

5. ADAPTING THE QUESTIONNAIRE AND PROBING

PVO staff reported a range of experiences with adapting Module 2 of the KPC 2000+. Some reported that this posed no problem for field staff, while others said that additional guidance would be welcome. Several stressed that any additional guidance should be on or attached to the tool itself.

The task of adapting Module 2 requires some qualitative exploration prior to the survey. PVO representatives with experience in nutrition programming emphasized that if a complementary feeding intervention is planned – or any nutrition intervention with an education or behavior change component – gathering qualitative information is absolutely essential to grounded program development. Investing in this work prior to the baseline *also* means that KPC questions can be appropriately adapted with little additional effort. Qualitative work will also provide staff with important information to use as a basis for giving enumerators guidance on probing on the complementary feeding questions.

There are many resources available providing guidance on rapid qualitative methods (Dickin, Griffiths and Piwoz 1997; Winch et al. 2000). Key informant and other individual interviews, group interviews, focus groups, rapid market surveys, various free listing and sorting exercises with foods, and recipe trials have all been used to help development workers understand local food availability, beliefs and practices. Qualitative inquiry may be very abbreviated or in-depth. Experienced PVO staff report that even a small investment in well-planned qualitative work (e.g., two-three days for one or several staff members) can yield significant insights and better-adapted tools, as well as essential information for designing educational messages and activities.

Specific guidance on methods is beyond the scope of this document. Rather, we suggest a list of topics to be addressed related to the quantity and quality of complementary foods. Other topics for qualitative inquiry, not detailed here, could include breastfeeding practices, food beliefs, sanitation and hygiene, caregiver feeding styles, who feeds the child, child appetite and responses to poor appetite, feeding during illness, etc. In order to design interventions, additional areas for qualitative research include identification of potential motivations for change and barriers and constraints to changing behavior. All of these are important, but here we restrict our topics to those relevant to adapting the complementary feeding questions on the KPC 2000+:

1. Local meal patterns and frequency of feeding infants and young children 6-23 months of age;
2. What foods are available, and which are given to the 6-23 month age group;
3. Methods of preparation, consistency and energy density of complementary foods; and
4. Amounts fed to infants and young children 6-23 months of age.

For each of these four topics, examples of possible questions are provided in Boxes 8-11. In some cases, this information will be available through review of recent work by the PVO or others working in the area. In other cases, a new inquiry will be needed.

Topic 1: Local meal patterns and frequency of feeding infants/young children

Reasons for exploring this topic:

1. To understand local concepts and vocabulary for eating episodes, so that questions and probes can be worded appropriately; and
2. To understand the usual meal and feeding patterns, so that a set of probes can be developed to get complete information on frequency of feeding.

Box 8. Topic 1: Local meal patterns and frequency of feeding

Examples of aspects to explore:

- What are the names for meals and snacks, how do people describe and define them?
 - What counts as a meal?
 - Is there a concept/name for between-meal eating/snacks?
 - What are typical snacks? (are typical snacks low energy density, like some fruits, vegetables, or high energy density, like breads or fried snacks)?
 - Are the usual snacks likely to provide significant amounts of energy?
 - What is the typical meal pattern?
 - How often do caregivers usually cook?
 - How much do meal patterns and cooking schedules vary between households (e.g., richer/poorer)?
 - How much do meal patterns vary between seasons?
- How are meal patterns different for the 6-23 month age group, compared to the family pattern?
 - Do infants/children in this age group get extra meals or other extra feeds (other than breastfeeding)?
 - Are they always offered food when adults/older children eat?
 - What is the typical feeding pattern for this age group?
 - Typical times of the day
 - Number of times per day (not including breastfeeding)
 - Is there a concept of meals versus snacks or other “feeds” for this age group?
 - How much does the feeding pattern vary (between households, seasons)?
 - At what age do children begin to feed themselves?
 - To what extent do children this age self-feed? (inquire separately for 6-11, 12-18, and 18-23 months)
 - What do they eat when they feed themselves?
 - Do caregivers have different ideas about the “best” number of times to feed young children?

Topic 2: What foods are available and which are given to 6-23 month age group

Reasons for exploring this topic:

1. So that typical foods can be listed for each food group on the 24-hour food group recall;
2. To gain understanding of the foods usually given to the age group of interest, in order to guide development of probes. Probes may be needed for mixed foods, special foods made for young children, etc.; and
3. To determine if the optional food groups (e.g., organ meat, small protein food, etc.) should be included on the questionnaire.

Box 9. Topic 2: Identifying available foods

Examples of aspects to explore:

- What foods and drinks are available from home production and in local markets?
 - Refer to the food groups in the questionnaire, and be sure to get information about foods in each group, if available
 - Be sure to gather information about fats/oils used in cooking
 - Gather information about any fortified foods/drinks/products available in the project area
- What are the seasonal differences in the range of foods available?
- What role do wild/forage foods play and during which seasons?
 - Every year or some years?
 - Insects, grubs, etc.
 - Meat from wild animals
 - Leaves, roots, wild fruits
 - Are any wild fruits known to be rich in vitamin A?
(Consult with national food composition tables/nutritionists)
- Looking at all available foods, which are given to infants and young children?
 - Which foods are considered especially good for infants and young children?
Which of these are usually affordable for most peoples? Only some people? A few?
 - What special foods are prepared and given to infants and young children at various ages
(First 6 months? 6-8 months? 9-11 months? 12-23?)
 - Why are these special foods given?
 - How much do views on the above questions vary?
 - Do they vary by generation? Education level?
(Note actual practices may vary from expressed “taboos”)

Topic 3: Methods of preparation, consistency and energy density

Reason for exploring this topic:

To identify if low energy density of complementary foods is a problem in the program/project area. This cannot be determined through the KPC itself. Because frequency of feeding recommendations are based on a minimum energy density, KPC results for frequency of feeding will be interpreted differently if energy density of foods is inadequate. This information can also help planners prioritize intervention activities.

As noted, porridges and gruels should not be very thin and watery; for example, they should not flow easily through a bottle with nipple; quantitatively, energy density should be at least 0.8 kcals/gram.

Box 10. Topic 3: Methods of preparation, consistency, energy density

Examples of aspects to explore:

- Identify the foods most commonly given to infants/children 6-23 months
 - Include porridges, gruels, and adult forms of the staple food if given
 - Include any other special foods for this age group
 - Include snacks or between-meal feeds commonly given
- For the most commonly prepared foods, learn method(s) of preparation and ingredients used
 - What are the ingredients and steps in making the dish?
 - Any fermentation or germination steps?
 - How long do the most common foods take to prepare?
 - What is the consistency? (Liquid, semi-liquid? Stiff porridge? Can it be drunk? Does it flow off a spoon?)
 - How much do preparation method and consistency vary between women?
 - How much do the ingredients vary?
(Between households, seasons, etc.)
 - How is it usually fed (By cup? Bottle? Spoon? By hand?)
 - Calculate energy density (kcals/gm) from the most common recipes and for the most common snacks^a

^a Calculation of energy density involves the following steps: Arrange to observe mothers prepare the most common porridges, soups, etc. Weigh each ingredient that provides energy (water and spices/seasonings do not need to be weighed). Weigh the total quantity of food produced. Choose a set of food composition tables (e.g., food composition data tables are available in the WorldFood Dietary Assessment System, a public domain program available at www.fao.org/infoods/software/worldfood.html; food composition tables are also available from the USDA Nutrient Data Laboratory at www.nal.usda.gov/fnic/foodcomp/). For each ingredient, calculate energy (kcals); sum kcals from all ingredients and divide by weight of food produced (in grams). Alternatively, if observation is not possible, make calculations based on recipes gathered from mothers in the area. However, it is difficult for many people to accurately estimate the quantities they use in preparing food, so observation is strongly preferred. Also, when recipes are used, foods must usually be prepared in order to weigh the cooked product, as this is very difficult to estimate based on recipes. For an example on how the process was used in Haiti, see Menon et al., forthcoming.

Topic 4: Amounts fed to young children 6-23 months

Reasons for exploring this topic:

1. Recommendations for frequency of feeding depend on a “feed” being at or near gastric capacity – that is, the amount a child can eat based on the size of his/her stomach. Information from the questions below will help managers interpret data on frequency of feeding;
2. To help the team define what counts as a “feed”; and
3. To identify and “flag” foods that may be given or consumed in very small amounts (e.g., a teaspoon of milk in a cup of tea; a small piece of tomato in a bowl of thin soup); this will guide probing on the food group recall and may ensure that condiment sized portions are not recorded.

Box 11. Topic 4: Amounts fed to young children

Examples of aspects to explore:

- Can women show a typical amount infants/young children are usually fed?
 - Use various containers in home to determine
 - Discuss typical amounts of various foods for different ages
 - If possible, visit homes to observe amounts being fed
- When not sick, does the child usually eat all the food offered? (Most of it? Half? Less?)
- How does the caregiver know if the child is hungry?
- How does the caregiver decide how much to feed?
 - A set amount? A share of what is available? Until the child is satisfied? Until time or patience runs out?
 - How does this change with the age of the infant or child?
- When does the caregiver consider that the child has been fed?
 - Only when staple food is given?
 - When the child eats until s/he is full?
 - Does it count when a child feeds him/herself a snack?
 - When a child shares someone else's food?
- How do caregivers describe appetite and lack of appetite?
- How do they know when the child has had enough (caregiver's perspective on what is enough)?
- How do they know when the child is full or satisfied (i.e., based on what cues from the child)?
- How often does food scarcity determine the child's portion size?
- Does food scarcity affect the amount of staple food fed to the child? Other foods? Both?
- Does food scarcity delay the introduction of complementary foods?

Once answers are available covering these four topic areas, the food group lists can be adapted, and suggested probes can be developed for the Module 2 questions. The foods listed on the food group recall should include all widely available foods that belong in the group (for example, all foods made with grain that are eaten in the area), even if some people have indicated that certain foods are not (or should not be) fed to young children.

The result of this process should be a clear and specific list of foods, using local terms that will be understood by caregivers. One PVO reported excellent results using photographs of all common foods, which were laminated with plastic and held together on a ring. This allowed enumerators to show caregivers each food as they asked about them.

Foods that are totally unavailable in the local area do not need to be included on the list (for example, orange-fleshed sweet potatoes are totally unavailable in many areas). However, if a project plans to improve access to and/or promote consumption of specific foods, these foods should be included in the list, even if households have had little access to date. They should be included in order to establish a zero or near-zero baseline for the pre-project proportion of young children eating the food.

In addition to adapting the questionnaire based on grounded knowledge of local practices, projects may want to adapt the questionnaire to capture information specific to any existing set of government recommendations for infant and child feeding. For example, as part of the Integrated Management of Childhood Illness (IMCI) program, many countries have participated in a process resulting in adapted feeding recommendations. To the extent that projects will be using or supporting use of existing counseling recommendations, any country-specific recommendations should be reflected in the questionnaire and indicators.

Finally, prior to fielding the survey, and usually during enumerator training, probing questions should be developed. Specific probes for the food group recall and the frequency of feeding question will depend on available foods, forms of food given to infants/young children, and local ideas about foods and meal patterns. However, several general suggestions are relevant when developing probes:

- *Develop probes in consultation with project staff and enumerators*³³
Share the information from the qualitative inquiry and come to training with some suggestions, but also listen to staff and enumerators. Reach consensus on a standard set of probes.
- *Address the issue of portion size while training on the food group recall question*
The KPC questionnaire is not designed to capture information about portion size. However, condiment-size portions should not be recorded as “yes” for a food group on the food group recall. For example, when dried fish or fish powder is used in tiny amounts do not check the box for “fish”. It is not possible to specify here a complete set of rules or probes; rather the knowledge gained in the qualitative phase can be used

³³ By “probes” we mean follow-up questions that the enumerator asks after the survey question, either because the respondent does not understand or is having difficulty answering, and/or to get more complete information.

during training as a basis for discussions with staff and enumerators. The group should agree on how to probe consistently to make sure condiment-size portions are not recorded as “yes” for the food group. To ensure consistent use of standard probes, they can be included as written follow-up questions on the adapted questionnaire.

- *Address the issue of mixed foods while training on the food group recall question*
Enumerators should know that when a mixed dish is eaten by the child, all the food groups included in the mixed dish should be marked “yes.” For example, if a child eats thick porridge to which an egg is added both the “grain” group and “eggs” should be marked. If the child eats a sauce made with oil, cassava leaves, and a substantial amount of groundnut flour, all three groups should be marked. Once again, local knowledge of commonly eaten mixed foods should guide discussions during training.
- *Reach consensus on what counts as a “feed” for the frequency of feeding question*
Depending on the local meal pattern, typical snacks, etc., reach consensus on what counts as a feed for infants/young children. Develop a set of probes to help caregivers remember the number of times the child was fed (or fed him/herself), based on this definition of a feed. Several specific suggestions are made on the suggested revised questionnaire.

Once the Module 2 questions are appropriately adapted, the suggested KPC indicators can provide a very good picture of key feeding practices in the project area, both at baseline and in later assessments.

6. OPTIONS FOR PRESENTING INFANT AND CHILD FEEDING RESULTS

This section will demonstrate options for presenting the information available from Module 2 of the KPC. The simplest possible presentation of information would consist of descriptive statistics for the subset of indicators selected by the project for assessing objectives. For example, if three indicators were chosen for assessing progress, results could be described as simply as:

- 43% of infants 0-5 months were exclusively breastfed yesterday
- 39% of those 6-23 months ate at least the minimum number of times appropriate for age yesterday
- 25% of children 6-23 months had meat, organ meat, poultry, fish or eggs yesterday

However, in many cases project staff and others may value a more complete descriptive presentation of results. This section provides some options for such a presentation. While all the information could be presented in tables, we focus on providing examples of useful figures. All figures shown here can be constructed using the output from the Epi Info analysis program provided in Appendix 8.

In addition to the examples provided here, project staff may want to examine specific comparisons (e.g., comparisons by sex of the child, by maternal education level, by other maternal or household characteristics, geographic areas or agroecological zones, etc.). We do not present such comparisons, because the appropriateness will vary by situation. For example, in areas where there has never been evidence of gender bias in feeding, it is generally not very informative to look at feeding by sex; in areas where the vast majority of women have no education, comparisons by education level are not useful. By contrast, in most situations comparisons by age of the child are very informative and some examples are presented below.

For most of the figures on the next pages, data are taken from recent *DHS+* surveys, and country and year of survey are indicated. For certain results (e.g., use of colostrum, certain food groups) questions were not included on the *DHS+* questionnaire, so illustrative data are used to show how the figures may help readers visualize results.

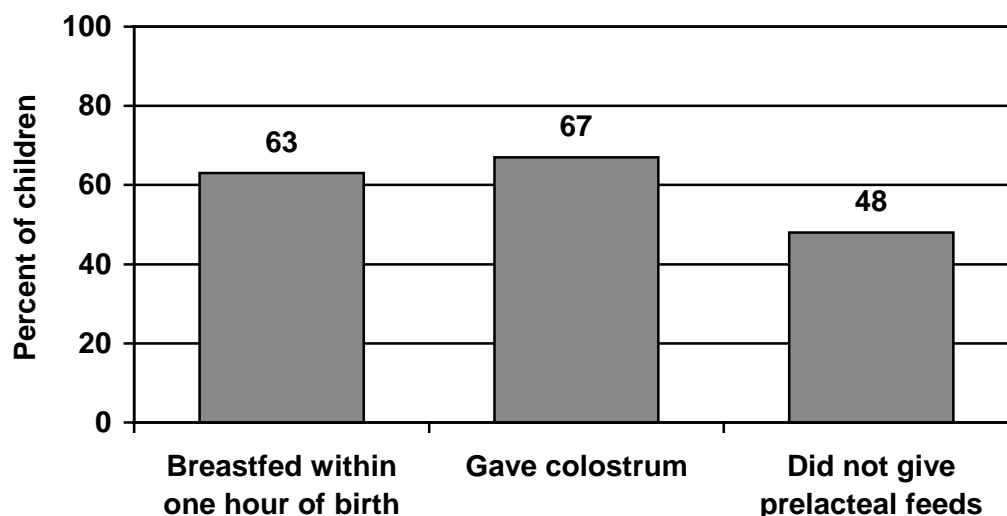
Maternal recall of early feeding practices

Module 2 provides information on several early practices. We suggest limiting reporting for these maternal recall questions to responses from mothers of children 0-11 months.³⁴ As children get older, maternal recall of early practices becomes less accurate. These results can be given in a table, or presented in bar chart as in Figure 2. Figure 2 shows the percent of infants breastfed within an hour of birth, given colostrum, and *not* given prelacteal feeds (i.e., all three

³⁴ We suggest *reporting* only data from mothers of children 0-11 months. The question may be asked of all mothers. This is because many times it is preferable to limit the number of age-based filters on a questionnaire; when questions are brief and simple it may be easier to ask the question of all mothers, but report the results for a subset. However, when projects employ parallel sampling, questions on early feeding practices can be left off questionnaires that are specifically designed for children 12 months and older.

show the positive practice). When many women report giving prelacteal feeds, it can be useful to look more specifically at what was given (questions 5A – 5X on Module 2 of the KPC 2000+ questionnaire).

Figure 2. Early feeding practices: responses from mothers of infants 0-11 months^a



^a Data for initiation of breastfeeding and avoidance of prelacteal feeds are taken from the Benin *DHS+* (2001). No *DHS+* data are available on use of colostrum, so illustrative data are used.

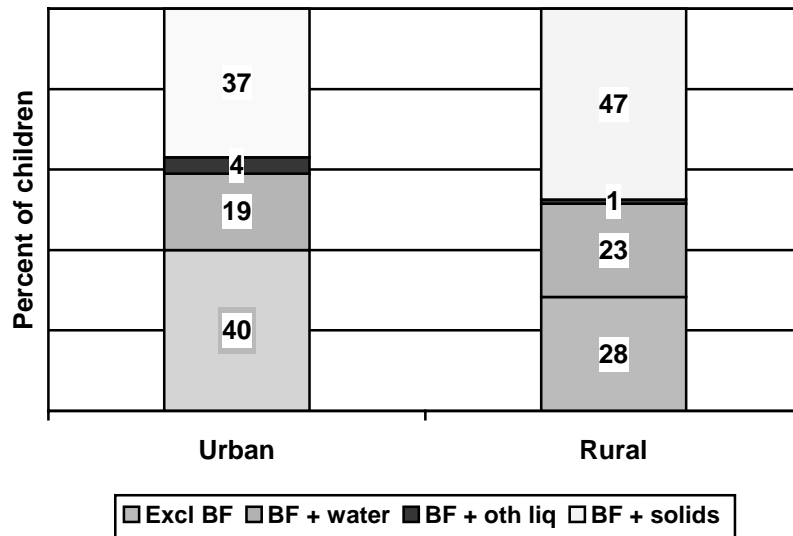
Current breastfeeding practices for 0-5 month old infants

The indicator for exclusive breastfeeding is a single proportion (percent of infants aged 0-5 months who were fed only breastmilk in the last 24 hours). Projects with a focus on breastfeeding may also want to look at the following:

- Percent of infants 0-5 months not breastfed
- Percent of infants 0-5 months given only breastmilk and water yesterday
- Percent of infants 0-5 months given only breastmilk and other liquids yesterday
- Percent of infants 0-5 months given solid food yesterday

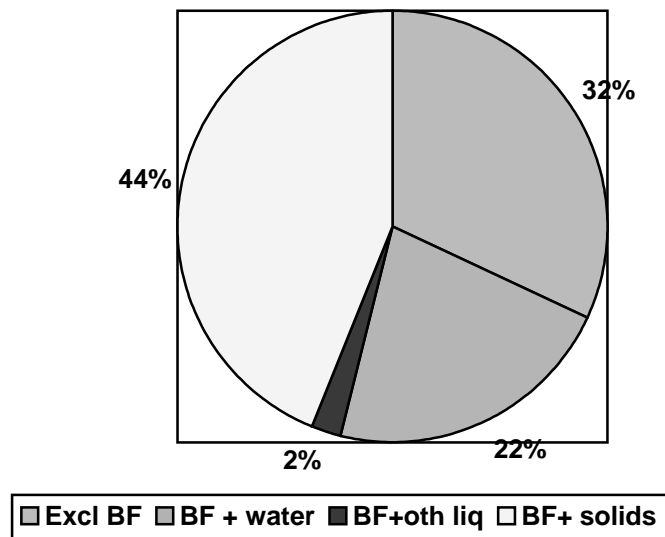
These additional statistics give a clearer picture of how far current practices are from the ideal (exclusive breastfeeding) and may also help focus interventions. These statistics are sometimes presented in the form of a “stacked bar chart,” as in Figure 3. The stacked bar chart is particularly useful when results from a number of areas are being presented (or when other comparisons are being made). When no comparison is being made, a pie chart (Figure 4) can be used instead.

Figure 3. Feeding practices for infants 0-5 months, by area of residence (Option 1) (Example data from Zimbabwe DHS+ 1999)



In the Zimbabwe DHS+ (1999) all infants 0-5 months were breastfed, so there is no category for “not breastfed” in Figure 3. In other areas, the stacked bar chart, and the pie chart below, would include a category for “not breastfed”.

Figure 4. Feeding practices for infants 0-5 months (Option 2) (Example data from Zimbabwe DHS+ 1999)

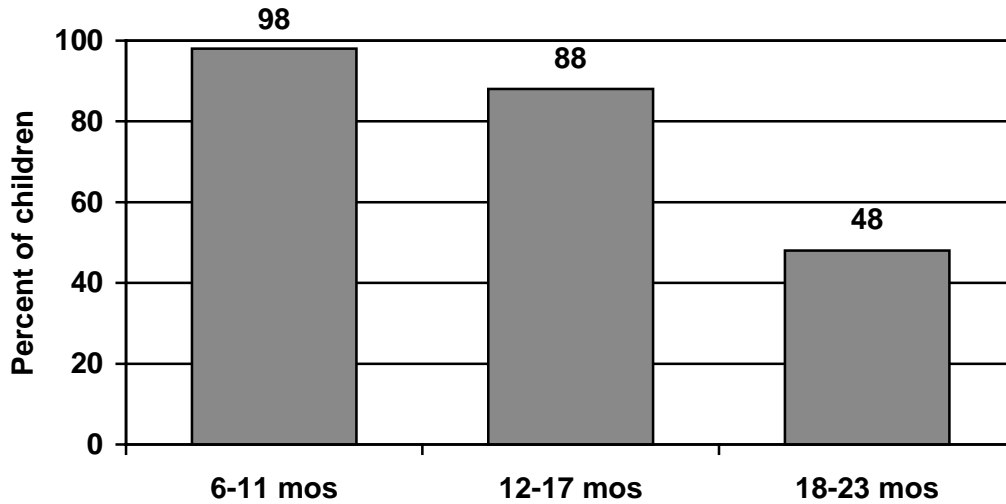


When the proportion of infants being fed either liquids other than water and/or solids is high, project staff may also want to examine output for the various food and liquid groups, to determine which foods and liquids are being given to young infants.

Continued breastfeeding for infants and children 6-23 months

The three suggested indicators for continued breastfeeding can be presented as a bar chart, by age group (see Figure 5). Figure 5 shows example data from the Zimbabwe *DHS+* (1999).

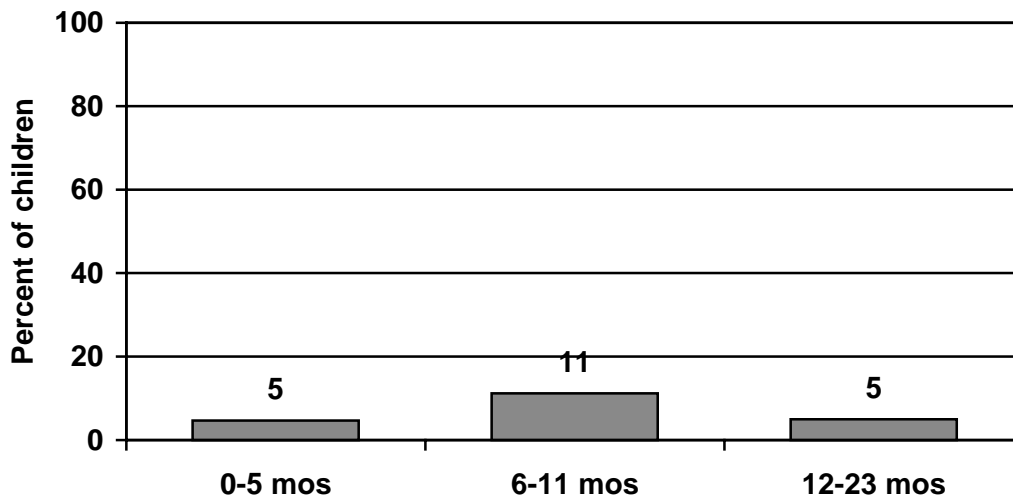
**Figure 5. Continued breastfeeding, by age group
(Example data from Zimbabwe *DHS+* 1999)**



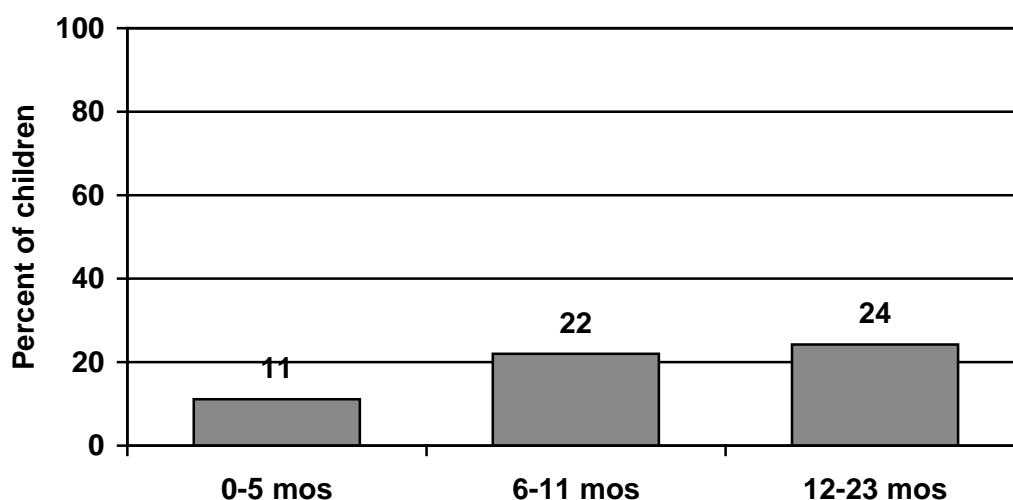
Bottle use

The suggested indicator for bottle use is the percent of infants 0-11 months old who were given anything by bottle yesterday during the day or at night. Again, depending on the situation, it may be useful to look at bottle use by age group, and also to look at bottle use among older children (12-23 months of age). Figure 6 shows example data from all children 0-23 months in the Zimbabwe *DHS+* (1999) and Figure 7 shows data for rural children only from the Peru *DHS+* (2000).

Figure 6. Bottle use by age group (Example data from Zimbabwe *DHS+* 1999)



**Figure 7. Bottle use by age group, rural children only
(Example data from Peru DHS+ 2000)**



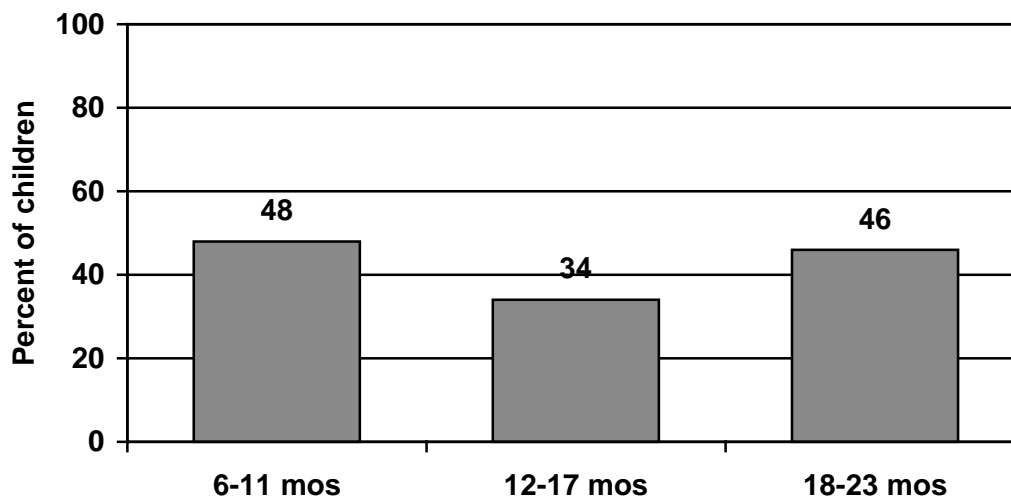
In the case of both Zimbabwe and Peru, bottle use was nearly identical among 12-17 and 18-23 month old children. Therefore these two groups were presented together. The Epi Info analysis program in Appendix 8 generates statistics for both 6-month age groupings and 12-month age groupings, so that either is an option for presentation.

Frequency of feeding for infants and children 6-23 months

The frequency of feeding indicator is also a single proportion: the percent of children aged 6-23 months who ate at least the minimum recommended number of times yesterday. As described previously, the new Guiding Principles recommend that infants 6-8 months be fed 2-3 times per day (with additional snacks) and that those 9-23 months be fed 3-4 times per day (with additional snacks).

Results for frequency of feeding can be presented as an overall statistic, and by age group. Once again using data from the Zimbabwe DHS+ (1999) to illustrate, 42% of children aged 6-23 months ate at least the recommended number of times yesterday. Figure 8 shows results by age group.

Figure 8. Percent of children who ate at least the minimum recommended number of times yesterday, by age group (Example data Zimbabwe DHS+ 1999)



The Guiding Principles recommend that infants 6-8 months should be fed a minimum of 2 times, while children 9-23 months should be fed a minimum of 3 times. However, in Figure 8 data are not presented separately for infants 6-8 months of age, because in most KPC surveys, the number of children in this very narrow age group would be too small. The smaller proportion of children eating the recommended number of times in the 12-17 month age group reflects the fact that the recommendation changes by age group, with more frequent feeding recommended at 9 months and above.

Liquids yesterday

Questions about which liquids the child had yesterday are useful in several ways. These questions are needed in order to define the groups shown in Figures 3 and 4, above. Presentation of other results from these questions will depend on local circumstances. For example, in areas where milk is fairly available, the proportion of children having milk yesterday is important. This is particularly important for non-breastfed children. Milk can be looked at separately, or as part of a dairy group (see below). As another example, in some areas there may be concern that coffee or tea is widely given to young children; in other areas the use of thin soups for complementary feeding may be a concern.

The Epi Info analysis program in Appendix 8 produces descriptive statistics for each liquid or group of liquids on the questionnaire. In addition, information on commercial infant formula, milk other than breastmilk, and other dairy is provided separately for breastfed and non-breastfed children. Statistics are produced for all ages, for ages 0-5 months and for ages 6-23 months. Project staff can present information about any liquid of interest.

We particularly recommend that projects consider assessing and presenting results on dairy and formula for non-breastfed children. Non-breastfed children who receive neither formula nor milk or dairy are very unlikely to have adequate intakes of calcium and other nutrients.

Figure 9 shows example data from the Haiti *DHS+* 2000, where 32% of children 6-23 months were no longer breastfed, and formula use was somewhat prevalent; milk, cheese and yogurt are shown together as “dairy” since very few children had cheese or yogurt. In countries such as Haiti where formula use is somewhat common, it may be useful to assess what proportion of children received neither milk nor formula; this proportion is not shown here (and is not generated by the Epi Info analysis program in Appendix 8). However, the *minimum* proportion of children receiving neither is easily calculated from the Figure.

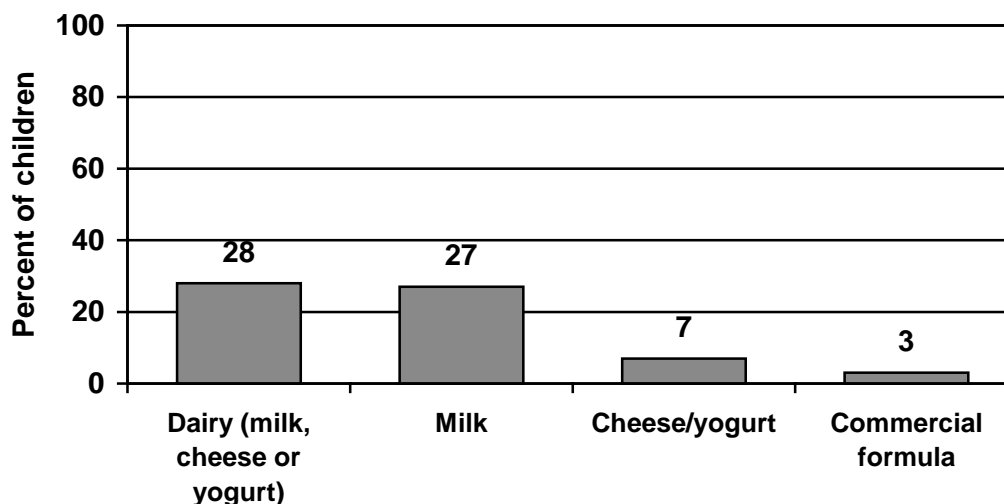
Figure 9 shows that *at least* 48% of the non-breastfed children received neither. That is, if there is no overlap, and none of the children who had dairy also consumed formula, and none of those who had formula had dairy, then the percent having one or the other can be summed (36% + 16% = 52%) This leaves 48% with neither dairy nor formula. If, as is likely, there was overlap, and some children had both dairy and formula, then the true percent receiving neither would be higher.

Figure 9. Percent of non-breastfed children 6-23 months who had dairy or formula yesterday (Example data Haiti *DHS+* 2000)



Figure 10 (next page) shows example data from the Rwanda *DHS+* 2000, where only 10% of the children were no longer breastfed, and formula use is very rare. Since only 28% of the children had dairy yesterday, and only 3% had formula, a *minimum* of 69% of the non-breastfed children had neither dairy nor formula the day before the survey.

Figure 10. Percent of non-breastfed children 6-23 months who had dairy or formula yesterday (Example data Rwanda *DHS+* 2000)

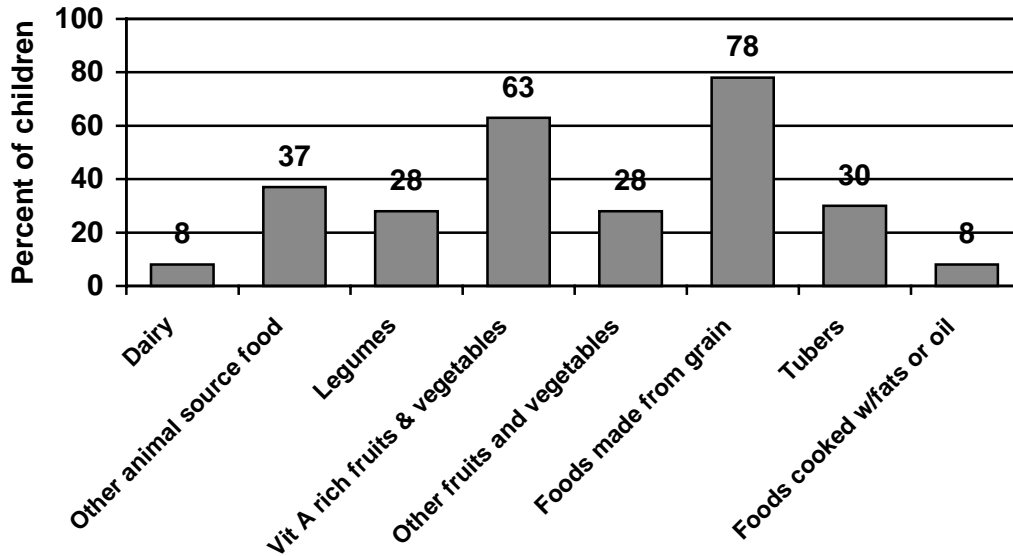


Note that the Figure above does show some overlap, and most of the children eating cheese or yogurt yesterday had also had milk. Thus the proportion who consumed dairy (28%) is not the sum of those having milk and those having cheese/yogurt, but instead is very close to the proportion who had milk.

Food groups eaten yesterday by infants and children 6-23 months

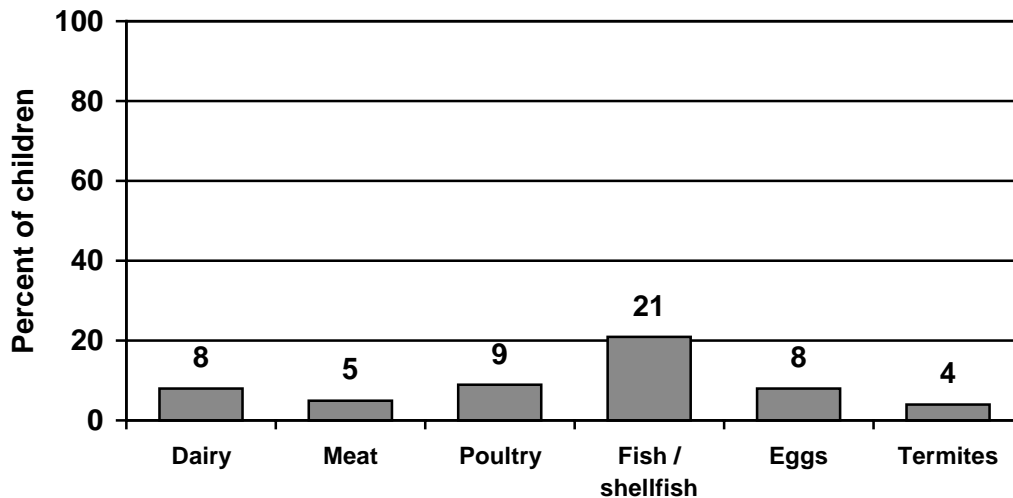
Information on food groups eaten yesterday can also be presented in bar charts. Figure 11 shows descriptive information for the food groups in the diversity variable; Figure 12 breaks down the animal source foods into more specific groups, and Figure 13 does the same for vitamin A-rich plant foods. Figures 11 and 13 use example data from the Malawi *DHS+* 2000. However, data for Figure 12 are illustrative only, because meat, poultry, fish, and eggs are grouped together on the *DHS+* questionnaire; we have suggested listing each of these four separately on the KPC.

Figure 11. Percent of children 6-23 months eating various food groups yesterday (Example data Malawi DHS+ 2000)



In Figure 11, the 37% of children who ate “other animal source food yesterday” may have had one or more of the following standard groups: meat, fish, poultry, and eggs. In addition, on the Malawi DHS+ questionnaire, termites are included in this food group. Figure 12 shows a more specific (illustrative) breakdown for types of animal source foods; this would be useful if project activities were aimed at increasing the proportion of children receiving one or more of the specific foods. Note that dairy is shown separately in both Figures. In addition to the groups shown in Figure 12, organ meats could be shown separately when this optional group is added to the questionnaire.

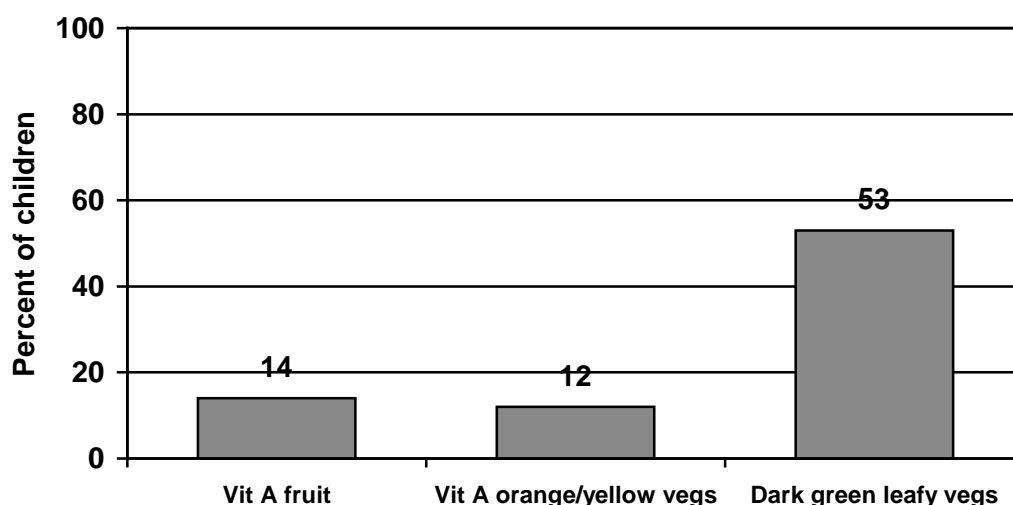
Figure 12. Percent of children 6-23 months eating various animal source foods yesterday



Depending on local circumstances and project foci, it may not be necessary to present this level of detail for animal source foods. The Epi Info analysis program in Appendix 8 also produces descriptive statistics for “flesh foods” (meat/organ meat, poultry, and fish grouped together) and for all animal source foods grouped together (dairy, eggs, meat/organ meat, poultry and fish).

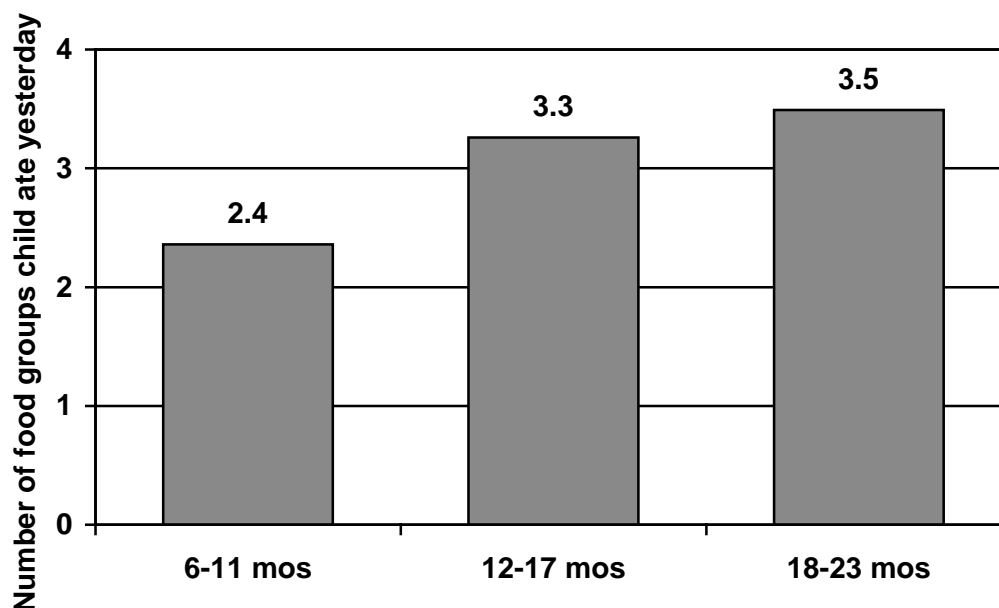
Figure 11 also showed the proportion of children eating any vitamin A-rich plant food yesterday (63%). Again using data from Malawi, Figure 13 shows the proportion eating each of the three sub-groups of vitamin A-rich plant foods. The sum of these three groups is greater than 63%, because some children will have had more than one yesterday (e.g., ripe mango and dark green leafy vegetables).

Figure 13. Percent of children 6-23 months eating various vitamin A-rich plant foods yesterday (Example data Malawi DHS+ 2000)



The indicator “dietary diversity” reflects one aspect of diet quality, and provides a summary measure of the information presented in Figure 11. As with the previous indicators, this can be presented as a single number, and by age group; output from the example Epi Info analysis program (Appendix 8) provides both. Figure 14 shows dietary diversity by age using the Malawi DHS+ 2000 as an example. The range of the diversity variable here is 0 to 7, since on the DHS+ questionnaire eggs are grouped with meat, poultry and fish. Nevertheless the data illustrate increases in diversity with age. The overall average for children 6-23 months was 3.0 food groups yesterday.

**Figure 14. Mean number of food groups eaten yesterday, by age group
(Example data Malawi DHS+ 2000)**



Young child feeding practices score for children 6-23 months

The young child feeding practices score can be presented as a single number, summarizing several feeding practices. Since an objective is to summarize practices across age groups, we do not recommend presenting the young child feeding practices score by age. Other comparisons – for example by child’s sex, maternal education, etc. – may be useful, depending on local circumstances.

To provide some context and illustrate the range of scores that may be encountered, we once again use recent *DHS+* data from a number of countries. Table 13 shows that the average (mean) young child feeding practices score ranges from 2.9 in Mali to 4.6 in Peru, out of the possible total score of 6. Table 13 also illustrates how average scores for the individual components, and their contribution to the total score, vary between countries. Finally, Table 13 also shows the percent of children 6-23 months receiving the highest possible score in each country.

Table 13. Young child feeding practices score for 10 countries (DHS+ survey data)

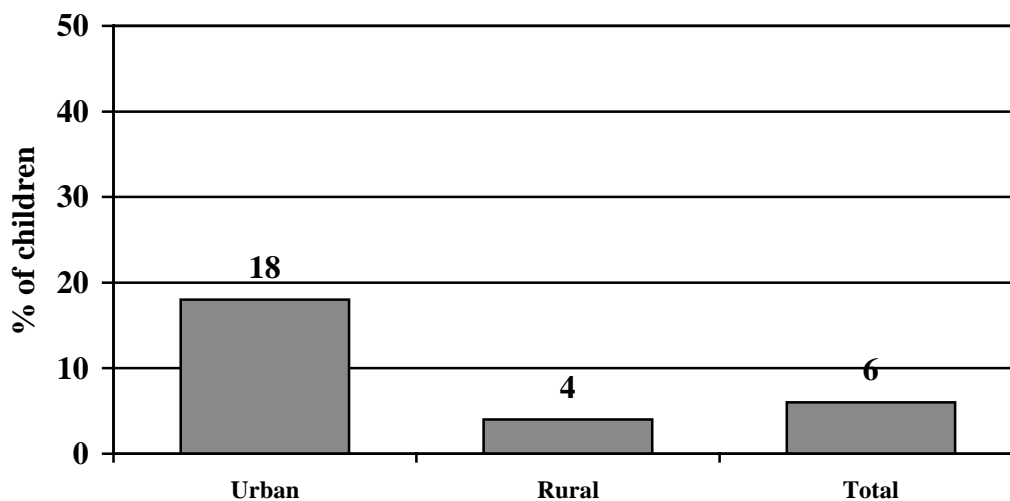
Country	Average score				Percent scoring "6"
	Continued breastfeeding (0,2)	Frequency of complementary feeding (0-2)	Dietary diversity (0-2)	Young child feeding practices score ^a (0-6)	
Benin	1.8	1.1	0.8	3.6	11
Ethiopia	1.8	1.1	0.5	3.4	4
Malawi	1.8	1.4	0.7	3.9	6
Mali	1.8	0.8	0.3	2.9	1
Rwanda	1.8	0.6	0.7	3.2	3
Cambodia	1.6	1.5	0.9	4.1	14
Nepal	1.9	1.5	0.7	4.2	11
Colombia	0.9	1.5	1.5	4.1	21
Haiti	1.4	1.0	1.2	3.5	4
Peru	1.5	1.6	1.4	4.6	30

^a For some countries, the component scores do not add up exactly to the young child feeding practices score due to rounding.

Good young child feeding practices prevalence

“Good” young child feeding practices are identical to a score of “6” on the young child feeding practices score and can be expressed as a single percent as in the last column of table 13 above. When managers wish to present differences between two or more groups, a bar chart may be useful. For example, as shown above, the total good young child feeding practices prevalence for Malawian children aged 6-23 months was 6%. Figure 15 compares the proportion of urban children and rural children fed using “good practices” to the total proportion for Malawi.

Figure 15. Percent of children 6-23 months fed with selected “good practices” by area of residence (Example data Malawi DHS+ 2000)



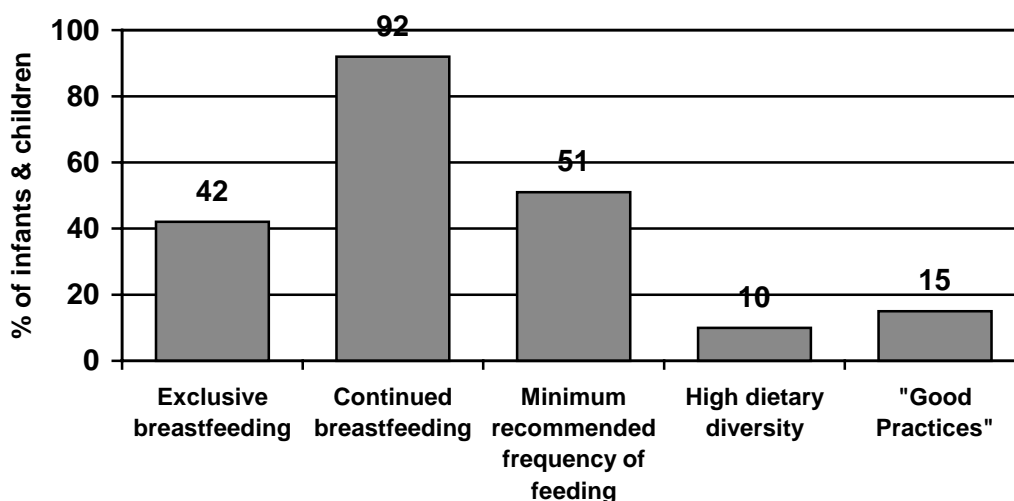
Good infant and young child feeding practices prevalence

“Good” infant and young child feeding, which goes beyond complementary feeding to summarize selected practices across the 0-23 month age range, can also be presented as a single percent. In addition, a bar chart can be used to illustrate the proportion of children who are fed with each of the following four “good practices”:

- 0-5 months Exclusive breastfeeding of infants yesterday
- 6-23 months Continued breastfeeding
- 6-23 months At least minimum age-appropriate frequency of feeding yesterday
- 6-23 months High dietary diversity yesterday³⁵

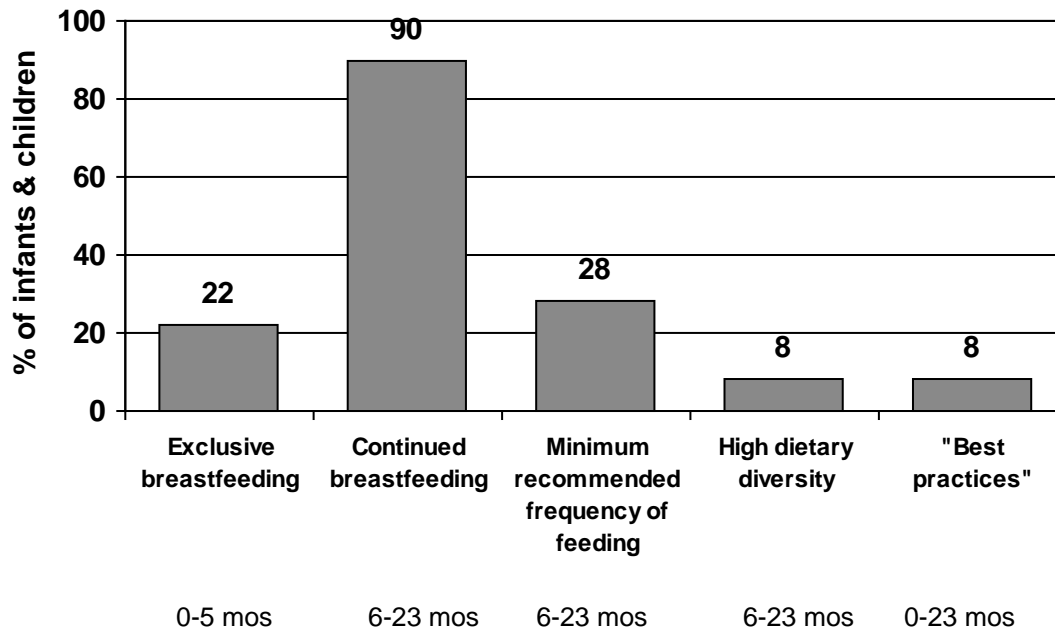
Figures 15-17 illustrate this using *DHS+* data from Malawi, Mali, and Peru. In Malawi, overall, 15% of infants and children 0-23 months were fed with “good practices”; this figure was 8% in Mali and 38% in Peru.

Figure 16. Percent of infants and children fed with selected “good practices” (Example data Malawi *DHS+* 2000)

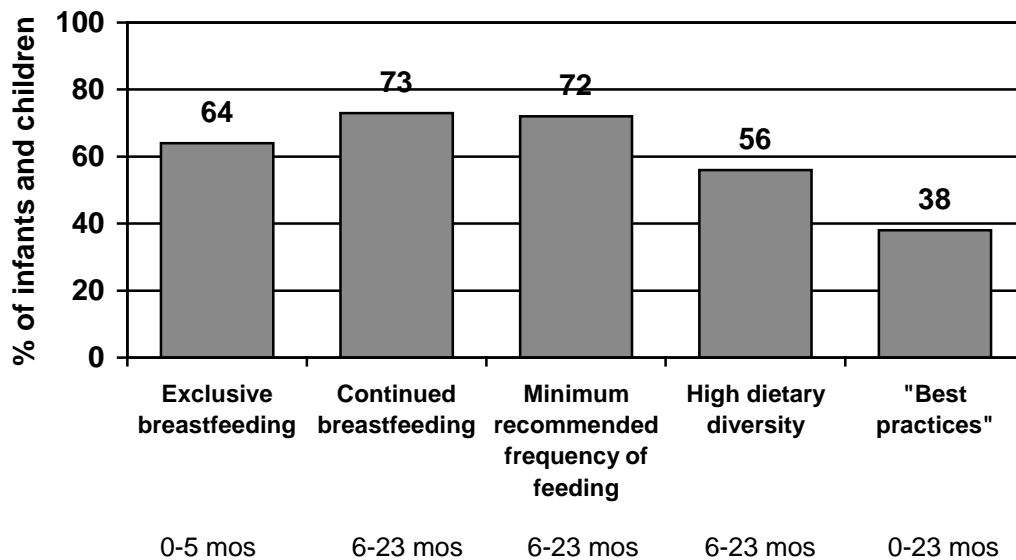


³⁵ We note again that although the first three of these four “good practices” are based on international recommendations, there is no recommendation for appropriate or optimal food group or dietary diversity. In Section 3 we detail our rationale for designating “low” “medium” and “high” dietary diversity groups, and we use *DHS+* data to illustrate the proportion of children in each diversity group receiving a variety of high-quality food groups yesterday (see Table 6). In order to construct the two summary indicators, cut-offs for food group diversity were required. We acknowledge that there is limited basis for establishing these cut-offs, and encourage further research on the relationship between various food group or dietary diversity indicators, use of cut-offs points, and nutrient adequacy.

**Figure 17. Percent of infants and children fed with selected “good practices”
(Example data Mali DHS+ 2001)**



**Figure 18. Percent of infants and children fed with selected “good practices”
(Example data Peru DHS+ 2000)**



Choosing an indicator to present summary results

Use of the good infant and young child feeding practices prevalence measure will be more appropriate when project managers wish to summarize practices across the entire age range of 0-23 months. As compared to the young child feeding practices score, either the good young child feeding practices prevalence (6-23 months) or the good infant and young child feeding practices prevalence (0-23 months) may be simpler to present, because they can be shown as percents. However, as illustrated in Table 10 on page 31, in some countries very few children will be fed using “good practices” as defined here. In particular, increasing the percent of children with “high” diversity may be very difficult in some areas. Project managers in these settings may prefer the young child feeding practices score, which is presented as an average (mean). Increases from a low baseline may be better reflected by a change in a mean score, when managers feel it is unrealistic to reach “good” practices.

In cases where summary indicators are not needed, managers can select the subset of indicators for individual practices most relevant to project activities and priorities.

Summary

Taken together, the descriptive analysis suggested here and the qualitative inquiry described in Section 5 can provide a wealth of information for program planning and for selection and refinement of program objectives. This information can also provide a sound foundation for later evaluations.