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**INTEGRATED CASE MANAGEMENT  
OF SICK CHILDREN**

**REPORT ON THE ADAPTATION  
OF FEEDING RECOMMENDATIONS**

Lusaka, Zambia

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## ACRONYMS

BASICS	Basic Support for Institutionalizing Child Survival Project
IMCI	Integrated Management of Childhood Illness
MCH	Maternal and Child Health
NFNC	National Food and Nutrition Commission
NRDC	Natural Resources Development College
NCSR	National Council for Scientific Research
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
ZDHS	Zambia Demographic and Health Survey

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## EXECUTIVE SUMMARY

In preparation for training health workers to implement the Integrated Management of Childhood Illness Initiative, the IMCI algorithms and guidelines are adapted to fit local needs. A part of this comprehensive adaptation is the formulation of appropriate feeding recommendations for young children. This was carried out for Lusaka where IMCI training and implementation for Zambia is to be initiated.

The central activity of the adaptation process is the trial of feeding recommendations in a sample of households. The recommendations are designed to address common infant feeding problems identified in the community. The feeding problems were identified through a review of existing literature and information gathered by interviewing groups of mothers and health workers who counsel mothers about child feeding. The recommendations generally encouraged increasing food energy intake through breastfeeding exclusively for the first six months, and increasing the energy density of meals, frequency of feeding, or amounts of food fed.

The trials were carried out in three of the eight communities served by eight of Lusaka health centers that have been selected for initial IMCI implementation. The three—Kanyama, Chipata, and Chilenje—are typical peri-urban Lusaka communities with high population densities. Kanyama and Chipata have high proportions of low-income families earning wages in the informal economic sector, while Chilenje households tend to have middle-level employees with a steady income in the formal sector work force. A total of 42 households were selected to give a sample of children representing each of the following age groups: under 2 months, 2 to 4 months, 4 to 6 months, 6 to 12 months, 12 to 18 months, and 18 to 24 months.

In each home, after assessing the child's feeding, recommendations were offered to the mother or caretaker on how the child's feeding could be improved. After deciding on what recommendations to try, the mother was allowed about three days to try them. During a follow-up visit, the mother or caretaker gave feedback on her child's and her own reaction to the recommendation and whether she planned to continue to practice it.

The trials showed that most mothers were willing, some even eager, to try new or modified feeding behaviors that might be helpful to improving the health of their children. Most mothers who were asked to do so were willing to try making their children's porridge thicker by adding more maize meal; add sugar, oil or groundnuts, or beans to the porridge; and to feed *nshima* with mashed vegetable, bean, or fish relish, not just with the relish 'soup' as is customary. Mothers were more likely to increase the number of times they fed their children than increase the amount of food fed per feeding. The most common reason mothers gave for not trying a recommendation was the lack of resources to do so, confirming that household food security is a constraint that should be discussed by health workers in their counseling on child feeding.

Mothers of very young infants were more likely than mothers of infants aged four to six months to accept the recommendation to practice exclusive breastfeeding.

The results of the trials were used in modifying key feeding recommendations for children under 2 years. After discussions with the local nutrition community, the feeding recommendations (appendix A) were adapted to the generic IMCI *Foodbox* and the *Counsel the Mother* sheets shown in appendixes B and C respectively. Suggestions for the *Counsel the Mother Training Module* have also been provided.

## BACKGROUND

The adaptation of the feeding recommendations to suit local needs is one of the activities conducted prior to training health workers to use the IMCI approach. This adaptation of feeding recommendations was carried out for Lusaka where eight health centers have been selected for the initial IMCI training and implementation in Zambia. The adaptation activities, conducted from February 19-March 18, 1996, were based on guidelines provided by WHO for the entire IMCI protocol, sections of which address the feeding recommendations and counseling of the mother.

The guidelines propose the following steps:

1. Review existing information and identify data needs
2. Develop draft feeding recommendations
3. Test draft recommendations through household trials
4. Revise recommendations
5. Circulate revised recommendations among local experts
6. Suggest local adaptations to the *Foodbox*, *Counsel the Mother about Feeding Problems*, and *Counsel the Mother* training modules

This report describes the activities carried out under each step.

## ACTIVITIES

### A. Review Existing Information and Identify Needs

While the 1992 Zambia Demographic Health Survey (ZDHS) provided some national and regional information on infant feeding, and studies in 1987 by Hayes et al. (1994)<sup>1</sup> and by Ng'andu and Watts (1990)<sup>2</sup> give some information for Lusaka on breastfeeding, timing of complementary feeding, and complementary foods, the information does not describe feeding practices for different age groups. More information was needed on feeding style from breastfeeding to full weaning, the consistency of the foods fed, and the foods considered appropriate or not for the children at different age groups. To obtain the additional information needed to formulate feeding recommendations to try in a sample of homes, interviews were conducted with an experienced MCH worker at each of two of Lusaka health centers (Chelston and Kanyama); a group of women at the same health centers, and also at Garden Compound (a

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<sup>1</sup> Hayes RE et al. Weaning Practices and Foods in High Population-Density Areas of Lusaka, Zambia. *Ecology of Food and Nutrition* 1994; Vol 33:42-74

<sup>2</sup> Ng'andu NH, TEE Watts. Child growth and duration of breastfeeding in urban Zambia. *J Epid and Comm Health* 1990; 44:281-285.

Lusaka peri-urban community); and three women working in a market. The following summary of infant feeding practices is based on the literature and the interviews. More specific information on amounts of food and frequency of feeding was obtained later during the household trials.

### **Current infant feeding practices in Lusaka**

Initiation of breastfeeding is almost universal, but exclusive breastfeeding is uncommon. According to the ZDHS, nationally only 15 percent of infants under 1 month of age are exclusively breastfed. Water is usually given from birth because mothers believe it to be necessary for the baby. The amount of water given may be given anywhere from a teaspoon a day to several teaspoons three or four times a day. The water is not generally boiled.

Although complementary foods are commonly introduced around age 3 to 4 months, some mothers may give the child other milks or porridge earlier than that if they perceive it necessary to supplement their breastmilk.

The first complementary food is commonly porridge, usually made with maize. The porridge, made by cooking maize flour in boiling water, is made very watery when first introduced so that babies can swallow it easily. Sugar is usually added, and oil or milk, if available. It is given once or twice a day, usually fed by spoon, and gradually increased in amount as the baby gets bigger.

Between 4 and 6 months old, most babies are receiving porridge regularly in addition to breastmilk. The porridge is still thin. The most common foods added to enrich the porridge are sugar with oil or pounded fresh groundnuts. Other additions to the porridge which are promoted by the health services, but less commonly used, are mashed boiled beans, pounded fish, cow milk, soybean flour, and egg. In Lusaka, cost, rather than lack of knowledge about the need to enrich the porridge, is reportedly the major factor influencing the decision to enrich or not to enrich the porridge. Pounded fish in porridge is the least acceptable because of the fishy smell. Mothers make porridge fresh for every feeding, at least twice a day. "If a mother is lazy," one mother said, "she may skip making porridge because she cannot be bothered to make it fresh every time."

Some mothers begin feeding *nshima* also at this age. *Nshima*, a 'stiff' porridge also commonly made from maize meal, is the main dish eaten by adults and enjoyed daily by most Zambians. *Nshima* also is made by cooking maize meal in boiling water, but the consistency is more dense than thick porridge and does not spread on a plate the way porridge does. Variety in this main meal is provided by the relish which is eaten with the *nshima*. The relish is made by boiling dark green leaves, other vegetables (such as okra), beans, fish, meat, or chicken, with chopped onions, chopped tomatoes, and oil. The fish may be fresh or smoked or dried small fish called *kapenta*. A relish usually has one main ingredient, such as vegetables, fish or meat, and is prepared separately with flavorings. If a family is able to afford it, more than one relish (such as one of

fish and another of green leaves) is prepared for the meal. For most families, there is one relish per meal, most often made with vegetables, occasionally with meat. Pounded groundnuts instead of oil may be cooked with green leafy or dry vegetables.

During a child's first year, and sometimes beyond the first year, the child is fed only the liquid part of the relish, referred to as the 'soup.' The infants are usually fed by hand by their mothers from food taken from the mother's bowl as she and others sit around shared bowls of *nshima* and relish. Many mothers place small lumps of *nshima* onto a separate plate for the baby, others feed the baby directly from the common bowl.

Between 6 and 12 months of age, almost all infants are fed *nshima* and 'soup' in addition to porridge. Mothers continue to breastfeed as often as the child wants, often exceeding six to eight times each day. More foods, such as fruits and bread, are introduced at this time, but variety tends to be limited. Feeding frequency (other than breastmilk) varies, but is usually two or three times per day. The mother mashes small lumps of *nshima* with her fingers before she dips it into the 'soup' and puts it into the baby's mouth.

After the age of 12 months, most children are fed on family foods, which for lunch and dinner are commonly *nshima* and relish. Rice or potatoes may on occasion be fed instead of *nshima*, especially if the child prefers them or is anorexic. The child may not be served porridge if it is not prepared as a family meal (usually for breakfast). Tea and bread may be fed at breakfast or as a snack between the main meals. Breastfeeding may be terminated, but many children continue to be breastfed through most of the second year (median duration of breastfeeding is 18 months). Feeding frequency (other than breastfeeding) varies from two to five or more times per day, depending, it appears, on food availability and the child's demand for food. During the second year, a minority of children are served in a common bowl to eat with other children.

There is inadequate information on the quantity of the daily nutrient intake among young children. However, the information on the nutritional status suggests that young children do not receive adequate nutrients to meet their growth and metabolic needs. The ZDHS shows that chronic undernutrition increases rapidly in children under 2 years old, and reaches a peak around 20 months of age, when about half of the children at that age are stunted. Hayes et al. (1994), in their 1987 study, estimated that at least 1 in 5 of the sample of 65 children aged 6 to 29 months did not receive adequate daily calories. They speculated, however, that mothers probably overstated the children's food intake because a higher proportion of the children had anthropometric deficits.

Frequent illness undoubtedly stresses the nutrient needs of the children. When asked, frequent illness is one of the major concerns mothers mention about their children. During illness, most mothers acknowledge that their children do not eat well because of anorexia. They maintain breastfeeding if the child is still breastfed. Some try to offer the child's favorite foods to entice him or her to eat more, but are not always successful in getting the child to eat. Deliberate increase of feeding during convalescence is not widely practiced.

## **B. Draft Feeding Recommendations**

Based on the information gathered, possible recommendations were drafted to address feeding problems in the various age groups (Appendix D). Since the energy densities of thin and thick porridge range from 14.4-31.7 kcal/100 ml. and 35.2-73.5 kcal/100ml (average 60 kcal/100 ml.) respectively (Hayes et al., 1994) in comparison to 70 kcals/100 ml. for breastmilk, the introduction of thin porridge that replaces breastmilk feedings places the infant at a high risk of undernutrition. Maize *nshima* is reported to have average energy density of 138 kcal/100ml. (range 92.7 to 171.6). *Nshima* is usually not served more than twice a day, so an infant about 1 year old would have to eat *nshima* to his full stomach capacity each time to make about half his daily energy requirement, and make up the rest with breastmilk and other foods. Hence, the need to add to the diet energy-dense foods that are not bulky. The feeding recommendations were designed to primarily increase food energy intake through improvements in exclusive breastfeeding in young infants, energy density of a meal, frequency of feeding, and amounts of food fed. The recommendations to feed more vegetables and fruits would also improve mineral and vitamin intake, as well as variety of foods fed.

The draft recommendations were discussed with a group of local experts. As a result of the concern expressed by some of the experts, the ideal feeding for infants aged 4-6 months was changed to 'exclusive breastfeeding' only, and recommendations for improving other foods for that age group were to be provided only if the mother was unwilling or unable to stop foods other than breastmilk.

## **C. Household Trials of Feeding Recommendations**

The feeding recommendations were tried out in homes to determine the practices most acceptable to mothers and their children. Three visits were made to each of the selected households. The first step in the trial, during the first visit, was the assessment of the child's current feeding to determine if there were any feeding problems. During the second visit on the next day, the mother or caretaker was offered, in most cases, several options for how a particular problem could be overcome, and through negotiation (in light of the particular household situation) she decided what practices she was willing to try. After about three days, the mother or caretaker was visited a third time to find out what practices she and her child liked enough to continue, and what modifications she made in the recommendations.

The research team consisted of three nutritionists from the National Food and Nutrition Commission (NFNC) (two of them serving as supervisors), three recent nutrition graduates of the Natural Resource Development College (NRDC), and a practical instructor from that same college who participated as field interviewers.

### **The sample**

Three sites were selected as representative of the communities served by the eight health centers where the IMCI approach is to be initiated. Two of the sites, Kanyama and Chipata compounds, are predominantly lower socio-economic, with many of the residents engaged in informal sector

employment. The third area, Chilenje, was selected as representative of a population mixture likely to have some households with residents employed in the formal economic sector and earning a more steady income. Because the peri-urban areas of Lusaka are mixed ethnically, it was felt that ethnic differences in food selection or preparation were likely to be captured. Moreover, ethnic differences in food choices and preparation are believed to be less marked in urban than in the rural areas.

Within each site, households with infants under 2 years old were selected to have at least two children in each of the following age groups: from birth up to 2 months; 2 up to 4 months, 4 up to 6 months, 6 up to 12 months and 12 to 24 months. The age group 0-2 months is not included in the IMCI guidelines for adapting the *Foodbox*, but was added here to capture mothers likely to be more receptive to the recommendation to breastfeed exclusively if they were not already doing so. Although the sample size is small, this in-depth, qualitative methodology has been shown to produce results that compare favorably with those obtained from a survey and a similar study using larger samples (Bhandari et al.)<sup>3</sup>.

Once in the community, the interviewers went from house to house until a household was found with an infant in the desired age group and a mother or a caretaker willing to participate in the study. In Chipata, on the first day, community health workers attached to the health center helped locate houses with children in the required age groups. A total of 42 households were recruited in the three communities (Table 1).

Most of the mothers were housewives who were home with their babies almost all the time, but some had other occupations, such as petty trading, nursing, banking, and hairdressing. Their husbands' occupations ranged from professionals (such as lawyers), to artisans (carpenters, bricklayers), to drivers and watchmen. Three mothers said their husbands were unemployed, two did not know what their husbands did, and one was a widow. Five mothers described their husbands as 'business men,' which covers a range of unspecified activities that may be very small or large. The mothers were from 14 ethnic groups.

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<sup>3</sup> Bhandari N. et al. Validation of draft guidelines for the local adaptation of feeding advice. A report prepared for the Sick Child Initiative. 1995, WHO

**Table 1: The Sample of Children Whose Mothers or Caretakers Participated in the Household Trials**

AGE-GROUP (MONTHS)	COMMUNITY			TOTAL
	CHILENJE	CHIPATA	KANYAMA	
under 2	0	2	2	4
2 up to 4	2	3	2	7
4 up to 6	3	3	3	9
6 up to 12	2	3	3	8
12 up to 18	4	2	1	7
18-24	2	2	3	7
<b>TOTAL</b>	<b>13</b>	<b>15</b>	<b>14</b>	<b>42</b>

**D. Results of the Household Trials**

Two mothers of infants in the 6-12 month age group could not be found for second visits, so results are presented for 40 mothers. Most mothers agreed to try more than one recommendation, so the same mother may be presented more than once in the results. Three mothers were not offered any recommendations because no feeding problems were identified (one was a mother of a 2 month old and another of a 1 month old, both of whom were exclusively breastfed; the third child was 23 months old). All but five mothers (whose children were over 1 year) were breastfeeding. Most breastfed six to eight times each day, or more.

**Age group: 0 up to 2 months**

**Ideal feeding pattern: Exclusive breastfeeding**

Three of the four children in this age group were exclusively breastfed, but only one mother was not experiencing problems. One mother complained of insufficient breastmilk and wanted to, but had not yet, added porridge. Another mother was breastfeeding exclusively only three or four times a day because she said the baby slept a lot, and a third mother was giving water in addition to breastmilk.

- Feeding problem: Non-exclusive breastfeeding  
Recommendation: Stop giving water

The mother giving water was hesitant to stop but agreed to try it. At follow up, she said her baby appeared to be doing fine so she would continue withholding water since she also wanted to minimize the baby's chance of getting diarrhea.

- Feeding problem: Mother not feeding frequently enough or complaining of insufficient breastmilk  
Recommendation: Breastfeed more frequently and longer at each breast

The mother who said she did not have enough breastmilk accepted this recommendation and reported that her baby seemed more satisfied and slept better. She said she was willing to adopt the recommendation because her baby was still very young, but planned to introduce porridge to the child at age 3, 4 or 5 months. The other mother was initially concerned about waking the baby up, but agreed to do so. At follow up, she said the baby was doing well and she would continue more frequent breastfeeding.

**Age group: 2 up to 4 months**

**Ideal feeding pattern: Exclusive breastfeeding**

Only one out of the seven infants in this age group was breastfed exclusively, although they were all breastfed. Of the six who were not exclusively breastfed, two were receiving water in addition to the breastmilk, two were receiving porridge and water. Another was being fed porridge only with the breastmilk, and the sixth child received Lactogen by feeding bottle.

- Feeding problem: Non-exclusive breastfeeding
- a) Recommendation: Stop giving water to the baby

All four mothers who were asked to stop giving water agreed to do so, although rather hesitant or surprised at first. They seemed to accept the explanation that breastmilk has enough water for the baby. At follow up, they all said they would continue to breastfeed exclusively because they had seen no adverse changes in the children after they stopped giving water.

- b) Recommendation: Stop giving porridge or Lactogen to the baby and breastfeed longer and more frequently

The mothers with babies in this age group were initially reluctant to give up feeding porridge or Lactogen to their babies, but three of the four agreed to try stopping the porridge or Lactogen and did so. At our follow up session they said they were breastfeeding more often as they were advised, but were willing to continue in order to keep their children healthy. The father of the child who was being fed Lactogen by bottle said that if it was a question of cleanliness, they would try to clean the bottle better. They decided to stop the Lactogen for a while, but felt they would have to use it again when the mother falls sick as she does sometimes.

**Age group: 4 up to 6 months**  
**Ideal feeding pattern: Exclusive breastfeeding**

None of the children in this age group was exclusively breastfed. Two of the nine children were fed breastmilk and water, with one receiving water only occasionally. The other seven received thin porridge with a little oil or sugar once or twice a day. Two had been given tastes of *nshima*.

- Feeding problem: Non-exclusive breastfeeding
- a) Recommendation: Stop giving porridge to the baby and breastfeed longer and more frequently

Two of the five mothers who received this recommendation agreed to stop giving porridge. One stopped because she felt it was causing her baby to have diarrhea, and the other had just started the porridge and agreed to stop if the baby did not yet need it. Both decided to follow the advice to breastfeed more. At follow up, the diarrhea was said to be better.

The other mothers were reluctant to stop feeding the child porridge because they said they did not have enough breastmilk, but agreed to increase breastfeeding and reduce the porridge. At follow up, one of those (with a 4 month old, who agreed only to reduce the amounts given) had stopped and said she was breastfeeding more. The other two also said they would breastfeed more and feed less porridge for a while because they wanted their children to be healthy.

- b) Recommendation: Stop giving water to the baby

This recommendation was given to five of the mothers. Two of the mothers (one who gave water only occasionally in addition to breastmilk, and another who had just started feeding small amounts of watery porridge) agreed to stop. The others decided to reduce only the amount of water given to the baby. At the follow-up visit, one of those who decided to only reduce the amount of water given had stopped completely. The mothers said they would continue giving no or a reduced amount of water because the babies appeared to be doing fine. One of those who decided to only reduce the amount of water said her husband did not want her to stop giving the child water completely.

- c) Recommendation: Increase breastfeeding time to empty breasts at a feeding

One of the women who received this recommendation revealed that she tries to stretch her milk supply to last through the day by feeding for short periods only. (It's not known how prevalent this misconception is.) All three mothers who tried this recommendation said they thought their milk supply had improved.

- Feeding problem: Child is fed porridge of low nutrient density  
 Recommendation: Feed thicker porridge enriched with sugar, oil, groundnuts, etc., in addition to the breastmilk

Two of the mothers whose children were over 5 months old and eating watery porridge were advised to make the porridge thicker by adding more mealie meal and to enrich it with sugar, oil, milk, or groundnuts. They both agreed and tried thicker porridge. One added milk or groundnuts and sugar, and the other added sugar in addition to the oil she had been already using. They both said their babies liked the new taste(s) and planned to continue trying other additions to the porridge. One of these mothers was eager to try other foods and decided to feed her child mashed avocado, which she said her baby liked a lot because “it was like porridge.”

**Age group: 6-12 months**

**Ideal feeding pattern: Introduction of soft or mashed solid foods at least three times a day, with continued breastfeeding**

All the eight children in this age group had been introduced to *nshima* which they were fed with ‘soup’ from the relish, but not the green leaves, beans, or fish in the relish. Most also continued to be fed thin porridge with sugar and/or oil. Feeding frequency was often at least three times a day, but occasionally one meal might be bread with a little tea and milk. They were all breastfed. Two of the mothers could not be found for second visits to offer recommendations, so feeding recommendations were offered to six mothers.

- Feeding problem: Foods fed are of low nutrient density/variety
- a) Recommendation: Feed thicker, enriched porridge

All five mothers who were advised to make the porridge thicker by adding more mealie meal agreed to do so, although one or two initially said they thought the porridge they fed was thick enough. After trying the thicker porridge with added sugar, oil, milk, or pounded groundnuts, they all said the children ate it well and liked it. One mother said her child ate and slept better (because she was more satisfied) and added, “I did not know that I have been starving my child.” Another said that it took longer to feed the child, but the child cried less during the day. It was easy for the mothers to accept that thicker porridge was more likely than thin porridge to keep the children satisfied for longer periods of time.

- b) Recommendation: Feed *nshima* with mashed relish not just the relish ‘soup.’

Mashing the relish to feed with the *nshima* was new to all the mothers, but they were willing to try it. Some expressed initial surprise at the suggestion to feed vegetables or beans to the children, while others said they had not thought about mashing it. Five of the six mothers with children in this age group who received this recommendation tried it. The fifth mother agreed to try it, but at follow-up said she had not yet tried that particular recommendation, but had tried others. They mashed the cooked green leaves, beans or fish relish with a wooden or metal spoon and worked it into the little lumps of *nshima* they put in the baby's mouth by hand. (A simpler

way would have been to mash the relish into a lump of *nshima* on a plate, but *nshima* mixed with relish in that way is reportedly not usual practice in Zambia.) Mothers were generally pleased with the results, and reported that their babies seemed to enjoy the food better and ate more of it. One mother who fed mashed pumpkin leaf relish with *nshima* said the baby now appeared to enjoy *nshima* better than porridge.

No easy way was found to render a piece of meat suitable for an infant to consume. The traditional way would be to pound the piece of cooked meat in the household mortar. This was not suggested to mothers because it would have been rather overwhelming for a small piece of meat in a relatively big mortar, and the cleanliness of the mortar and pestle could not be assured. One mother said she overcooked the piece of meat and mashed it with a wooden spoon.

- Feeding problem: Child is not fed frequently enough  
Recommendation: Feed at least one or more meal or snack a day

The one mother of a child in this age group who was given this recommendation initially said she would probably be too busy to try the recommendation, but she ended up trying different foods, such as mashed and boiled *mponda* (squash) and mashed beans, which she fed her child between the main meals. She also mashed guavas and fed her child the juice because her child did not like orange juice. She was the mother who said she did not know she had been starving her child when she saw how well the child was responding to the new practices.

- Feeding problem: Child is fed inadequate amount of food per feeding  
Recommendation: Offer more spoonfuls of food or more lumps of *nshima* at a feeding

The one mother who agreed to feed her child more food at a meal initially said she thought he ate enough and did not try that suggestion, although she tried others.

- Feeding problem: Amount child eats is unknown because he eats from a common bowl with others  
Recommendation: Serve child separately on own plate and supervise the child's eating

The one mother offered this recommendation said she liked the practice because it helped her see how much food the child ate.

**Age-group: 12 up to 18 months**

**Ideal feeding pattern: Family diet plus extra feedings, with continued frequent breastfeeding. Eat at least five times a day, in addition to breastfeeding.**

Five out of the seven children in this age group were still breastfed. They were eating family food (*nshima*), but some were still fed only the 'soup' part of the relish. The amount of food fed at a meal was sometimes inadequate, and the feeding frequency ranged from three to five times a

day (other than breastmilk). Some were given bread or a 'bun' with tea, and added sugar and milk as breakfast or a snack.

- Feeding problem: Child is not fed frequently enough  
Recommendation: Increase feeding by one or more meals or snacks a day

All four mothers who were offered this recommendation agreed to try to increase the number of feedings. They generally fed snacks such as bananas, avocados, or beans. One fed reheated, leftover *nshima* which she would have otherwise thrown out because people like their *nshima* freshly cooked. At follow up, one of them said that she liked feeding the child more often, however, she could not continue it because of the lack of money to buy food, but would feed the child more when the father gets paid.

- Feeding problem: Foods fed are of low nutrient density/variety
- a) Recommendation: Feed *nshima*, rice or potatoes with more relish, not just 'soup'

The three mothers advised to feed *nshima* with more of all parts of the relish tried it and said the children liked it. One of the mothers fed rice her child (instead of *nshima*) and meat because she said the child liked that better. She said she would try to continue to give the child what he likes because she wanted him to grow better.

- b) Recommendation: Feed thicker, enriched porridge between solid meals

All three mothers asked to thicken the child's porridge by adding more mealie meal did so. One of them added mashed beans for the first time and said the child liked it. One 14-month old who was still drinking several feeding bottles of milk reportedly found the thick porridge difficult to swallow. Mothers generally gave the porridge as a main meal, not as a snack between solid meals.

- Feeding problem: Child not fed adequate amounts of food at a feeding  
Recommendation: Increase the amount of food the child eats to about one cup (200 ml.) per meal

One of the two mothers who agreed to try offering about one cup of *nshima* said that the child ate more *nshima* and relish than usual, seemed more satisfied and slept well; the other mother said she did not like the practice because her child did not finish the increased amount of food. She did not encourage the child to eat more.

- Feeding problem: Child fed milk by a feeding bottle  
Recommendation: Stop use of feeding bottle and give milk by cup

The 14 month old child drinking mostly milk by bottle refused to drink the milk by cup.

**Age group: 18-24 months**

**Ideal feeding pattern: Family diet plus extra feedings, with continued frequent breastfeeding; eat at least five times a day**

In this age group, four out of the seven children were still breastfeeding. All the children ate family foods, but the number of meals (other than breastmilk) varied from as low as two to five or more. One mother explained that the number of meals depends on how much money the family has on a particular day. When the family does not cook often, the child may be fed small amounts of various snacks, such as candy, biscuits, or even ice. The feeding of porridge is not as common at this age and may be replaced by such foods as bread and tea or soft drinks given in the morning or between meals. One mother was given no recommendations because she reported an adequate number and quantity of meals.

- Feeding problem: Foods fed are of low nutrient density/variety
- a) Recommendation: Feed *nshima* with more relish

Three out of the seven mothers were given this recommendation. Two of them tried it, the third said she could not try it because the family did not have enough food. Of the two who tried, one gave *nshima* with beef and pumpkin leaves and said her child ate much more food than usual. The other mother modified the recommendation by feeding cooked potatoes in tomato and oil instead of *nshima* and was very pleased because she said that her child enjoyed and ate it very well.

- b) Recommendation: Make porridge thicker, enriched porridge

One of the two mothers who received this recommendation tried it and added sugar to it for breakfast. She said her child liked it. The other mother (the same one who said she could not afford to try anything) did not agree to try it.

- Feeding problem: Child is fed an inadequate number of times
- Recommendation: Feed the child one or more meals or snacks a day

Three of the four mothers who received this recommendation increased the number of meals, two of them from four to six times a day. One of them gave an extra meal of *nshima* from reheated, leftover *nshima*. She also fed her child a snack of boiled *mponda* (squash). The third mother, who reported only two meals at the first interview (because she said her child did not like to eat), felt motivated enough to try foods such as fried egg with bread, *nshima* and beans or egg, and increased the number of feedings from two to six. She said the child seemed to like the new foods better and she hoped that the child's weight would improve. The fourth mother said she did not have extra food to give.

- Feeding problem: Child not fed adequate amounts of food at a feeding  
Recommendation: Increase amount of food the child eats to at least one cup (200 ml.) per meal

Inadequate amount of food per feeding was identified for two of the children in this age group; for a third child, the amount was unknown because he ate from a common bowl with older children. One of the two mothers reported, among other problems, that the child had a poor appetite so she agreed to try different foods (rather than increase the amount of food the child had been refusing) and to try to improve the taste of "nshima" by adding more relish. The recommendation to increase the amount of food per feeding was given to one mother who tried it, but said her child could not finish the increased amount of food.

- Feeding problem: Amount child eats is unknown because he eats from common bowl with older children  
Recommendation: Offer child food on separate plate and supervise the eating

The mother who was offered this recommendation was initially reluctant because she said she did not have enough relish to divide between the children. She agreed to try it for the youngest child and reported that the child seemed more satisfied and did not ask for food at other times during the day the way he used to do. She remarked that made her think he had not been receiving enough food. Interestingly, she reported that she also tried to separately serve the next youngest child (who was visibly small for his age), but the child refused to eat by himself.

**Table 2: Summary of Results of Household Trials of Feeding Recommendations**

Feeding recommendation	Suggested	Agreed	Tried	Liked
Breastfeed more frequently	2	2	2	2
Increase breastfeeding time	5	4	4	3
Stop water	10	7	7	7
Reduce water <sup>4</sup>	3	2	2	2
Stop Lactogen	1	1	1	1
Stop porridge	9	5	5	5
Reduce porridge	4	3	3	3
Give thicker porridge with sugar, oil, groundnuts, beans, milk	12	11	11	10
Increase feeding by one or more meals or snacks	9	9	8	8
Increase amount of food per feeding	4	4	3	1
Feed <i>nshima</i> with mashed relish of green leaves, beans, fish, meat, etc.	11	11	9	9
Stop use of feeding bottle	1	1	1	0
Feed child on a separate plate	2	2	2	2

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4. If a mother was resistant to stopping porridge or water, she was offered the option of gradually reducing water or porridge while increasing breastfeeding.

## **E. Ways of Encouraging a Child to Eat**

One of the issues the study probed was what mothers usually do to encourage children to eat, especially when they are anorexic. Most of the mothers said that feeding a sick child is a problem, and a few said their children did not eat well even when they were not sick. Those who said that they try to make the child eat by forcing the child's mouth open and pushing the food down also said that technique is often not successful and sometimes makes the child vomit. Many said they try to offer the child's favorite food, such as potato, rice, eggs, bun, porridge, banana, groundnuts, powdered milk, and Fanta orange drink. Almost all the mothers said they breastfeed more when the child is sick, and two said that they increase the frequency of feeding other foods. A few said they do nothing to encourage the child to eat. One mother said she reduces the amount of food fed to the child.

In general, mothers did not describe non-food-based behaviors for encouraging their children to eat. Only one mother said she sings to the child to encourage him to eat, but it is possible that some mothers did not think of mentioning other techniques that they use. There were instances when mothers or caretakers were observed in the homes employing various techniques to encourage their non-ill children to eat more: one placed the child on a special chair to force the child to sit still and eat; another threatened the child with injections by the interviewer if he did not eat; and an older sibling in another situation was observed playing games with a toddler to encourage him to eat more.

It would appear that emphasis should be placed on giving mothers some practical suggestions on how to feed children when they don't want to eat or are ill. Some emphasis should also be placed on counseling mothers to increase feeding during convalescence. Many of the mothers who try to entice their children with favorite foods during illness may continue to do so during convalescence if they understood the need for the children to make up the nutrient deficit they incurred during illness.

## **F. Revise Recommendations**

Infrequent breastfeeding in the first weeks after birth was added to the original recommendations when that emerged as a problem with one mother.

## **G. Discuss Revised Recommendations with Local Experts**

The recommendations, presented in the *Foodbox* format, were discussed by a group of the local nutrition community composed of staff from the NFNC, UNICEF, WHO, NRDC, NCSR (National Council for Scientific Research), and the Food Legume Project. The group suggested that traditional cereal-based beverages, such as *munkoyo*, which are thicker porridges thinned by the addition of certain roots (described as similar to the way malt thins out porridge), should be included in the final recommendations as snacks to be fed between meals. Although these beverages were not mentioned by the sample of mothers in the study, they reportedly are made in some homes. Caterpillars, also a traditional food, were also suggested, but some pointed out that caterpillars are very chewy, hard to mash, and very young children would not be able to eat them.

There was also a discussion about recommending bread as a snack because it was likely to be fed with tea. Since bread is easy and fairly energy-dense, it was decided to leave it in the recommendations. The issue of tea fed to young children is well-known in the country and health workers would continue to advise mothers against giving it. For families who can afford it, milk will be advised as a replacement for tea.

Some members of the group expressed strong reservations about the separation of the 4 to 6 month old age group from the 0-6 month age group, as it currently appears in the IMCI sheet on *Feeding Recommendations in Health and Sickness* (appendix B). They pointed out that the country had just adopted a policy of promoting exclusive breastfeeding for 0-6 month old children rather than just 0 to 4-6 month olds, and that the IMCI feeding recommendations should reflect that changed policy. It was therefore decided that the feeding recommendations sheet would be redesigned to reflect the national policy on breastfeeding and the conditions under which foods other than breastmilk are recommended for infants under 6 months of age.

## **H. Conclusions from the Household Trials**

The following observations from the household trials will be helpful when training health workers to counsel mothers about child feeding.

### Mothers' willingness to make changes

- Almost all mothers were willing to make some changes, even if small, to improve their children's feeding. One mother was so enthusiastic she kept a record of what she was feeding the baby. Only 2 out of the 40 mothers and child caretakers did not agree to try at least one recommendation; they said they had no food or money. Even then, one said she would buy some snack for the child when she has money.
- Mothers were willing to try recommendations even if they were unfamiliar. For example, one mother who does not like avocado decided to feed it to her baby who, she said, enjoyed it very much, and almost all mothers asked to do so agreed to try mashing the relish to feed with *nshima* even though they had never tried it before.
- If mothers were given the chance, they negotiated something they could try. Two mothers decided to use beans and avocado (respectively) because they said these were relatively cheaper than milk or groundnuts.

### Acceptable behavior changes for the commonest feeding problems

- Mothers were willing to (1) thicken their children's porridge by adding more maize meal and add an energy-dense food to it; (2) mash the relish to feed with *nshima*; (3) increase the frequency of feeding at least one more time per day for children 12-24 months; and (4) stop giving water to young infants under 4 months of age who were being fed breastmilk and water only.

Mothers of children in all age groups were willing to thicken the porridge by adding more maize meal or to mash the relish to feed with the *nshima*. The younger the child, the more willing the mother was to stop giving water and or porridge to the baby. Mothers of infants 4 to 6 months old were very reluctant to stop porridge or water. Most did not, but agreed, in some cases, to reduce the amount of water or porridge given while trying to increase breastfeeding. The mothers of the children under 6 months, regardless of age of the child, who did stop giving water to their children all said they would adopt the behavior because they said they saw no adverse effects in the child. (Based on the experience of colleagues who had tried to breastfeed exclusively for six months, there is a strong negative societal pressure against not giving water to the baby. It is likely that mothers who meant to continue practicing exclusive breastfeeding beyond a few weeks after birth will need of support and encouragement which currently do not exist in the community.)

#### Relatives' influence on mother's decision

- Several fathers in the sample either encouraged the mother to try the new practices, or, as in two cases, fathers influenced their wives to reject a recommendation. One woman also said that she would have tried a recommendation (breastfeed exclusively and stop porridge) if her mother did not happen to live close by. It is important to be aware that sometimes counseling should be extended to the mother's relatives.

#### Motivating mothers to try recommendations

- Mothers' initial reluctance to try a recommendation was generally overcome if they were given explanations for the suggested practice.
- There was an attempt to tailor suggestions to the household situation. For example, if they couldn't cook another meal, a snack or reheated, leftover food was suggested.
- The agreed-upon behaviors were written down as a reminder for the mother. This was especially important in cases where the baby was in the care of caretakers other than the mother. In at least one case, the mother liked the written recommendations so that her absent husband could be convinced of the need to improve the child's feeding and provide more resources.
- Once they understood the need to increase their children's food intake, some mothers came up with their own ideas of what and how to prepare a dish their children might like, which points to the important role community-based activities could play in supporting improved young child feeding.

**I. Suggest Local Adaptations to the *Foodbox*, *Counsel the Mother about Feeding Problems* and *Counsel the Mother Modules***

Not all the foods shown in these sections were encountered in the trials: some because they were not in season, others, such as *nshima* with sour milk, are included because they are traditional foods that are sometimes eaten and are appropriate nutritious foods for children.

The Foodbox

The feeding recommendations suggested for the *Foodbox* for age groups 6-12 months, 12-24 months, and over 24 months are shown in appendix A. The NFNC suggested that the recommendations for infants under 6 months of age should reflect the national policy on breastfeeding, which recommends exclusive breastfeeding for that period of time, unless medically indicated. The column for infants aged 4-6 months shown in the generic *Foodbox* (appendix B) was therefore eliminated. It is also to be noted that the amounts of food to give infants 6-12 months and 12-24 months are shown in the *Foodbox* and not just expressed as 'adequate amounts' to remind health workers to discuss with mothers the amounts of food their children should be eating.

In order to draw attention to improved feeding during illness, the recommendations for a child who is not feeding well during illness (shown under *Counsel the Mother about Feeding Problems* below) could be moved to the bottom of the *Foodbox* sheet shown in appendix A.

Counsel the Mother about Feeding Problems

The following adaptations are suggested for the *Counsel the Mother About Feeding Problems* sheet shown in appendix C. Suggested changes are shown in italics:

- If mother reports difficulty with breastfeeding, assess breastfeeding. (See YOUNG INFANT chart.) As needed, show the mother correct positioning and attachment for breastfeeding.
- If the child is less than *6 months old and is taking water*, other milk or foods—
  - Build the mother's confidence that she can produce all the breastmilk that the child needs.
  - Suggest giving more frequent, longer breastfeeds, day and night, gradually reducing *water*, and other milk or foods.
- If other milk needs to be continued, counsel the mother to—
  - Breastfeed as much as possible , including at night.
  - Give adequate amounts of the infant milk formula or modified cow's milk for the age of child, prepared hygienically.
  - Prepare the milk formula hygienically, according to the directions provided.

- If using cow's milk for infants under 6 months of age, add 2 parts boiled cow's milk to 1 part boiled water, and add 1 tablespoonful of sugar to each cup (200 ml.) of the diluted milk.
- When the child is over 6 months of age, undiluted cow's milk may be fed.
- Finish prepared milk within an hour.
  
- If the mother is using a bottle to feed the child—
  - Recommend substituting a cup for bottle.
  - Show the mother how to feed the child with a cup.
  
- If the child is not being fed actively, counsel the mother to—
  - Sit with the child and encourage eating.
  - Give the child an adequate serving in a separate plate or bowl.
  
- If the child is not feeding well during illness, counsel the mother to—
  - Breastfeed more frequently and for longer if possible.
  - Use soft, varied, appetizing, and favorite foods to encourage the child to eat as much as possible, and offer frequent small feedings.
  - Clear the child's blocked nose if it interferes with feeding.
  - Expect that the appetite will improve as child gets better.
  - Offer increased amount of food or continue to give favorite foods and encourage the child to eat as much as possible for about a week after the illness is over.
  
- Follow up any feeding problems within five days.

Counsel the Mother training module

**a) Incorporate the following feeding practices into the training module**

*Breastfeeding*

- Breastfeed exclusively for the first six months.
- Breastfeed longer to empty the breasts; frequent emptying of the breasts stimulates more milk production.
- Breastfeed at least eight times day and night. Wake and feed young infant if he sleeps too much.
- Use both breasts at each feeding or alternate breasts at different feedings.

### *Good complementary foods*

- Make the porridge thicker by adding more mealy meal. Thicker porridge will more satisfy the baby, and for longer periods of time.
- Enrich the thick porridge with sugar and oil, pounded groundnuts, mashed boiled beans, milk, sour milk, or egg.
- Feed *nshima* with mashed vegetable, bean, fish, or egg relish, not just with the 'soup.' Add pounded groundnuts to green leaves relish.
- Feed the child *nshima* mixed with sour milk.
- Feed the child boiled potato or rice with fried egg.
- Reheat leftover *nshima* (instead of throwing it out) and feed it to the child with relish as an extra meal, in addition to family meals.
- Between family meals—
  - Give the child bread or a bun spread with margarine or avocado between main meals. Soften the bread by dipping it in milk.
  - Give fruit, such as mashed banana, avocado, mango, pawpaw, orange, etc, to the child. Mash avocado, mponda, pumpkin and add a little sugar and milk if available.
  - Give the child mashed and boiled groundnuts or mashed beans.
  - Give the child traditional beverages, such as *munkoyo*, *chibwantu*, *tobwa*, and *mayehu*.

### **b) Suggestions for materials to include in training**

To motivate mothers to adopt new behaviors, explain that—

- Watery porridge is not better than a mother's milk. A mother's milk has more strength in it than porridge. It is better to breastfeed more if the mother thinks she does not have enough milk because she will make more milk if she breastfeeds more.
- Thicker porridge may take longer to feed than thin porridge. Have patience and the child will learn to take it better. If a child is eating *nshima*, he can take thicker porridge.
- A young child's stomach is small so he needs to eat many times a day.
- A child who is fed enough frequently may stop crying and play more.
- A child who has enough to eat will not demand food all the time.

- If a child has enough to eat, he will be healthier and grow better.
- Some children need to be encouraged to eat, and this requires patience. It may help if they can be distracted or entertained while being fed. Some mothers find it helpful to sing or play games to keep the child interested in eating.

### *Training aids*

- To illustrate to health workers the differences in energy densities of common foods, include in the training information on energy densities of different foods, such as breastmilk at 70 kcal/100 ml. and thin porridge at 25 kcal/100 ml.
- Provide common household cups and plates to help health workers estimate about how much food (volume) to counsel mothers to feed children of different age groups.
- If possible, let health workers practice with mothers the methods used in the household trials: assessing a child's feeding, determining what the problems are, and negotiating a behavior change acceptable to the mother.

### *Some reasons mothers gave for deciding to adopt a recommendation*

The reasons some mothers gave for deciding to adopt a behavior may motivate other mothers and should be recognized by health workers in their counseling:

- The child did not cry as much as before [after eating more food].
- He plays more [because he seemed more satisfied].
- I'll try avocado because it is cheap.
- I want my child to gain weight.
- She now likes nshima better than porridge [because the nshima was fed with mashed relish].
- She stopped asking for food [at other times of the day].
- She stopped picking food from off the ground.
- I don't have to look for a cup, clean it, and find water for the baby [when she stopped giving water to the baby].
- I did not know I was starving him [because he ate so much more food].

**APPENDIXES**

**APPENDIX A:**  
**FEEDING RECOMMENDATIONS DURING  
SICKNESS AND HEALTH (ZAMBIA)**

**Earlier version of Feeding Recommendations during Sickness and Health (Lusaka)**

0 up to 6 months	6 up to 12 months	12 up to 24 months	24 months and over
<ul style="list-style-type: none"> <li>● Breastfeed at least 8 times day and night.</li> <li>● Do not give other foods or liquids, including water, glucose, porridge unless medically indicated.</li> <li>● Beginning at age 4 months if the baby is not gaining adequate weight, add complementary foods listed under 6 up to 12 months once or twice a day after breastfeeding</li> </ul>	<ul style="list-style-type: none"> <li>● Breastfeed frequently at least 8 times day and night.</li> <li>● Give thick porridge enriched with sugar and oil, pounded groundnuts, mashed beans, soya, milk, sour milk, or egg.</li> <li>● Give <i>nshima</i> (or rice or potato) with <u>mashed</u> relish cooked in oil or groundnuts.</li> <li>● Between the main meals, give mashed foods (such as fruit , beans, <i>mponda</i>), milk, and bread.</li> <li>● Feed three times a day if breastfed, five times if not breastfed.</li> <li>● Feed about three-quarter cup (150 to 180 ml) of food per meal.</li> </ul>	<ul style="list-style-type: none"> <li>● Breastfeed as often as child wants</li> <li>● Give family foods such as <i>nshima</i> and mashed relish, not 'soup.'</li> <li>● Between family meals, give thick porridge, fruit s, <i>mponda</i>, bread with margarine, milk, egg, etc.</li> <li>● Feed at least five times a day (main meals and snacks).</li> <li>● Serve child separately with at least one cup (about 200 ml.) of food per meal.</li> </ul>	<ul style="list-style-type: none"> <li>● Give family foods such as <i>nshima</i> and relish at least 3 times a day.</li> <li>● Between family meals, give fruit (such as banana, avocado orange, mango, pawpaw, guava), <i>samp</i>, fried sweet potato, bread, rice with sugar or oil, egg, beans, etc.</li> <li>● Feed at least five times a day (main meals and snacks).</li> </ul>

Note: If there is space for these examples of foods, then the note at the end of the generic *Foodbox* recommending cereal with oil, meat, fish, eggs or pulses, fruits and vegetables may be omitted.

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## Feeding Recommendations during Sickness and Health

0 up to 6 months	6 up to 12 months	12 up to 24 months	24 months and over
<ul style="list-style-type: none"> <li>● Breastfeed <u>at least</u> 8-10 times day and night.</li> <li>● Do not give other foods or liquids, including water, glucose, or porridge unless medically indicated.</li> <li>● Beginning at age 4 months if the baby is not gaining adequate weight, add complementary foods listed under 6 up to 12 months once or twice a day after breastfeeding</li> </ul>	<ul style="list-style-type: none"> <li>● Breastfeed frequently at least 8 times day and night.</li> <li>● Feed three times a day if breastfed, five times if not breastfed, about three-quarter cup (150 to 180 ml) per meal.</li> <li>● Feed thick porridge enriched with sugar and oil, pounded groundnuts, mashed beans, soya, milk, sour milk, or egg; <i>nshima</i> (or rice or potato) with <u>mashed</u> relish cooked in oil or groundnuts, not just 'soup.'</li> <li>● Between the main meals, give mashed foods (such as fruit, beans, <i>mponda</i>), milk, and bread.</li> </ul>	<ul style="list-style-type: none"> <li>● Breastfeed as often as child wants.</li> <li>● Feed at least five times a day family foods and snacks between main meals.</li> <li>● Serve child separately with at least one cup (about 200 ml.) food per meal.</li> <li>● Feed family foods such as <i>nshima</i> and mashed relish, not 'soup.'</li> <li>● Between family meals, give thick porridge, fruit s, <i>mponda</i>, bread with margarine, milk, egg, etc.</li> </ul>	<ul style="list-style-type: none"> <li>● Give family foods such as <i>nshima</i> and relish at least 3 times a day.</li> <li>● Two times a day between family meals, give fruit (such as banana, avocado orange, mango, pawpaw, guava), <i>samp</i>, fried sweet potato, bread, rice with sugar or oil, egg, beans, etc.</li> </ul>

**APPENDIX B:**

**FEEDING RECOMMENDATIONS DURING  
SICKNESS AND HEALTH (WHO)**

## ► Feeding Recommendations During Sickness and Health

### Up to 4 Months of Age



- Breastfeed as often as the child wants, day and night, at least 8 times in 24 hours.
- Do not give other foods or fluids.

### 4 Months up to 6 Months



- Breastfeed as often as the child wants, day and night, at least 8 times in 24 hours.
- Only if the child:
  - shows interest in semisolid foods, or
  - appears hungry after breastfeeding, or
  - is not gaining weight adequately,

add complementary foods (listed under 6 months up to 12 months).

Give these foods 1 or 2 times per day after breastfeeding.

### 6 Months up to 12 Months



- Breastfeed as often as the child wants.
- Give adequate servings of:

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- 3 times per day if breastfed;
- 5 times per day if not breastfed.



### 12 Months up to 2 Years



- Breastfeed as often as the child wants.
- Give adequate servings of:

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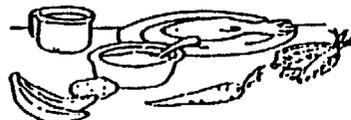


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or family foods 5 times per day.



### 2 Years and Older



- Give family foods at 3 meals each day. Also, twice daily, give nutritious food between meals, such as:

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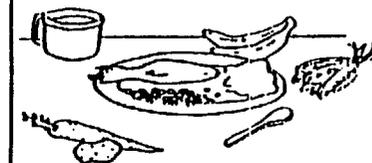
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\* A good daily diet should be adequate in quantity and include an energy-rich food (for example, thick cereal with added oil); meat, fish, eggs, or pulses; and fruits and vegetables.

### Feeding Recommendations For a Child Who Has PERSISTENT DIARRHOEA

- If still breastfeeding, give more frequent, longer breastfeeds, day and night.
- If taking other milk:
  - replace with increased breastfeeding OR
  - replace with fermented milk products, such as yoghurt OR
  - replace half the milk with nutrient-rich semisolid food.
- For other foods, follow feeding recommendations for the child's age.

**APPENDIX C:**  
**COUNSEL THE MOTHER ABOUT FEEDING PROBLEMS**

## Counsel the Mother About Feeding Problems

If the child is not being fed as described in the above recommendations, counsel the mother accordingly. In addition:



- ▶ If the mother reports difficulty with breastfeeding, assess breastfeeding. (See *YOUNG INFANT* chart.) As needed, show the mother correct positioning and attachment for breastfeeding.
- ▶ If the child is less than 4 months old and is taking other milk or foods:
  - Build mother's confidence that she can produce all the breastmilk that the child needs.
  - Suggest giving more frequent, longer breastfeeds, day and night, and gradually reducing other milk or foods.

If other milk needs to be continued, counsel the mother to:

- Breastfeed as much as possible, including at night.
- Make sure that other milk is a locally appropriate breastmilk substitute.
- Make sure other milk is correctly and hygienically prepared and given in adequate amounts.
- Finish prepared milk within an hour.



- ▶ If the mother is using a bottle to feed the child:
  - Recommend substituting a cup for bottle.
  - Show the mother how to feed the child with a cup.

▶ If the child is not being fed actively, counsel the mother to:

- Sit with the child and encourage eating.
- Give the child an adequate serving in a separate plate or bowl.

▶ If the child is not feeding well during illness, counsel the mother to:

- Breastfeed more frequently and for longer if possible.
- Use soft, varied, appealing, favourite foods to encourage the child to eat as much as possible, and offer frequent small feedings.
- Clear a blocked nose if it interferes with feeding.
- Expect that appetite will improve as child gets better.



▶ Follow-up any feeding problem in 5 days.

**APPENDIX D**

**COMMON FEEDING PROBLEMS AND  
RECOMMENDATIONS FOR IMPROVEMENTS**

## **COMMON FEEDING PROBLEMS AND RECOMMENDATIONS FOR IMPROVEMENTS**

### **Age group: From birth up to 2 months**

Ideal feeding pattern: Exclusive breastfeeding

Problem 1: Mother is not breastfeeding exclusively and is giving water

#### **Recommendations:**

- 1a. Breastfeed more frequently at least 8-10 times a day during day and night
- 1b. Stop feeding water and other liquids to baby and feed breastmilk only

Problem 2: Mother is not breastfeeding frequently at least 8 times during day and night

#### **Recommendations:**

- 2a. Breastfeed baby frequently at least 8 times day and night

### **Age group: 2 up to 4 months**

Ideal feeding pattern: Exclusive breastfeeding

Problem 3: Mother is not breastfeeding exclusively

#### **Recommendations:**

- 3a. Increase breastfeeding to at least 8-10 times during day and night
- 3b. Stop giving water, porridge, milks or other liquids and foods to the baby
- 3c. Reduce frequency and/or amount of water, porridge, other milk and foods given to the baby while increasing the frequency and length of breastfeeding

Problem 4. Baby fed other milks, liquids or foods when mother is away from baby

#### **Recommendations:**

- 4a. Express breastmilk into clean cups to be fed to baby when mother is away from the baby

Problem 5. Mother wants to breastfeed exclusively but complaining of inadequate breastmilk

**Recommendations:**

- 5a. Breastfeed more frequently at least 8-10 times during day and night
- 5b. Breastfeed longer on both breasts to empty breasts at each feeding

Problem 6. Mother is using feeding bottles for milk or water

**Recommendations:**

- 6a. Stop the use of feeding bottles, milk or water and breastfeed more frequently and longer at least 8-10 times a day

**Age group: 4 up to 6 months**

Ideal feeding pattern: Exclusive breastfeeding

**Problem 7: Mother is not breastfeeding exclusively**

**Recommendations:**

- 7a. Increase breastfeeding to at least 8-10 times during day and night and breastfeed longer to empty breasts at each feeding
- 7b. Stop giving water, porridge, milks or other liquids and foods to the baby
- 7c. Reduce frequency and/or amount of water, porridge, other milk and foods given to the baby while increasing the frequency and length of breastfeeding

**Problem 8: Baby is fed porridge of low nutrient density, and mother is unwilling or unable to breastfeed exclusively**

**Recommendations:**

- 8a. Breastfeed more frequently using both breasts at least 8 times a day
- 8b. Breastfeed before feeding other foods
- 8c. Make porridge thicker by adding more mealy meal and enrich the porridge by adding one or more of: pounded groundnuts, sugar, oil, fresh milk, sour milk, yogurt, mashed beans, pounded kapenta.
- 8d. Make thicker porridge by adding more maize meal or other cereal flour

**Problem 9: Baby is fed nshima and "soup", and mother is unwilling to breastfeed exclusively**

- 9a. Feed nshima softened with mashed vegetable, bean, groundnuts or fish relish and not just with the relish "soup"

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**Age group: 6-12 months**

Ideal feeding pattern: Introduction of soft or mashed solid foods at least three times a day with continued breastfeeding

**Problem 10. Foods fed are low in nutrient density**

- 10a. Feed thick porridge enriched with one or more of the following: pounded groundnuts, sugar, oil, fresh milk, sour milk, yogurt, soya flour, margarine, pounded kapenta, mashed cooked beans or egg
- 10b. Feed nshima softened with mashed fish, vegetable, bean, or groundnuts relish and not just with the "soup"
- 10c. Feed nshima mixed and softened with sour milk
- 10d. Feed rice or mashed potato mixed with mashed green leafy vegetable, bean, groundnuts, kapenta, fresh fish or other vegetable relish, and not just with the "soup"
- 10e. Feed snacks such as mashed banana, avocado, mponda, pawpaw, pumpkin, mango, sweet potato, or bun or scones

**Problem 11. Inadequate amount (less than 3/4 cup) of food fed at meals**

**Recommendations:**

- 11a. Offer more spoonfuls of food or more lumps of nshima to child at each feeding
- 11b. Give at least one more meal or snack a day from foods listed above in recommendations 10a-e.

**Problem 12. Child is fed or eats from same bowl with others so amount child eats is unknown**

**Recommendations:**

- 12a. Serve child separately on own plate with about three-quarter cup of food and feed or supervise the child's eating

Problem 13. Child is not fed frequently enough

**Recommendations:**

- 13a. Give one more meal or snack a day from foods listed above recommendations 10a-e.
- 13b. Encourage child to eat more spoonfuls of food at each meal

Problem 14. Child not yet introduced to soft or mashed family foods, or feeding only on liquid foods

**Recommendations:**

- 14a. Feed foods listed under recommendations 10 above at least three times a day in addition to breastfeeding

Problem 15. Child not eating enough because of illness and poor appetite

**Recommendations:**

- 15a. Breastfeed frequently
- 15b. Offer and encourage the child to eat small frequent enriched meals and try different and favorite foods

**Age group: 12-18 months**

Ideal feeding pattern: Eating family foods and extra feeds at least five times a day, with continued breastfeeding

**Problem 16: Child eating family foods but fed less than 5 times a day**

**Recommendations:**

- 16a. Increase feeding by one or more meals or snacks a day.
- 16b. Feed snacks such as banana, pawpaw, mango, avocado, bun, scones, fried cassava, boiled sweet potatoes, pumpkin, mponda, oranges, biscuits, mashed beans etc. in between meals.

**Problem 17: Child eating semi-solids or meals of inadequate nutrient density or variety**

**Recommendations:**

- 17a. Give nshima, rice, or Irish potatoes with more of all types of relish made of green leaves, beans, groundnuts, meat, fish. Give all parts of the relish, including meat and fish.
- 17b. Porridge, when given, should be thick and enriched with one or more of: groundnuts, sugar, oil, milk, sour milk, beans, pounded fish, egg, and may be given between solid meals.
- 17c. Give snacks of such as pawpaw, avocado, banana, orange, guava, mango, mponda, egg, orange, pumpkin, buns, etc.

**Problem 18: Child not eating adequate amounts of food per meal or eating from same bowl with others**

**Recommendations:**

- 18a. Child should be fed or eat under supervision from separate plate with at least one cup of food per meal.
- 18b. Feed child one or more meal or snack a day from foods and snacks listed above.

Problem 19: Child not eating enough because of illness and poor appetite

**Recommendations:**

- 19a. Feed and encourage child to eat small frequent enriched meals and try different and favorite foods, with frequent breastfeeds

**Age group: 18-24 months**

Ideal feeding pattern: Eating family foods and extra feeds at least five times a day, with continued breastfeeding

**Problem 20: Child eating family foods but fed less than 5 times a day**

**Recommendations:**

- 20a. Increase feeding by one or more meals or snacks a day.
- 20b. Feed snacks such as banana, pawpaw, mango, avocado, bun, scones, fried cassava, boiled sweet potatoes, pumpkin, mponda, oranges, biscuits, mashed beans in between meals.

**Problem 21: Child eating semi-solids or meals of inadequate nutrient density or variety**

**Recommendations:**

- 21a. Give nshima, rice, or Irish potatoes with more of all types of relish made of green leaves, beans, groundnuts, meat, fish, etc. Give all parts of the relish, including meat and fish.
- 21b. Porridge, when given, should be thick and enriched with one or more of: groundnuts, sugar, oil, milk, sour milk, beans, pounded fish, egg, and given between solid meals.
- 21c. Give snacks of such as pawpaw, avocado, banana, orange, guava, mango, mponda, egg, orange, pumpkin, buns, mashed beans etc.

**Problem 22: Child not eating adequate amounts of food per meal or eating from same bowl with others**

**Recommendations:**

- 22a. Feed child or supervise feeding from separate plate with at least one cup of food per meal.
- 22b. Feed child one or more meal or snack a day from foods and snacks listed above.

**Problem 23: Child not eating enough because of illness and poor appetite**

**Recommendations:**

- 23a. Feed and encourage child to eat small frequent enriched foods and try different and favorite foods, with frequent breastfeeds.