete)*

*Mothers in this community breastfeed their babies soon after delivery. This is what is taught to them. Immediately after the baby is born and starts crying, the mother breastfeeds it. (CHV, Kabwe)*

#### Bottle-feeding

Bottle-feeding is rarely practiced (only 3 percent according to the DHS), but mothers in focus groups mentioned several circumstances in which bottle-feeding may be used, such as when the mother is sick, she goes back to work, or the child is premature. However, bottle-feeding is not considered to be clean:

*It's not good to give bottle-feeding to children because those bottles contain a lot of diseases, and the baby can be sick. In most cases in our community, we are advised not to use feeding bottles for our babies because we don't know how to keep the bottles clean. (Father, Lusaka)*

#### Frequency of breastfeeding

Results of focus group discussions suggested that there is no fixed schedule for breastfeeding an infant, and feeding is on demand. The DHS found that 93 percent of infants less than 6 months old are fed six or more times per day, with frequent breastfeeding during the night. In focus group discussions with mothers of children less than 6 months old, mothers described the frequency of breastfeeding young babies:

*We have no specific time set for breastfeeding the baby. We breastfeed whenever the baby wants to. (Mkushi)*

*We breastfeed as many times as the child wants. (Kabwe)*

*Babies eat any time of the day. So it is difficult to count the number of times they eat. (Chipata)*

*It is difficult to count that. We just breastfeed our children any time, and every time they show signs, then we breastfeed them. (Chipata)*

*A baby should be breastfed six times a day. (Chawama, Lusaka)*

## **Exclusive breastfeeding**

When asked about the ability of mothers to exclusively breastfeed their babies for six months, respondents indicated that they are aware of the advice given at health facilities; however, only some women successfully manage to exclusively breastfeed:

*We were advised that the mother's breastmilk has enough water, and there is no need to give the baby water. We were also advised that the baby's stomach between 0 and 6 months is not ready for solid foods. For those who have enough breastmilk, we don't even think of giving the baby water during the first six months. (Grandmother, Mkushi)*

*We teach both the expectant mothers and mothers who come for under-5 care that they need to practice exclusive breastfeeding because we know the importance. Exclusive breastfeeding should be encouraged for 0 to 6 months and immediately after delivery. (Community leader, Lusaka)*

*I have now reared two grandchildren. Both of them until 6 months never drank any water, according to the instructions from the health center that we should not give babies water until they reach 6 months. (Grandmother, Chibombo)*

*This child was exclusively breastfed for six months, never received any water, not even with a teaspoon, and her weight was very okay. They were teaching us that when the child is still young, she should not be given water or food, because these days, there are too many illnesses found in water and solid food. (Mother of child 6 to 23 months, Lusaka)*

Other respondents mentioned that they did not exclusively breastfeed for six months:

*We start giving water sometimes even at 1 month. This happens when bathing the baby. We put a few drops of water on the baby's tongue. It is easy for the mother to know that the baby is ready to start eating by the baby's gestures. (Mother of child 6 to 23 months, Kabwe)*

*We are taught not to give any other food or fluids to a baby less than 6 months. Some of us cannot manage because we pity the child, especially when he is crying. We feel he needs water, we pity the child, and we fail to keep the child the whole day only on breastmilk without water. (Mothers of children 6 to 23 months, Mkushi)*

## **Barriers/constraints to exclusive breastfeeding**

Although respondents (in the section above) expressed agreement with the advice to exclusively breastfeed and mentioned successful experiences, it was very common during the focus groups to hear about reasons why it is difficult or impossible to exclusively breastfeed. The 2007 DHS indicates that exclusive breastfeeding continues to be a challenging behavior to practice. About 8 percent of infants are fed water during the first month of life. By 4 to 6 months of age, 51 percent of children are consuming other foods, such as thin corn porridge, in addition to breastmilk. Some of the barriers to exclusive breastfeeding are outlined below.

### ***Traditional beliefs that breastmilk is not enough***

Community leaders, CHVs, grandmothers, and fathers mentioned that some women do not exclusively breastfeed because of traditional beliefs that children need water and food before 6 months of age:

*In our time, exclusive breastfeeding didn't happen. We are hearing this new instruction from here [clinic] that the child should now be breastfed in this way. (Grandmother, Chibombo)*

*It is not in our tradition. Elders did not know that babies should not drink water at that age. They knew that as soon as the baby is born they started...water for the baby, so this time, things have changed. We are advised to give babies breastmilk alone without water up to the age of 6 months, so it is really out of traditions. (Father, Mkushi)*

*I was born in 1939. We were brought up by mother's breastmilk, but we used to be given water even before 6 months. There was a cup of water for the baby being carried wherever the mother went. (Father, Mkushi)*

### ***Perception that some mothers do not produce enough milk for their children***

All categories of respondents noted that some women feel they do not have sufficient milk to breastfeed exclusively for six months:

*It is possible for others to breastfeed their baby exclusively for six months, while for some, it is not. This depends on how much milk the mother has. According to the advice given at the clinic, it is true that children who breastfeed exclusively for six months do not have health problems, but what causes other mothers to give other foods during that time is the lack of breastmilk. (Mother of child less than 6 months, Chawama, Lusaka)*

*We advise mothers to exclusively breastfeed from 0 to 6 months, but there are some women who don't adhere to what they are taught. You find some mothers giving porridge to a 2-month-old baby with an excuse that she doesn't have enough breastmilk. (CHV, Mkushi)*

### ***Perception that a mother's poor diet causes her to not have enough milk***

Fathers particularly mentioned that some women do not produce enough milk or nutritionally adequate milk because they do not consume enough food themselves. They also noted that without a good diet the breastfeeding mother's health will suffer:

*Some women do not have enough breastmilk and lack food. In most cases in places like this, we do not eat a balanced diet; we eat almost the same type of food. That is why at times you find breastfeeding mothers losing weight and the baby losing weight, too. All this is caused by lack of proper food. (Father, Chipata)*

*The challenges are that, although mothers breastfeed babies at that age, they don't have enough food to eat to produce nutritious milk for the baby. (Community leader, Kabwe)*

*In most cases, the reason behind women failing to breastfeed the baby is lack of food. Some husbands don't work, some do not earn enough even if they are working, so women are not well fed and they quickly resort to introducing solid foods, such as nshima, to the baby before 6 months because the breastmilk is not enough for the baby. (Father, Kabwe)*

The excerpts above clearly indicate an awareness that nursing mothers need extra calories and nutrients while they are breastfeeding. However, the comments also show that respondents are not aware that a woman can continue to produce adequate breastmilk for her infant unless she is severely food constrained, such as under famine circumstances.

### ***Belief that breastmilk is not sufficient for six months***

Respondents also mentioned that there are misunderstandings about whether breastmilk is really sufficient to meet a baby's needs during the first six months:

*Some mothers manage, while the majority of them do not. Most of those who manage are those who have been to school, while the majority of mothers who have never been to school believe that a child cannot survive by taking breastmilk alone. So, lack of education is an obstacle to breastfeeding children up to 6 months. (CHV, Katete)*

*In my case, I felt as though I was being unfair to the baby because I thought she also gets thirsty and also is not getting full on breastmilk only. So I gave water and porridge. (Mother of child 6 to 23 months, Chawama)*

### ***Caregiver's perception that the child is "asking" for food and water out of need***

Some interviewees mentioned that mothers feel guilty because they feel the child is watching them eat, and it is unkind not to give water to even a very young baby:

*Not all mothers adhere to the teachings of exclusive breastfeeding during the first six months, especially when a mother is eating food or drinking water while the baby is watching. They believe that the child is also thirsty and needs water. (CHV, Lusaka)*

*Even though the clinic advises exclusive breastfeeding, we find it difficult to follow the advice especially when the baby is looking at you when you are drinking water. You feel as though he is thirsty. So you give him some water. (Mother of child 6 to 23 months, Chawama)*

*Sometimes, when the mother is drinking water, or eating something, the baby starts crying for it, so it is very difficult for a mother to deny her child what he wants. (Mother of child 6 to 23 months, Mkushi)*

*When the baby is born, the mother may not be tempted to give other foods, but as he grows, the mother is tempted to, especially when the baby looks at the mother while eating. (Mother of child 6 to 23 months, Kabwe)*

### ***Time constraints/mothers' work responsibilities***

Mothers identified time constraints as another obstacle to exclusive breastfeeding, including work responsibilities:

*Those who usually manage are those who do not work. Otherwise, it is difficult for a woman who works to exclusively breastfeed for six months. (Mother of child 6 to 23 months, Katete)*

*Time is also a factor; we do not have enough time to only give breastmilk to our children for six months. (Mother of child 6 to 23 months, Katete)*

### ***Exclusive breastfeeding and HIV status***

Although health workers and CHVs are instructed to counsel HIV-positive mothers to exclusively breastfeed their infants for six months unless replacement feeding is affordable, feasible, acceptable, sustainable, and safe, all categories of respondents indicated confusion regarding the recommendation for an HIV-positive woman to breastfeed:

*In the past, babies were breastfed up to two years, but with the HIV pandemic, mothers are advised to stop breastfeeding the babies when they start teething. So mothers feed their babies according to their status. (Grandmother, Chibombo)*

*Most mothers do not manage because they have the HIV virus. (Mother of child 6 to 23 months, Katete)*

*Illnesses like HIV make it impossible for women to exclusively breastfeed their children because they are afraid the baby will be sick. (Mother of child less than 6 months, Chipata)*

*I give my baby soya. This is because I'm HIV positive and on TB [tuberculosis] treatment. (Mother of child less than 6 months, Chipata)*

*For me, I think AIDS is a big factor when it comes to exclusively breastfeeding children up to the age of 6 months. How do you expect an HIV-positive mother to exclusively breastfeed for six months continuously? The baby will also be sick. (Mother of child less than 6 months, Katete)*

Some discussants were aware of the recommendation for mothers to breastfeed for six months regardless of the HIV status of the mother or infant and some were not:

*When the child is HIV positive, you can exclusively breastfeed, but not children who do not have HIV. (Mother of child 6 to 23 months, Katete)*

*We advise our children to be exclusively breastfed, especially for those who are HIV positive. (Grandmother, Katete)*

Some CHVs share the idea that babies born to HIV-positive mothers should not be breastfed. When asked what kind of advice she would give to a mother who is HIV positive but whose infant is not, a CHV responded:

*The mother should stop breastfeeding. (CHV, Mkushi)*

Asked further what kind of advice she would give to a mother who is HIV positive and whose baby is also HIV positive, she gave the same response:

*The child should not be breastfed. (CHV, Mkushi)*

### ***Expressing breastmilk for infant feeding***

Because mothers inevitably spend some time away from their infants, either for work outside the home or due to other responsibilities, it is recommended that they express breastmilk and leave it for another caregiver to feed the baby. Expressing breastmilk both provides an uninterrupted source of milk to the baby and ensures that the mother can maintain her milk supply when



separated from her baby. Some respondents indicated that they had been taught about the practice at health facilities and mentioned having a positive experience within their family:

*We have been taught at the clinic. (Mother of child less than 6 months, Chibombo)*

*The clinic advises us to express the milk, especially for working mothers. We are advised to express the milk in a clean cup and leave instructions on how the baby has to be fed, and that the milk should not be kept up to the evening or late in the night because it will go sour. (Mother of child less than 6 months, Kabwe)*

*I also have a granddaughter who is working and has a baby. At first she fed the baby with milk from the shops, and the baby developed diarrhea. But since she started leaving the baby with breastmilk, the baby is healthy and has stopped diarrhea. (Grandmother, Katete)*

*It is all right according to my own experience. I have a granddaughter who is in grade 10 and has a baby. She leaves her baby with her mother and expresses breastmilk for her. The baby is very healthy. (Grandmother, Katete)*

Most respondents, however, were strongly opposed to the practice of expressing breastmilk. Many participants said they consider the practice of expressing milk abnormal, unnatural, and unhygienic and therefore detrimental to the health of an infant. Although the following excerpts are not exhaustive, they clearly indicate the strength of resistance to expressing breastmilk:

*It is total taboo for such a thing to happen in this community. That idea cannot even be tolerated by our husbands. That's why we go with our babies to the fields, so that when they get hungry and they want to eat, we are there to give them breastmilk. (Mother of child 6 to 23 months, Katete)*

*There are no such things here, and we do not do it. (Mother of child less than 6 months, Kabwe)*

*No, we cannot allow such a thing to happen. A baby is only supposed to breastfeed from a human breast. We have never seen or heard of such a thing here. (Father, Chipata)*

In addition, some mothers expressed lack of confidence in the caregiver's capacity to appropriately, adequately, and hygienically feed the infant in the mother's absence:

*When we seriously look at this issue, it does not seem normal for a mother to express the milk and leave it with the maid to feed the baby, because some maids are untidy and may not keep the milk properly. It is better the maid takes the baby to the mother to breastfeed if the working place is near the home. (Mother of child less than 6 months, Kabwe)*

*There is no way a mother can express breastmilk for fear that the milk may go sour. (Mother of child less than 6 months, Mkushi)*

*It doesn't happen. It cannot happen. To express breastmilk and put it in a cup! The milk goes bad. I have never seen it traditionally that breastmilk is expressed to give to the baby, because the milk gets cold. (Grandmother of child 0 to 23 months, Chibombo)*

*The discussion or scenario that she expresses milk into a cup—that can never happen! Expressing milk because the mother has gone out?—not at all! Because the mother has left, the expressed milk becomes spoiled as it has left the mother's warm body and*

*becomes cold. How can someone give it to the baby? I wouldn't even give that expressed milk to the baby (even if she expressed it deliberately and left it with me that I should give it to the baby). (Grandmother, Chibombo)*

*It is not a good practice; the danger is that when the mother leaves that milk, the baby might not be given the milk by the one who remains behind. And to some extent, the milk might get contaminated by the time it is being given to the baby. (Father, Chipata)*

*It is mainly because we do not have a responsible person to leave the child with. If one has a responsible person, the mother can express the milk and leave it in a cup for the baby, with instructions to the person that when feeding the baby, the cup should be warmed in hot water. (Caregiver of child less than 6 months, Mkushi)*

*I think that once the milk is expressed, then the people you leave the milk with to give to the baby may not keep it properly in that cup. You may think that they will look after milk safely, but instead they may keep it carelessly. They may just leave it open in that cup, and houseflies may fall into that milk. (Grandmother, Chibombo)*

Further, participants said they consider expressing breastmilk unnecessary because infants should always be with their mothers:

*We do not leave our babies; we normally go with them. We can only leave the baby if necessary when you are not far from home. (Mother of child less than 6 months, Mkushi)*

*We don't leave our babies with anybody else. We go with them to make sure that they are well fed. (Mother of child less than 6 months, Kabwe)*

*It is the duty of every woman who has a baby to make sure that the baby they have is breastfed straight from the breast. (Mother of child less than 6 months, Chipata)*

*I don't leave the baby; I carry him along. (Mother of child less than 6 months, Chawama)*

*One month after delivery, the child is considered strong enough to be carried wherever the mother goes. (Mother of child less than 6 months, Mkushi)*

### ***Feeding arrangements in absence of mother***

In situations in which mothers cannot be with their infants, there seems to be a tendency to resort to other arrangements for infant feeding:

*Women leave the child with enough food, like porridge, if they are going out. (Kabwe)*

*They leave other people in charge, and they make sure that the baby is given porridge when they leave. (Chibombo)*

*Some mothers make sure that they feed the baby on porridge before they go, and come back before the baby wakes up. (Chipata)*

*If the worse comes to the worst, we make sure that we prepare and give the babies porridge before going anywhere. At least porridge can stay for a long time. (Katete)*

Fathers and other mothers confirmed this practice:

*Women leave the child with enough food, like porridge, if they are going out. They leave other people in charge and they make sure that the baby is given porridge when they leave. Some mothers make sure that they feed the baby on porridge before they go, and come back before the baby wakes up. (Father, Chipata)*

*When I dare leave my baby, I leave him with an older sibling to whom I leave instructions for how to cook porridge and feed the baby. When I come home, I first ask if the baby was fed before I settle to breastfeed him. (Mother of child 6 to 23 months, Chawama)*

*Those who go to work buy milk for their babies and leave it home to be prepared. (Mother of child 6 to 23 months, Kabwe)*

### **Complementary feeding**

For children between 6 and 23 months of age, WHO recommends that breastfeeding be accompanied by consumption of nutritionally adequate, safe, and appropriate complementary foods that help meet nutritional requirements. Appropriate complementary foods can be readily consumed and digested by the child from 6 months onward and provide nutrients—energy, protein, fat, vitamins, and minerals—to help meet the growing child’s needs.

Excerpts below indicate the ages at which children are introduced to complementary feeding, the types and preparation of food, and the frequency of complementary feeding.

### **Timing and reasons for introducing complementary feeding, types and preparation of food, and frequency of feeding**

*What most mothers do is that the moment the baby starts crying too much, they introduce other food, like porridge; this is because they believe that a child who cries too much is not satisfied with breastmilk alone. (CHV, Katete)*

*Some children start eating at 4 or 6 months, and some start earlier than that. It happens when the mother does not have enough breastmilk. (Mother of child 6 to 23 months, Mkushi)*

*I started giving him porridge at 4 months. I soaked mealie meal, strained the water, and then cooked very light porridge. I also gave water. (Mother of child less than 6 months, Chibombo)*

*At the beginning, you cook very light porridge and feed the baby gradually until it gets used to it. I gave my older child porridge at 3 months because this exclusive breastfeeding instruction is very recent. So I have not introduced water and foods to my young infant. (Mother of child less than 6 months, Chibombo)*

*When I cook porridge with pounded groundnuts on the first day, I add kapenta or raw eggs the next day. (Mother of child less than 6 months, Chibombo)*

*At 6 months, I gave her very light porridge; at 8 months, nshima; and at 12 months, nshima, rice, and tea. At 1 year, she eats rice. The baby enjoys rice and nshima, but she doesn’t like porridge. (Mother of child 6 to 23 months, Chawama)*

*Most mothers start giving other foods to their children at 6 months, but not all mothers follow that advice. Most of them start at 3 months. Some start giving their children other foods at 2 months. (Grandmother, Chipata)*

*Some start with cerelac, or porridge made from home-refined mealie meal. (Mother of child 6 to 23 months, Mkushi)*

*I give her rice for breakfast, fruits mid morning, nshima for lunch, and in the evenings, nshima. The baby doesn't like porridge. (Mother of child 6 to 23 months, Chawama)*

Because mothers have different reasons for initiating complementary feeding, there is no uniformity in the age at which children are introduced to other foods. This age ranges from as early as 1 month to 6 months. Although a few mothers mentioned trying to improve the nutritional value of food given to their children by adding things like butter, eggs, milk, and dried fish (*kapenta*), it is more common to rely mainly on “light” (watery) corn porridge, which has low nutrient density.

### **Timing and frequency of eating**

Mothers, fathers, and grandmothers reported feeding young children three to four times per day:

*The way I prepare meals, my children have their routine feeding timetable. I have a 1-year-old who eats porridge at 0900 h [9:00am]. The others drink tea at 1000 h [10:00 am]. At 1330 h [1:30 pm], they eat lunch, and then at 1800 h [6:00 pm], they eat supper. (Mother of child 6 to 23 months, Kabwe)*

*We usually give them such foods three times in a day. But like we said, it's difficult to count the number of times for small children. (Primary caregiver of child 6 to 23 months, Katete)*

*For me, it is four times. I cook porridge in the morning. If I have other foods, I feed my child again at 10:00 am, then my child eats nshima and other things like porridge at 4:00 pm. (Mother of child 6 to 23 months, Katete)*

*They eat three or sometimes four times per day. The number of times of eating depends on the availability of food. (Father, Chipata)*

### **Sharing or using separate plates**

Mothers and grandmothers also mentioned the custom of feeding children from their own plates and sometimes having several children share plates:

*I have a large family of grandchildren, so I serve three of them per plate. I dish out four different plates. The 1-year-old has his own plate and spoon. For nshima, these others have individual side plates. (Grandmother of child 6 to 23 months, Mkushi)*

*We have trained the children to eat on separate plates because they fight a lot. Each one eats from his own plate, and if he throws food around, that is up to him. (Mother of child 6 to 23 months, Lusaka)*

*The one who is 2 years old must be served food on his own plate. Even the one who is 3 years old should also be served on a separate plate. But those who are about 10 years old, if there are two, I have them eat on one plate. (Grandmother, Chibombo)*

## **Constraints to complementary feeding**

Respondents recognize cases of malnutrition in their communities and attribute this to lack of food. Most of the respondents focused on the comment that families cannot afford to buy the recommended foods for their children:

*You see many cases of undernourished children in hospital and clinics. This is evidence that they don't have enough food and are not given the right types of food. (Community leader, Chibombo)*

### ***Lack of appropriate foods***

Many respondents mentioned lack of appropriate foods as a major constraint:

*Foods given to babies are not adequate in this community. The main reason for this is that most families are poor and cannot afford good food for their family members, including infants and young children. (CHV, Mkushi)*

*In some households, infant feeding practices are adequate. In some, they are not. The type of life other people are living is different. Some can afford, while some cannot. The problem is that those who can afford are few. That is why I am saying it's inadequate. (Mother of child 6 to 23 months, Lusaka)*

*No, the feeding practices are not good. Babies are not adequately fed in this community because most mothers have no food. (CHV, Katete)*

*Some families can't afford to buy the foods that are recommended for infants and young children. (Community leader, Lusaka)*

*The biggest problem is that mothers/caregivers do not have enough food to give to these children. (Community leader, Katete)*

*They do not have enough food, because they don't have the means to source food—they have no farming inputs. They don't have energy to plough their small gardens. (Community leader, Chibombo)*

Unemployment was a main reason cited for inadequate food availability at both the community and household levels:

*Most men and women in our community do not work. Therefore, it is difficult for them to feed their children. In addition, the community does not have land for people to do farming so that they can grow their own food. (Community leader, Lusaka)*

*There is a lack of resources to acquire the right foods. Very few people are in formal employment and have a reliable income. Most people here live on a day-to-day income which they fight hard to get. The diet is dictated by what they have worked for. (Community leader, Kabwe)*

### ***Poor feeding practices***

Some respondents said lack of knowledge about infant feeding practices—which some attributed to lack of education—contributes to inadequate infant and young child feeding practices in the communities. However, this issue was only mentioned by community leaders and CHVs, not by mothers:

*Caregivers do not have enough knowledge on feeding practices. (Community leader, Chibombo)*

*Lack of education and knowledge are the reasons why some mothers in the community do not know how to feed their children. (Community leader, Chawama)*

*Most women do not have education at all, and they do not know what is good and what is bad for the children. If they were taught things on good feeding practices, the health of children in this community would improve a lot. (Chairperson, neighborhood health committee, Chipata)*

*The infant feeding practices in this community are far too short of what they are supposed to be. (Community leader, Katete)*

*The thing is that mothers or households can have food, food that is even good for the baby, but they do not know how to prepare food that would be good for the child. So it is lack of cooking knowledge most of the time. They should be taught how to properly prepare food for their families. (CHV, Chipata)*

### **Food taboos surrounding complementary feeding of children 6 to 23 months**

Food taboos were mentioned by CHVs and a traditional birth attendant:

*People here have very backward ideas. For instance, some believe that if they fail to finish their supper, they will give the same food left overnight to their children to eat, which is very unhealthy. Some people also believe that good foods, like eggs and so on, are supposed to be eaten by fathers, and not children who, in my view, deserve to eat such things. (CHV, Chipata)*

*Some people here believe that a baby should not eat certain parts of a chicken and certain meat parts. Some of my colleagues still believe that a baby should not eat eggs. They say eggs are bad for babies and only good for adults. (CHV, Chipata)*

*There are not a lot of beliefs (i.e., taboos about feeding children) nowadays. Maybe it's because of education. But some people still believe that babies should not eat too much, and they should not eat things like eggs. (CHV, Katete)*

*Some people believe that children should not eat fish or meat. Others believe that pregnant women should not eat eggs, as their newborn babies will have no hair. (Trained birth attendant, Chibombo)*

### **Reasons for weaning**

Respondents indicated that there is no specific age at which mothers stop breastfeeding because various factors are considered. As mentioned previously, perceived lack of breastmilk is a common concern:

*Some stop breastfeeding because they are lazy, and some stop due to lack of enough breastmilk. (Mother of child less than 6 months, Chipata)*

Women's employment is one reason that women wean their children early:

*There are women who work and these are the ones who stop breastfeeding early, because they have to go back to their normal duties. (Community leaders, Lusaka)*

A new pregnancy was also mentioned:

*Sometimes it's the men who interfere; they want you to conceive when the child is still small, so when you do that, then you stop breastfeeding. (Mother of child 6 to 23 months, Lusaka)*

*Others fall pregnant too soon, when the baby is still young. (Mother, Chibombo)*

*Early pregnancy, when the child is still young. (Mother of child 6 to 23 months, Mkushi)*

A CHV also mentioned HIV as a reason that some mothers wean early:

*Some mothers do have medical problems after giving birth, and there is need to protect the child from catching the same infection. (CHV, Kabwe)*

Several mothers and CHVs mentioned the need to wean a child from breastmilk when the child is not interested in complementary foods, as the way to get the child to eat other foods:

*Some children concentrate on breastmilk alone and don't eat food, so mothers stop breastfeeding them to let them eat solid foods. (CHV, Chawama, Lusaka)*

*My child just used to drink breastmilk and refused to eat complementary food. That's why I stopped him at 1 year and 6 months. (Mother of child 6 to 23 months, Katete)*

*There is a general perception that children cannot get satisfied with breastmilk alone—hence, they stop breastfeeding them. (CHV, Kabwe)*

*We wean the baby when we see that the baby does not want to eat (food) and continuously depends on breastmilk. (Mother of child 6 to 23 months, Lusaka)*

Other respondents mentioned that in some cases children stop liking breastmilk or become sick from it and need additional foods in the diet:

*My babies got sick whenever they reached 1 year, so I stopped breastfeeding. I thought maybe breastmilk was making them sick. That was the advice I got from my neighbor. (Mother of child 6 to 23 months, Kabwe)*

*There is also the perception that some children don't like breastmilk, so the mothers stop breastfeeding them. (Community leader, Katete)*

### ***Foods and liquids fed during weaning***

Respondents mentioned different types of foods and drinks that they prepare when they are weaning children from breastmilk, but these tend to be low in calories and nutrients:

*Before you wean the baby, fluids such as munkoyo [a fermented maize gruel] and other drinks should be prepared. We buy bread, drinks, and biscuits. We wean our children differently. Some of us just use water and munkoyo, and we don't include things like biscuits, because they are hard to come by. (Mother of child 6 to 23 months, Lusaka)*

*When you stop the baby from breastfeeding, you prepare foods such as bananas, drinks, rice, potatoes, and especially porridge. There are foods that the baby may like even when he is breastfeeding, so those are the same foods we continue with when the baby stops breastfeeding. (Mother of child 6 to 23 months, Kabwe)*

## **Influencers of infant and young child feeding**

### **Health center staff**

During focus group discussions and in-depth interviews, participants were asked to identify the main influencers of infant and young child feeding in their communities. Overwhelmingly, respondents in all categories said health center staff have the most important role in advising families:

*We feel that the health personnel know best about the child's health and how long the child should breastfeed. (Grandmother, Mkushi)*

*We get advice from the rural health center staff. We are advised to feed our babies strictly on breastmilk until they are 6 months old. (Mother of child less than 6 months, Mkushi)*

*All we are taught at the clinic is helpful. There is nothing that is not helpful if you strictly follow the advice. (Mother of child less than 6 months, Kabwe)*

*The information they [community health workers and hospital personnel] give us is mostly on how to feed the baby. They taught us how to cook for the baby, and they also taught us how to prevent the baby from becoming sick. All the information was very helpful. (Mother of child 6 to 23 months, Chipata)*

*In the community, nurses at this clinic play a leading role as influencers of infant and young child feeding. I think mothers have a lot of respect for health centers. (CHV, Kabwe)*

*Women consult health personnel at the health center. I feel that is the best place for women to go for advice. (Community leader, Chipata)*

*The most influential group in infant and young child nutrition is the local clinic for under-5 and antenatal care. (Community leader, Kabwe)*

### **Community leaders and groups, traditional birth attendants, and other CHVs**

Respondents also mentioned community leaders and groups, including the church, as well as traditional birth attendants and other CHVs:

*Traditional leaders and home-based care volunteers are influential on the HIV-positive mothers. Also, mothers listen to their parents and the breastfeeding group. (Community leader, Kabwe)*

*We have chief representatives, counselors, community health workers, church leaders, and women's organizations in churches. These are given respect in the community, so they have some strong influence. (Key community health worker, Chipata)*

### **Mothers**

As expected, community leaders and CHVs consider mothers to be the main influencers of infant and young child feeding at the household level:

*Mothers. They understand the nature of feeding children. They are the ones who attend growth monitoring; you will never find fathers attending them. The church also plays a*



*role by giving advice to mothers. (Chairperson of neighborhood health committee, Lusaka)*

*The decision in the household is made by the mother. (CHV, Katete)*

*At household level, it's the mothers who advise their husbands that the babies now need to feed on something, and then the men find that food. (Community leader of a community-based nutrition group, Katete)*

*The most influential advisors are mothers and also men, so when doing programs for women, men should be involved. Both men and women should go, but men will be more influential. (CHV, Chibombo)*

*In most cases, it's the mothers themselves who make such decisions. However, health staff, especially nurses, also make decisions on infant and young children feeding practices. The main people who decide on such issues are the mothers, and from what I have observed, most mothers just consult each other and do not ask anyone else for advice. (CHV, Katete)*

## **Grandmothers**

Grandmothers were rarely mentioned as influencing infant feeding except for comments made by the grandmothers themselves. However, the grandmothers stressed that they are quite influential, not only in matters related to infant and young child feeding but also in the health and overall well-being of their grandchildren. This became evident during focus group discussions with grandmothers in all study sites:

*We guide the mothers on how to care for the baby—for example, properly washing nappies, encouraging them to cook porridge for the baby, and encouraging them to go to the clinic when the baby is sick. Sometimes it is the grandmother who takes the baby to the clinic. (Mkushi, rural)*

*When it is time for cooking, we are always close to them, especially when cooking relish with groundnuts, because most of the young mothers don't know how to cook. (Mkushi, rural)*

*As grandmothers, we also teach young mothers about good feeding practices. (Chipata, rural)*

*It's our duty as grown-ups to teach young mothers how to take care of babies, how to bathe and feed them. (Katete, peri-urban)*

*They ask us so many questions about how to take care of babies. We give them advice, including how to feed babies. (Katete, peri-urban)*

*The grandmother is there sometimes to teach how a child should grow from the time it is born. The grandmother should teach the young new mother. (Chibombo, peri-urban)*

*When a mother is breastfeeding, we teach that she should first wash her hands, sit down, then put the baby on her lap. She needs to concentrate when breastfeeding. (Chibombo, peri-urban)*

*We advise our children on childcare, especially on feeding the child. Some young mothers do not know or understand that when a child is crying, he needs food, so this is the type of advice we give them. (Kabwe, urban)*

*We take our grandchildren to the under-5 clinic. Health staff at the clinic advise us to feed our grandchildren with porridge, kapenta, rape, pumpkin leaves, and other vegetables. (Kabwe, urban)*

*When we accompany our daughters-in-law to the clinic, we remain outside, but we can still hear what they are being taught from outside. (Kabwe, urban)*

*The role of grandmothers at home is to look after grandchildren, see how they are playing, feed and bathe them, and put them to sleep during the daytime for them to rest. (Chawama, Lusaka, urban)*

*Before the child falls sick, we take the grandchild to the under-5 clinic for growth monitoring to see how that child is growing. Even if the child is not sick, but he is not eating, his weight drops. The nurses tell us how to take care of that child. So when the child becomes sick, I bring him here to the clinic so the doctor can see him. (Chawama, Lusaka, urban)*

## **Fathers**

Fathers in the study communities reported that they play a very significant role in providing food for their families, including infants and young children:

*I should be the head of the house, meaning I am the provider. After I wake up, we discuss how the day will be, or what will happen that day. What we have and what we don't have in the house. Then I leave some money for the family to use at home. Then I leave for work. (Kabwe)*

*The role of the father at home is to look for money so that children can eat. (Mkushi)*

*In most cases, men are suppliers. We make sure that money for food is available. When you give money for food to your wife, you should also ensure that the food has been bought and find out whether it is also adequate for the whole family. (Chawama, Lusaka)*

*First find out whether food for your children is sufficient or not. (Katete)*

*You should be responsible over all areas of the home. So being the head of the family is not an easy one. It is difficult. The responsibility of the man at home is to make sure that food is there. (Chibombo)*

In addition, some fathers report caring for their children, including preparing food and advising mothers on feeding, as well as actually feeding infants and young children:

*We advise our wives on how to feed the babies. We advise them to give them a balanced diet. (Kabwe)*

*There are times when the mother is not there and the child messes himself. It is my responsibility to clean up the child. In case the child needs food, I will prepare this. (Chipata)*

*We advise our wives on how to feed and breastfeed the babies. When the baby cries, and we see that the mother is busy doing something else, we quickly come in and ask the mother to breastfeed. Even when time comes for the child to eat, we advise them to prepare food for the babies. (Mkushi)*

*Some fathers, like me, help in cooking and in bathing children even when the mother is there. (Kabwe)*

*Yes we do; we advise them on how to feed the children, and how to properly look after them. (Chipata)*

*When the mother is not there, it is my full responsibility to care for the children, no matter how young. I prepare food, feed them, and leave some for the mother, but when she comes back, she takes responsibility. (Chawama, Lusaka)*

*For women who have spouses, men play a role in influencing the mother about what to feed the child. I am a father, and I have influence over my children's feeding practices, advising the mother on the kind of food she has to give the children. (Chibombo)*

Some community leaders' responses to the questions regarding who women consult on infant and child feeding seem to confirm fathers' claims:

*Most women consult the father of the house. It is the responsibility of the father to make sure that he provides for the children, such that even when children are not looking good, he will be the one to blame. So men have a big part to play. (Community leader, Katete)*

*The most influential advisors are men. Programs should involve both men and women, but men will be more influential. (Head of a women's group, Kabwe)*

### **Sources of information about infant and young child feeding**

Respondents identified a number of places, institutions, and individuals as sources of information on infant and young child feeding. Health facilities, including health centers/clinics and hospitals, are primary information sources in all three of the settings (i.e., urban, peri-urban, and rural). Mothers reported:

*We get information from the clinic. (Mother of child less than 6 months, Kabwe, urban)*

*We get advice from here when we bring children for the under-5 clinic, and at antenatal clinic if you are pregnant. (Mother of child 6 to 23 months, Chibombo, peri-urban)*

*It is only at the clinic. That's where they give us appropriate advice. (Mother, Lusaka, urban)*

*The clinic staff provides information from the time the woman is pregnant until she delivers her baby, and also when they go for children's under-5 clinic. (Mother of child 6 to 23 months, Chibombo)*

CHVs confirmed mothers' comments that health facilities are a common source of information:

*They get most of the information from the hospital. What happens is that when a woman is pregnant, she attends antenatal clinics, and it is during these clinics that information is given to mothers. After delivery, information on how to feed babies is also given to*

*mothers, through under-5 clinics. So, in short, I would say that such information is given at the hospital. (CHV, Katete, rural)*

In general, mothers reported that information provided to them at health facilities is useful:

*We get advice from the rural health center staff. All the advice given to us by the health staff is helpful. All what we are taught at the clinic is helpful. There is nothing that is not helpful if you strictly follow the advice. (Mother of child 6 to 23 months, Mkushi)*

Besides health facilities, mass media, especially the radio, are an important source of information on infant and young child feeding. When asked which radio stations they listen to and during which time of the day, respondents noted:

*We do not have TVs in our homes, though some people do. We get most of the information on health matters through radios, which are very common in this community. (Mother of child 6 to 23 months, Mkushi)*

*We listen to the radio when we are cooking, sweeping, or doing other activities. (Mother of child 6 to 23 months, Mkushi, rural)*

*Radio 2 and Radio 4 have programs on child feeding and care practices. (Mother of child 6 to 23 months, Chibombo)*

*Radio 1 Monday morning on the women's program. (Mother of child 6 to 23 months, Chibombo, peri-urban)*

*Radio programs such as "Sister Evelina" and other programs. (Mother of child less than 6 months, Lusaka, urban)*

*We read newspapers and magazines that we are given here at the clinic, such as KWATU magazine. This magazine educates the reader on how to take care of children, the importance of taking our children to the under-5 clinic, and the importance of breastfeeding. The magazine also educates us on how to care for patients and many other health issues. (Mother of child 6 to 23 months, Mkushi)*

*We read newspapers such as the Post, Times of Zambia, Daily Mail. The most common one here is the Post, but we don't have the opportunity to read it daily. The information we get helps us and it builds us. (Mother of child 6 to 23 months, Mkushi, rural)*

Findings of this study indicate that a number of community groups and programs are aimed at educating community members, especially mothers, about the importance of giving children nutritious food. Health talks at facilities, mothers' support groups, and community meetings were mentioned as places where health personnel share infant feeding guidance with families.

Comments were collected from community leaders, including CHVs:

*We have a program that takes place here at the clinic. There are 24 of us, and each of us has a day of operations. When I come in the morning, I sweep, and arrange the equipment needed for that day. Then I give a health talk on infant and young child feeding to women in the community. (CHV, Kabwe)*

*In the group of breastfeeding mothers we work in harmony with the clinic staff. They give us assignments to perform in the community, and they monitor our work. We also write*

*monthly reports to the clinic. We are the link between the community and the clinic, and the clinic staff come for outreach programs, such as during children's immunization week. (CHV, Kabwe)*

*I know of a group that was spearheaded by the nutrition group. Sometimes there are some nutrition talks or programs. When they came, they put us into age groups. We discussed what we feed our children and the challenges we encounter when looking for food. This discussion involved infant feeding and also the entire household. Sometimes, DAPP [Development Aid from People to People] has nutritional programs but not necessarily for women unless it comes as an intervention. DAPP is involved in sensitization from village to village in nutritional issues and does programs in a central place like at the clinic. They involve groups such as home-based care volunteers and orphans and vulnerable children who are under the Family Health Trust. (Chairwoman of a woman's group, Mkushi)*

*We have under-5 programs and other nutrition groups that come the way you have come to teach mothers. It is not my first time to hear of nutrition. The time they came here, they came with food and had lessons on hygiene, how to feed the baby, and how to prepare the food. The group that came here was from the IYCN Project. (Community leader, Mkushi)*

*Growth monitoring programs are held once or twice a month in the ten zones of Chawama. CONTESA provides cooking demonstrations. (Chairperson of neighborhood health committee, Chawama, Lusaka)*

*We do some door-to-door programs [identifying malnourished children and carrying out health talks]. The program is successful because it is one to one and the parents feel free to talk about the problems or concerns and ask questions. The program also brings malnutrition awareness to the community. I would say that these programs are very beneficial because cases of malnutrition are very low here despite having challenges such as limited funds and supplies. (CHV, Chawama)*

*There is a health talk on infant feeding before the session for mothers who come for under-5 clinics, where mothers are advised on infant feeding and child hygiene. Sometimes, when traditional leaders are addressing community meetings, health workers give a health talk, especially on infant feeding, and all the sources mentioned are trusted. (CHV, Kabwe)*

*We have programs for preventing infant and child malnutrition, and these are spearheaded by nurses. We also have groups for growth monitoring. This group goes into the community, and sometimes they meet here at the clinic to teach mothers on how to cook for their children. (Head of a women's group, Kabwe)*

*What they [hospital staff] usually do is that they call for community meetings, and it is at these meetings that they talk to mothers and other community members about issues that promote support for infants and young children. (Deputy school teacher, Chipata)*

Some mothers mentioned that these meetings are helpful:

*Yes, we attend community meetings. The information given is very useful to us. They teach us how to take care of our children and how to prevent them from becoming sick. They also tell us to keep the cooking utensils clean. We hear a lot and follow everything they teach us. (Mother of child less than 6 months, Katete, rural)*

However, fathers observed that men rarely attend community meetings about health, which they considered a problem:

*Community meetings are not attended by men, so it should start now. (Father, Kabwe)*

## Conclusions and recommendations

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The findings of this study highlight a number of issues related to infant and young child feeding practices in the study communities. Breastfeeding is recognized as extremely important by mothers and other members of the community and remains the first choice for infant feeding. There is widespread awareness about the message of exclusive breastfeeding for six months, and generally mothers, fathers and grandmothers expressed their support for the practice. However, in reality many respondents expressed doubts as to whether breastmilk was really sufficient during the first six months and whether mothers could produce enough breastmilk to meet their child's needs. In particular, families tended to introduce water before six months due to their perception that infants gesture to indicate their needs—and the belief that not responding is cruel to the child. When women are away from their infants, most respondents did not feel it was acceptable to express breastmilk. Many respondents strongly oppose it because it is considered untraditional, unhygienic, and unnecessary if the mother can stay close to her child.

The study identified a number of factors that represent barriers to the uptake of recommended infant and young child feeding practices. Respondents noted that cultural beliefs, traditions, and lack of knowledge about the nutritional needs of young children are barriers, and many respondents identified lack of food as a major reason for not providing appropriate foods to young children. Multiple respondents commented that when mothers have an inadequate diet, they do not produce enough breastmilk, and need to introduce foods and liquids before 6 months of age, or must wean their child from breastmilk.

Health facilities (clinics, health centers, and hospitals), radio programs, newspapers and brochures available at health facilities were cited as the most common sources of information on infant and young child feeding in these communities.

Health workers and members of community-based organizations mentioned that they play a significant role in influencing infant and young child feeding at the community level, and the main influencers at the household level are mothers. Although grandmothers, as well as fathers, consider themselves influential in the care and feeding of young children, their role was hardly mentioned by respondents other than the grandmothers or fathers themselves.

Recommendations based on study findings include:

1. Develop innovative strategies to increase the perception among mothers, fathers, and grandmothers that breastmilk provides an infant from birth to 6 months with all the calories, nutrients, and water needed. Despite many efforts to dispel myths that water and other foods are needed before 6 months, this study has highlighted that many mothers and family members still hold this belief. Strategies should focus on not only increasing knowledge that breastmilk can meet a child's needs, but also on mothers' ability to produce sufficient breastmilk. Because there are many mothers who firmly believe in and successfully practice exclusive breastfeeding, these mothers can provide testimonials about the positive results from exclusive breastfeeding and the fact that they were able to exclusively breastfeed. As one mother succinctly put it:

*We mothers who adhere to exclusive breastfeeding need to sensitize those who give their babies water and other fluids or foods during the first six months. We also need to give examples of our own babies who do not frequently have stomach problems compared to those being given other foods during that period. (Mother of child less than 6 months, Mkushi)*

2. Increase awareness that even mothers whose diets are not optimal (in terms of calories and diversity) can provide adequate breastmilk for their babies. Many respondents from all categories were not aware that a woman will continue to provide enough nutritionally adequate breastmilk for her infant unless she is severely food constrained, such as in a famine. Nutrition programs (and all development programs) must acknowledge women's nutritional needs and invest in women's health. However, it is important for families to be aware that economic and food supply limitations should not preclude mothers from exclusively breastfeeding for six months.
3. Intensify efforts to clarify the relationship between breastfeeding and the HIV status of the mother. Confusion about whether HIV-positive women should exclusively breastfeed their infants suggests that international recommendations have not been communicated widely and adequately in the study communities.
4. Find new ways to promote the practice of expressing breastmilk by decreasing the perception that it is an uncommon and unnatural practice. To achieve this, it will be important to share the experiences of women who successfully expressed breastmilk and increase the perception that infants can be hygienically fed expressed breastmilk by maintaining good sanitary conditions (e.g., use of a cup).
5. Decrease the *perception* that families cannot provide an adequate complementary diet for young children due to economic constraints. Promote children's consumption of high-nutrient, low cost foods that are regularly available in Zambian homes and focus attention on the fact that small quantities of highly nutritious foods fed frequently can make a crucial difference to child growth.
6. Address the *reality* that many families face serious economic constraints to purchasing or growing enough nutrient-rich foods. Increase efforts to link families, both men and women, to income-generating activities and agricultural support so they can access food for their families. This would involve liaising with agricultural extension workers to improve the production of foods for household consumption (including meats and vitamin A-rich foods). Infant and young child feeding programs can also explore ways to integrate microfinance or other income-generating activities into their approaches, linking to other programs that specialize in these services.
7. Develop programmatic linkages with organizations managing community programs that could include infant and young child feeding messages and activities as part of their efforts.
8. Incorporate fathers and grandmothers into the design and implementation of programs to improve the well-being of infants and young children. Fathers and grandmothers clearly expressed their interest in supporting the care and feeding of infants and young children. Findings from this study strongly suggest that the role of fathers and grandmothers in the feeding and well-being of infants and young children has not received the recognition deserved.



9. Use radio to communicate messages on proper infant and young child feeding practices to a large segment of mothers and other caregivers. Findings of this study suggest that many women have access to radio and frequently tune in to national and community radio stations. In addition, efforts should be made to find ways to use volunteers as a primary source of information on infant and young child feeding and to strengthen messages about infant and young child feeding at the community level.
10. Encourage, duplicate, or scale up use of publications distributed at health facilities to address health issues related to infants and young children. These publications seem to be appreciated by the community.
11. Conduct additional research to investigate informational gaps in the following areas:
  - (a) amounts and nutritional values of locally available foods given to infants and young children;
  - (b) dietary practices (e.g., nutrient composition of diets);
  - (c) socioeconomic and demographic profiles of households that are unable to afford food and those that are able to; and
  - (d) constraints, both financial and human, faced by organizations/institutions implementing infant and young child feeding programs. The data will be valuable for targeting evidence-based programming to the nutritional challenges in Zambia.