Indicators for assessing infant and young child feeding practices

PART 3
COUNTRY PROFILES

USAID
FROM THE AMERICAN PEOPLE

AED

FANTA · 2
FOOD AND NUTRITION TECHNICAL ASSISTANCE

UCDAVIS

IFPRI®
INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty
Supported by the CGIAR

unicef

World Health Organization

Indicators for assessing infant and young child feeding practices

PART 3
COUNTRY PROFILES

USAID
FROM THE AMERICAN PEOPLE

AED

FANTA · 2
FOOD AND NUTRITION TECHNICAL ASSISTANCE

UCDAVIS

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty
Supported by the CGIAR

unicef

World Health Organization

WHO Library Cataloguing-in-Publication Data

Indicators for assessing infant and young child feeding practices part 3: country profiles.

1.Infant nutrition. 2.Breast feeding. 3.Bottle feeding. 4.Feeding behavior. 5.Indicators. 6.Data collection. I.World Health Organization. Dept. of Child and Adolescent Health and Development.

ISBN 978 92 4 159975 7 (NLM classification: WS 120)

Designed by minimum graphics
Printed in Malta

Contents

Acknowledgments iv

Introduction 1

Changes in indicator definitions compared to previously used indicators 3

Methodological issues in measurement 5

Indicators, indicator definitions, rationale, and notes on methods of analysis 5

Core indicators 5

Optional indicators 10

References 13

Country profiles 15

Values by indicator and country 41

Annex: Summary of indicator definitions 47

Acknowledgments

This document is the result of a collaborative effort to improve the measurement and use of indicators to assess infant and young child feeding practices, initiated by the World Health Organization's Department of Child and Adolescent Health and Development.

The analysis presented was completed by Alfredo Fort and Monica Kothari, PATH, Demographic and Health Surveys, ICF Macro, Calverton, MD. USA. Their contribution is gratefully acknowledged.

Special thanks are also due to Megan Deitchler, Food and Nutrition Technical Assistance II Project (FANTA-2), Academy for Educational Development (AED), Washington, DC, USA who made constructive comments on all drafts.

Bernadette Daelmans (CAH) and Ann-Beth Moller (NHD) coordinated the developmental process in WHO.

Completion of the document was made possible with the support of the Department of Child and Adolescent Health and Development, World Health Organization, Geneva, Switzerland and the Office of Health, Infectious Disease, and Nutrition, Bureau for Global Health, United States Agency for International Development, Washington, DC, USA.

Introduction

Adequate nutrition is essential for children's health and development. Globally it is estimated that undernutrition is responsible, directly or indirectly, for at least 35% of deaths in children less than five years of age. Undernutrition is also a major cause of disability preventing children who survive from reaching their full development potential. An estimated 32%, or 186 million, children below five years of age in developing countries are stunted and about 10%, or 55 million, are wasted (*1*). Unless massive improvements in child nutrition are made, it will be difficult to achieve Millennium Development Goals 1: *Eradicate extreme poverty and hunger* and 4: *Reduce child mortality* by 2015.

Simple, valid, and reliable indicators are essential to track progress and guide investment to improve nutrition and health during the first two years of life. This document gives details on indicators for assessing breastfeeding and complementary feeding that were agreed by WHO, UNICEF and partners in 2007 (*2*). It presents information on infant and young child feeding practices for 46 countries for which data were available in Demographic and Health Surveys (DHS) conducted between 2002 and 2008. Several of the values have not been calculated or published before. In particular, the document includes new data on the duration of exclusive breastfeeding and the quality of complementary feeding practices. This information is crucial for programme managers to understand the constraints associated with local infant and young child feeding practices and to target appropriate programme actions.

In 1991, WHO and UNICEF published indicators for assessing breastfeeding practices that have since been widely measured and used to guide programmes (*3*). However, until recently, indicators to assess feeding practices in children 6–23 months of age have not been very informative. Limited knowledge about the type, scale and distribution of inadequate complementary feeding practices has hampered action to improve child feeding (*4*).

Child feeding practices are multidimensional and they change rapidly within short age-intervals in the first years of life. Unlike exclusive breastfeeding, which can be summarized in a single indicator, the measurement of feeding practices in children aged 6 months and older involves assessing various dimensions of feeding simultaneously. These dimensions include continued breastfeeding, appropriate timing of introduction of complementary foods, and optimum quantity and quality of the foods consumed.

In 2008, WHO published the document *Indicators for assessing infant and young child feeding practices. Part 1: Definitions* which presented fifteen indicators for assessing infant and young child feeding practices (*2*). The updated set of indicators includes eight core and seven optional indicators (for details, see Box 1 and the Annex). The core list includes new indicators for dietary diversity (a proxy for adequate micronutrient-density of foods and liquids other than breast milk), feeding frequency (a proxy for adequate energy intake from non-breast milk sources), and minimum acceptable diet among breastfed and non-breastfed children aged 6–23 months. The list also includes previously used breastfeeding indicators, updated indicators for exclusive breastfeeding in infants aged less than 6 months and appropriate breastfeeding in children aged less than 24 months. Other dimensions of optimum feeding, such as responsive feeding and adequate texture of food, are not yet included as they require more complex measurement approaches.

Box 1. Summary list of infant and young child feeding indicators

Core indicators

Early initiation of breastfeeding
Exclusive breastfeeding under 6 months
Continued breastfeeding at 1 year
Introduction of solid, semi-solid or soft foods
Minimum dietary diversity
Minimum meal frequency
Minimum acceptable diet
Consumption of iron-rich or iron-fortified foods

Optional indicators

Children ever breastfed
Continued breastfeeding at 2 years
Age-appropriate breastfeeding
Predominant breastfeeding under 6 months
Duration of breastfeeding
Bottle feeding
Milk feeding frequency of non-breastfed children

In this document, thirteen of the above indicators are presented by country. The indicator 'Exclusive breastfeeding under 6 months' is further disaggregated for infants 4 to 6 months of age. The indicators 'Minimum meal frequency' and 'Minimum acceptable diet' are only reported for breastfed children, because the necessary information for calculating these indicators for non-breastfed children was not available. The indicators 'Consumption of iron-rich or iron-fortified foods' and 'Milk feeding frequency of non-breastfed children' are not reported, because relevant data were not collected.

The data are presented in country profiles that include graphs with breastfeeding and complementary feeding indicators, as well as an area graph to illustrate the progression of infant and young child feeding practices over time. Data on mortality and nutritional status of children under five years of age are also presented for each country. In addition, the document includes summary tables by indicator to allow for a rapid overview and comparison between countries. The median duration of breastfeeding by country is reported in the summary tables only.

The proposed indicators can be derived from questions already incorporated in widely implemented population-based surveys, such as the Demographic and Health Surveys. The document *Indicators for assessing infant and young child feeding practices. Part II: Measurement* provides sample questionnaires and operational guidance to facilitate the inclusion and standard measurement of the indicators in other surveys (*5*).

The new indicator values can be considered as baseline data. It is expected that in the future, surveys will generate similar data that can then be used for tracking progress.

Changes in indicator definitions compared to previously used indicators

The indicators presented in this document intend to preserve the continuity with the indicators to assess breastfeeding practices that have been measured since 1991 (*3*). However, in 2007, modifications were made to the definitions of two indicators as follows (*2*):

- *Exclusive breastfeeding*: the new definition of exclusive breastfeeding allows a child to receive Oral Rehydration Salts (ORS), in addition to drops and syrups (vitamins, minerals, medicines) as stipulated in the earlier definition. It is also recommended to report age-disaggregated data for this indicator.

The inclusion of ORS in the new definition of exclusive breastfeeding is based on the consideration that ORS is medicine to prevent and treat dehydration.

Presentation of age-disaggregated data, in particular exclusive breastfeeding among infants 4–5 months of age, provides valuable information about the actual duration of exclusive breastfeeding. The indicator 'Exclusive breastfeeding (infants 4–5 months)' is an approximation of the proportion of infants who are exclusively breastfed for the full 6 months. This indicator responds to the global recommendation on the optimal duration of exclusive breastfeeding that was changed in 2001 (*6*).

- *Introduction of solid, semi-solid or soft foods*: this indicator replaces the 'Timely complementary feeding rate'. Continued breastfeeding is no longer a criterion included in the definition of the new indicator and the age range of children for which the indicator is assessed has been reduced to 6–8 months (previously 6–9 months).

The previously used indicator 'Timely complementary feeding rate' was a combination of two key practices, i.e. continued breastfeeding and consumption of solid, semi-solid or soft foods. It was therefore difficult to interpret. In the current set of indicators, 'Introduction of solid, semi-solid or soft foods' and 'Continued breastfeeding at 1 year' and 'Continued breastfeeding at 2 years' are reported as separate indicators. The combined practice of continued breastfeeding and consumption of solid, semi-solid or soft foods is reflected in the area graph that can be constructed for each setting based on the data gathered to calculate the indicators.

Table 1 summarizes the criteria that define selected infant and young child feeding practices captured by the indicators.

TABLE 1. CRITERIA THAT DEFINE SELECTED INFANT FEEDING PRACTICES

Feeding practice	Requires that the infant receive	Allows the infant to receive	Does not allow the infant to receive
Exclusive breastfeeding	Breast milk (including milk expressed or from a wet nurse)	ORS, drops, syrups (vitamins, minerals, medicines)	Anything else
Predominant breastfeeding	Breast milk (including milk expressed or from a wet nurse) as the predominant source of nourishment	Certain liquids (water and water-based drinks, fruit juice), ritual fluids and ORS, drops or syrups (vitamins, minerals, medicines)	Anything else (in particular, non-human milk, food-based fluids)
Complementary feeding	Breast milk (including milk expressed or from a wetnurse) and solid or semi-solid foods	Anything else: any food or liquid including non-human milk and formula	NA
Breastfeeding	Breast milk (including milk expressed or from a wet nurse)	Anything else: any food or liquid including non-human milk and formula	NA
Bottle feeding	Any liquid (including breast milk) or semi-solid food from a bottle with nipple/teat	Anything else: any food or liquid including non-human milk and formula	NA

Methodological issues in measurement

In all the DHS surveys that provided data for this publication, questions on breastfeeding and consumption of solid and semi-solid foods were the same. However, the questions asked on the dietary diversity of food were modified. In DHS surveys conducted between 2006 and 2008, questions about dietary diversity were asked using an expanded list of food items compared to DHS surveys conducted between 2002 and 2005. Also, the question on consumption of eggs was asked separately as an item in DHS surveys between years 2006 and 2008 (except Bangladesh 2007 and Indonesia 2007), while between years 2002 and 2005 (except Cambodia 2005), eggs were included in the meat and poultry group. The group of children who were included in the sample used for assessing the various indicators (i.e., the sample universe), and specific notes related to the measurement of individual indicators are summarized in the section below.

In some area graphs of feeding practices presented in this document, the practice of exclusive breastfeeding appears to extend far beyond 6 months. This phenomenon is due to the way in which the indicator is calculated. The indicator 'Exclusive breastfeeding' is calculated as a residue of children whose caregiver responded "No" to all questions related to dietary intake other than breast milk, i.e. they did not consume any liquids or solid foods during the day or night preceding the interview. If for any reason an interviewer or a caregiver did not report a "Yes" for at least one of the food items (e.g., the interviewer forgot to ask about a food category, or the caregiver forgot to report on a food actually consumed), the child is counted in the exclusive breastfeeding category. Therefore, it is possible that some children who are much beyond 6 months of age appear to be exclusively breastfed when, in fact, they are not. This is a methodological artefact that is difficult to correct.

Indicators, indicator definitions, rationale, and notes on methods of analysis

CORE INDICATORS

1. **Early initiation of breastfeeding:** Proportion of children born in the last 24 months who were put to the breast within one hour of birth.

$$\frac{\text{Children born in the last 24 months who were put to the breast within one hour of birth}}{\text{Children born in the last 24 months}}$$

Rationale:

Early initiation of breastfeeding, within one hour of birth, protects the newborn from acquiring infection and reduces newborn mortality (*7, 8*). It facilitates emotional bonding of the mother and the baby (*9*) and has a positive impact on duration of exclusive breastfeeding (*10*). When a mother initiates breastfeeding within one hour after birth, production of breast milk is stimulated. The yellow or golden first milk produced in the first days, also called colostrum, is an important source of nutrition and immune protection for the newborn.

Notes on measurement:

- This indicator is based on historic recall. The denominator and numerator include living children and deceased children who were born within the past 24 months.

2. **Exclusive breastfeeding under 6 months:** Proportion of infants 0–5 months of age who are fed exclusively with breast milk.[1]

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

Rationale:

Exclusive breastfeeding for 6 months confers many benefits to the infant and the mother. Chief among these is the protective effect against gastrointestinal infections, which is observed not only in developing but also in industrialized countries (*11*). The risk of mortality due to diarrhoea and other infections can increase many-fold in infants who are either partially breastfed or not breastfed at all (*12*). In the context of HIV, introducing other milks, foods or liquids significantly increases the risk of HIV transmission through breast milk, and reduces infant's chances of HIV-free survival (*13*). For the mother, exclusive breastfeeding can delay return of fertility (*14*).

Notes on measurement:

- The sample universe for this indicator is last born children 0–5 months of age living with their mother.
- Any child who was given ORS and vitamin and/or mineral supplements was not excluded from the exclusive breastfeeding category.

2a. **Exclusive breastfeeding (infants 4–5 months):** Proportion of infants 4–5 months of age who are fed exclusively with breast milk.

$$\frac{\text{Infants 4–5 months of age who received only breast milk during the previous day}}{\text{Infants 4–5 months of age}}$$

Rationale:

As infants grow during the first six months, the likelihood that they are exclusively breastfed becomes less in many settings. Assessing exclusive breastfeeding in infants aged 4–5 months gives additional information on the duration of exclusive breastfeeding, and is an approximation of the proportion of infants who are exclusively breastfed for the full 6 months.

Notes on measurement:

- The sample universe for this indicator is last born children 4–5 months of age living with their mother.
- Any child who was given ORS and vitamin and/or mineral supplements was not excluded from the exclusive breastfeeding category.

3. **Continued breastfeeding at 1 year:** Proportion of children 12–15 months of age who are fed breast milk.

$$\frac{\text{Children 12–15 months of age who received breast milk during the previous day}}{\text{Children 12–15 months of age}}$$

[1] Age groups are described in intervals of months completed. For example, infants 0–5 months of age have completed 5 months but are less than 6 months (or 183 days) old.

Rationale:

Breast milk is an important source of energy and nutrients in children 6–23 months of age. Breast milk can provide one half or more of a child's energy needs between 6 and 12 months of age, and one third of energy needs between 12 and 24 months (*15*). Breast milk is also a critical source of energy and nutrients during illness and reduces mortality among children who are malnourished (*16, 17, 18*). Breast milk reduces the risk of a number of acute and chronic diseases in early childhood and has long-term benefits for cardio-vascular health (*19*). In the context of HIV, early cessation of breastfeeding after 6 months is associated with increased serious morbidity, growth faltering and increased mortality (*13*).

Notes on measurement:

- The sample universe for this indicator is last born children 12–15 months of age living with their mothers.

4. **Introduction of solid, semi-solid or soft foods:** Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods.

$$\frac{\text{Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day}}{\text{Infants 6–8 months of age}}$$

Rationale:

Around the age of 6 months, an infant's need for energy and nutrients starts to exceed what is provided by breast milk and complementary foods are necessary to meet energy and nutrient requirements. At about 6 months of age, an infant is also developmentally ready for other foods. If complementary foods are not introduced when a child has completed 6 months of age, or if they are given inappropriately, an infant's growth may falter (*20*).

Notes on measurement:

- The sample universe for this indicator is last born children 6–8 months of age living with their mothers.
- Information about the consumption of solid, semi-solid and soft foods was not collected in a few of the DHS surveys and this has been indicated in the graphs and tables accordingly.

5. **Minimum dietary diversity:** Proportion of children 6–23 months of age who receive foods from 4 or more food groups.

$$\frac{\text{Children 6–23 months of age who received foods from} \geq 4 \text{ food groups during the previous day}}{\text{Children 6–23 months of age}}$$

Rationale:

Dietary diversity is a proxy for adequate micronutrient-density of foods. Dietary data from children 6–23 months of age in 10 developing country sites have shown that consumption of foods from at least 4 food groups on the previous day would mean that in most populations, the child had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (*21, 22*).

Notes on measurement:

- The sample universe for this indicator is last born children 6–23 months of age living with their mothers.
- The 7 foods groups used for calculation of this indicator are:
  - grains, roots and tubers
  - legumes and nuts
  - dairy products (milk, yogurt, cheese)
  - flesh foods (meat, fish, poultry and liver/organ meats)
  - eggs
  - vitamin-A rich fruits and vegetables
  - other fruits and vegetables.

The construction of the 7 food group score was done as follows: for each of the 7 food groups, a point was added if any food in the group was consumed. Children who consumed items like "Papilla" (distributed in Peru) or "Bienestarina" (distributed in Colombia) received a point for two food groups (dairy products and grains, roots and tubers) because "Papilla" and "Bienestarina" include both milk powder and grains. Eggs were included in the poultry food group in Bangladesh 2007 DHS, Indonesia 2007 DHS, and the DHS surveys conducted between 2002 and 2005. Therefore, children who were reported to have eaten poultry also received a point for eggs in these surveys.

6. **Minimum meal frequency:** Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

This indicator is calculated from the following two fractions:

$$\frac{\text{Breastfed children 6–23 months of age who received solid, semi-solid or soft foods the minimum number of times or more during the previous day}}{\text{Breastfed children 6–23 months of age}}$$

and

$$\frac{\text{Non-breastfed children 6–23 months of age who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the previous day}}{\text{Non-breastfed children 6–23 months of age}}$$

Rationale:

The number of meals that an infant or young child needs in a day depends on how much energy the child needs (and, if the child is breastfed, the amount of energy needs not met by breast milk), the amount that a child can eat at each meal, and the energy density of the food offered. When energy density of the meals is between 0.8–1 kcal/g, breastfed infants 6–8 months old need 2–3 meals per day, while breastfed children 9–23 months needs 3–4 meals per day, with 1–2 additional snacks as desired (*15*). Children who are not breastfed should be given 1–2 cups of milk[1] and 1–2 extra meals per day (*23*).

[1] Acceptable milk sources include full cream animal milk, Ultra High Temperature milk, reconstituted evaporated (but not condensed) milk, fermented milk or yogurt.

Notes on measurement:

- The sample universe for this indicator is last born children 6–23 months of age living with their mothers.
- For breastfed children, minimum is defined as 2 times for infants 6–8 months and 3 times for children 9–23 months.
- For non-breastfed children, minimum is defined as 4 times for children 6–23 months.
- Values for this indicator could not be calculated for non-breastfed children because the DHS questionnaires did not include a question about the frequency of milk feeds.

7. **Minimum acceptable diet:** Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk). The indicator is calculated from the following two fractions:

$$\frac{\text{Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day}}{\text{Breastfed children 6–23 months of age}}$$

and

$$\frac{\text{Non-breastfed children 6–23 months of age who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day}}{\text{Non-breastfed children 6–23 months of age}}$$

Rationale:

Because appropriate feeding of children 6–23 months is multidimensional, it is important to have a composite indicator that tracks the extent to which multiple dimensions of adequate child feeding are being met. The minimum acceptable diet indicator combines standards of dietary diversity and feeding frequency by breastfeeding status. The numerator includes only those children who have received both the minimum dietary diversity and the minimum meal frequency for the child's breastfeeding status. The indicator thus provides a useful way to track progress at simultaneously improving the key quality and quantity dimensions of children's diets.

Notes on measurement:

- The sample universe for this indicator is last born children 6–23 months of age living with their mothers.
- Values for this indicator could not be calculated for non-breastfed children because the DHS questionnaires did not include a question about the frequency of milk feeds.

OPTIONAL INDICATORS

8. **Children ever breastfed:** Proportion of children born in the last 24 months who were ever breastfed.

$$\frac{\text{Children born in the last 24 months who were ever breastfed}}{\text{Children born in the last 24 months}}$$

Rationale:

The proportion of children ever breastfed is a reflection of the 'culture' of breastfeeding and of care practices around childbirth.

Notes on measurement:

- This indicator is based on historic recall. The denominator and numerator include living and deceased children who were born within the past 24 months.

9. **Continued breastfeeding at 2 years:** Proportion of children 20–23 months of age who are fed breast milk.

$$\frac{\text{Children 20–23 months of age who received breast milk during the previous day}}{\text{Children 20–23 months of age}}$$

Rationale:

WHO and UNICEF recommend breastfeeding up to 2 years or beyond (*24*). Assessing breastfeeding among children 20–23 months provides a more accurate measure of those receiving the full benefit of breastfeeding for two years than measures taken for younger age intervals.

Notes on measurement:

- The sample universe for this indicator includes last born children 20–23 months of age living with their mothers.

10. **Age-appropriate breastfeeding:** Proportion of children 0–23 months of age who are appropriately breastfed.

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

and

$$\frac{\text{Children 6–23 months of age who received breast milk, as well as solid, semi-solid or soft foods, during the previous day}}{\text{Children 6–23 months of age}}$$

Rationale:

Age appropriate breastfeeding is a summary measure of the proportion of children less than 2 years of age who are appropriately breastfed and who receive complementary foods when needed.

Notes on measurement:

- The sample universe for this indicator is last born children 0–23 months of age living with their mothers.
- This indicator captures information about exclusive breastfeeding for children 0–5 months; and about the dual practice of breastfeeding and complementary feeding for children 6–23 months.

11. **Predominant breastfeeding under 6 months:** Proportion of infants 0–5 months of age who are predominantly breastfed.

$$\frac{\text{Infants 0–5 months of age who received breast milk as the predominant source of nourishment during the previous day}}{\text{Infants 0–5 months of age}}$$

Rationale:

Two studies comparing mortality during infancy showed that predominant breastfeeding is associated with substantially lower risk of deaths compared with partial or no breastfeeding (*25*, *26*). Although these studies did not find any significant difference on mortality between exclusive and predominant breastfeeding, there are other reasons to recommend exclusive breastfeeding as the preferred option. Predominant breastfeeding has been associated with an increased risk of diarrhoea (*27*, *28*). Avoidance of any liquids other than breast milk is key to ensure appropriate feeding of infants less than 6 months of age, unless there is a medical reason to do otherwise (*29*).

Notes on measurement:

- The sample universe for this indicator is last born children 0–5 months of age living with the mother.
- Predominant breastfeeding 'allows' ORS, vitamin and/or mineral supplements, ritual fluids, water and water-based drinks, and fruit juice. Other liquids, including non-human milks and food-based fluids, are not allowed, and no semi-solid or solid foods are allowed.

12. **Bottle feeding:** Proportion of children 0–23 months of age who are fed with a bottle.

$$\frac{\text{Children 0–23 months of age who were fed with a bottle during the previous day}}{\text{Children 0–23 months of age}}$$

Rationale:

When bottle feeding is associated with unhygienic conditions and poor preparation of infant formula, it puts the infant at a great risk of illness, resulting in increased risk of mortality. Feeding an infant from a bottle with an artificial teat may also make it more difficult for the baby to learn to attach well at the breast and has been associated with earlier cessation of breastfeeding (*30*). If an infant can not feed directly from the breast, then the safest alternative is to feed expressed breast milk from a cup (*31*).

Notes on measurement:

- The sample universe of this indicator is last born children 0–23 months of age living with their mothers.

13. **Duration of breastfeeding:** Median duration of breastfeeding among children less than 36 months of age.

The age in months when 50% of children 0–35 months did not receive breast milk during the previous day.

Rationale:

This indicator is a proxy measure of the average number of months that children are breastfed and it adds to the understanding of when mothers may decide to discontinue breastfeeding.

Notes on measurement:

- The sample universe for this indicator includes all living and deceased children 0–35 months of age.

ADDITIONAL INDICATORS

Mortality indicators

- **Infant mortality rate:** probability of dying between birth and age 1 per 1000 live births.
- **Under-5 mortality rate:** probability of dying by age 5 per 1000 live births.

Nutritional status indicators

Children under five years of age who are suffering from:

- **underweight:** proportion of children less than 5 years of age with weight for age < -2 z-scores of the median WHO child growth standards.
- **stunting:** proportion of children less than 5 years of age with length or height for age < -2 z-scores of the median WHO child growth standards.
- **overweight:** proportion of children less than 5 years of age with weight for length or height > +2 z-scores of the median WHO child growth standards.

Values of all additional indicators were derived from the World Health Statistics (WHS), 2010 (*1*).

References

1. *World Health Statistics 2010*. Geneva, World Health Organization, 2010.
2. WHO/UNICEF/IFPRI/UCDavis/FANTA/AED/USAID. *Indicators for assessing infant and young child feeding practices. Part 1: Definitions*. Geneva, World Health Organization, 2008.
3. *Indicators for assessing breastfeeding practices*. Geneva, World Health Organization, 1991.
4. Arimond M, Daelmans B, Dewey KG. Indicators for feeding practices in children. *Lancet*, 2008, 371: 541–542.
5. WHO/UNICEF/IFPRI/UCDavis/FANTA/AED/USAID. *Indicators for assessing infant and young child feeding practices. Part 2: Measurement*. Geneva, World Health Organization, 2010.
6. Resolution WHA 55/2002/REC1, Annex 2. Geneva, World Health Organization, 2002.
7. Edmond KM et al. Delayed breastfeeding initiation increases the risk of neonatal mortality. *Pediatrics*, 2006, 117(3):e380–386.
8. Edmond KM et al. Effect of early infant feeding practices on infection-specific neonatal mortality: an investigation of causal links with observational data from Ghana. *American Journal of Clinical Nutrition*, 2007, 86(4):1126–1131.
9. Klaus M. Mother and infant: early emotional ties. *Paediatrics*, 1998, 102:1244–1246.
10. Perez-Escamilla R et al. Infant feeding policies in maternity wards and their effect on breastfeeding success: an analytical overview. *American Journal of Public Health*, 1994, 84(1):89–97.
11. Kramer MS, Kakuma R. *The optimal duration of exclusive breastfeeding: a systematic review*. Geneva, World Health Organization, 2001.
12. WHO Collaborative Study Team on the Role of Breastfeeding on the Prevention of Infant Mortality. Effect of breastfeeding on infant and childhood mortality due to infectious diseases in less developed countries: a pooled analysis. *Lancet*, 2000, 355:451–455.
13. *Summary of evidence in support of the revised WHO principles and recommendations on HIV and infant feeding*. Geneva, World Health Organization, 2010.
14. The World Health Organization Multinational Study of Breastfeeding and Lactational Amenorrhea. III. Pregnancy during breast-feeding. World Health Organization Task Force on Methods for the Natural Regulation of Fertility. *Fertility and Sterility*, 1999, 72:431–440.
15. WHO/PAHO. *Guiding principles for complementary feeding of the breastfed child*. Washington, DC, Pan American Health Organization, 2003.
16. Brown KH et al. Effects of common illnesses on infants' energy intake from breast milk and other foods during longitudinal community-based studies in Huascar (Lima) Peru. *American Journal of Clinical Nutrition*, 1990, 52:1005–1013.
17. Briend A, Bari A. Breastfeeding improves survival, but not nutritional status, of 12–35 months old children in rural Bangladesh. *European Journal of Clinical Nutrition*, 1989, 43(9):603–608.
18. Mobak K et al. Prolonged breastfeeding, diarrhoeal disease, and survival of children in Guinea-Bissau. *British Medical Journal*, 1994, 308:1403–1406.

19. *Evidence of long-term effects of breastfeeding: systematic reviews and meta-analyses*. Geneva, World Health Organization, 2007.

20. *The optimal duration of exclusive breastfeeding. Report of an Expert Consultation*. Geneva, World Health Organization, 2001.

21. Working Group on Infant and Young Child Feeding Indicators. *Developing and validating simple indicators of dietary quality and energy intake of infants and young children in developing countries: Summary findings from analysis of 10 data sets*. Report submitted to: the Food and Nutrition Technical Assistance (FANTA) Project/Academy for Educational development (AED). Washington, DC, USA, August 2006.

22. Working Group on Infant and Young Child Feeding Indicators. *Developing and validating simple indicators of dietary quality and energy intake of infants and young children in developing countries: Additional analysis of 10 data sets*. Report submitted to: the Food and Nutrition Technical Assistance (FANTA) Project/Academy for Educational development (AED). Washington, DC, USA, July 2007.

23. *Guiding principles for feeding non-breastfed children 6–24 months of age*. Geneva, World Health Organization, 2005.

24. WHO/UNICEF. *Global Strategy on Infant and Young Child Feeding*. Geneva, World Health Organization, 2003.

25. Bahl R et al. Infant feeding patterns and risks of death and hospitalization in the first half of infancy: multicentre cohort study. *Bulletin of the World Health Organization*, 2005, June; 83(6):418–426.

26. Arifeen S et al. Exclusive breastfeeding reduces acute respiratory infection and diarrhea deaths among infants in Dhaka slums. *Pediatrics*, 2001,108(4):e67–74.

27. Koyanagi A et al. Effect of early exclusive breastfeeding on morbidity among infants born to HIV-negative mothers in Zimbabwe. *American Journal of Clinical Nutrition*, 2009;89(5): 1375–82.

28. Brown K et al. Infant feeding practices and their relationship with diarrhoeal diseases in Huascar (Lima) Peru. *Pediatrics*, 1989, 83:31–40.

29. WHO/UNICEF. *Acceptable medical reasons for use of breast-milk substitutes*. Geneva, World Health Organization, 2008.

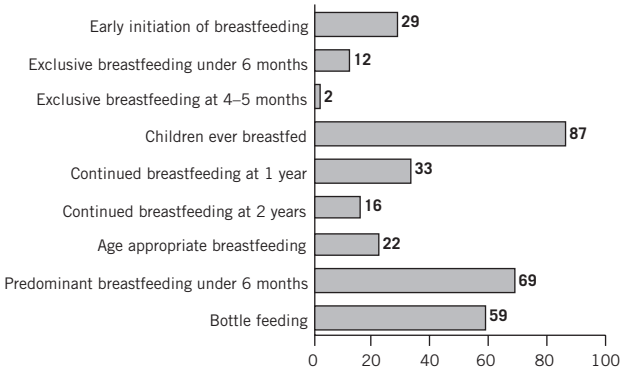
30. Collins C et al. Effects of bottles, cups and dummies on breastfeeding in preterm infants: a randomized controlled trial. *British Medical Journal*, 2004, 329:193–198.

31. *Optimal feeding of low-birth-weight infants: a review*. Geneva, World Health Organization, 2006.

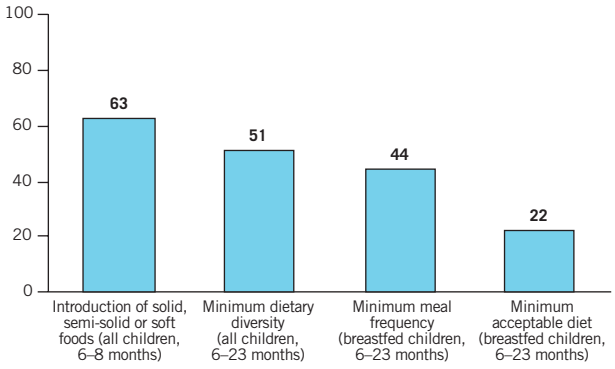
Country profiles

AZERBAIJAN

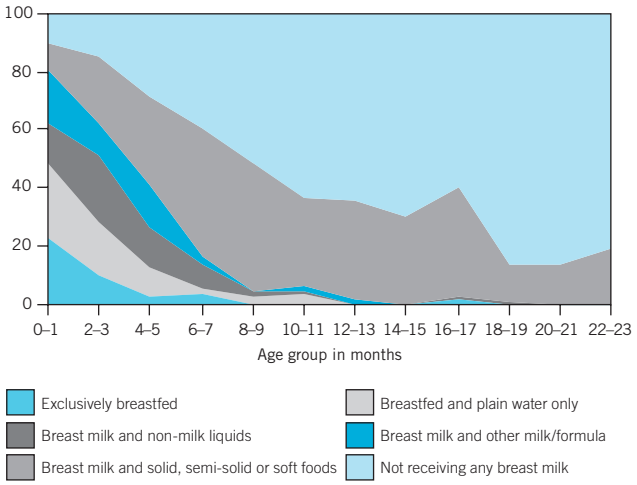
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



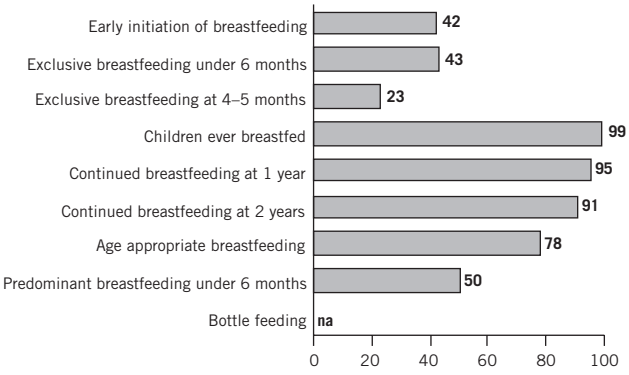
Additional indicators

Infant mortality (rate per thousand live births)	32
Under-5 mortality (rate per thousand live births)	36
% of children under five years of age who are suffering from:	
Underweight	8
Stunting	27
Overweight	14

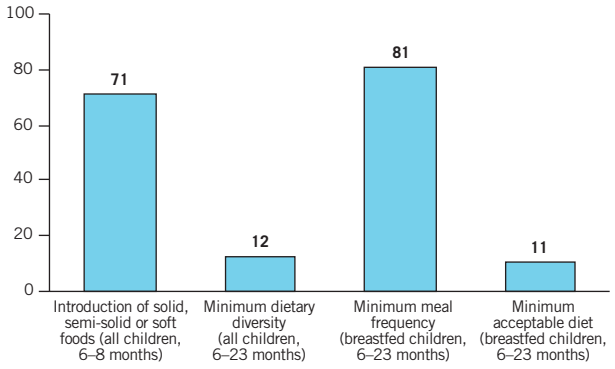
Source: DHS (2006), WHS (2010).

BANGLADESH

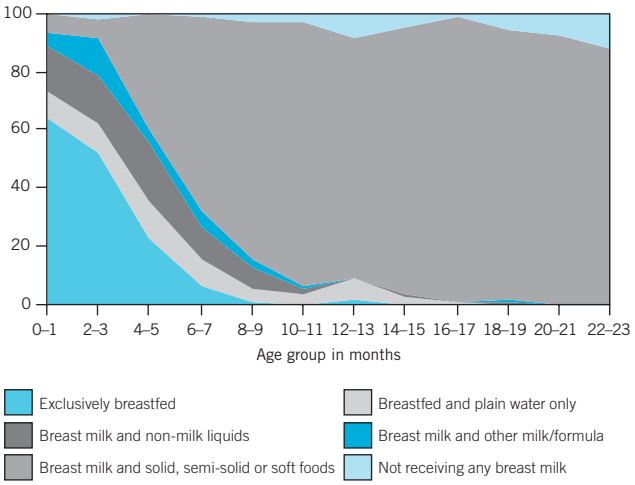
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



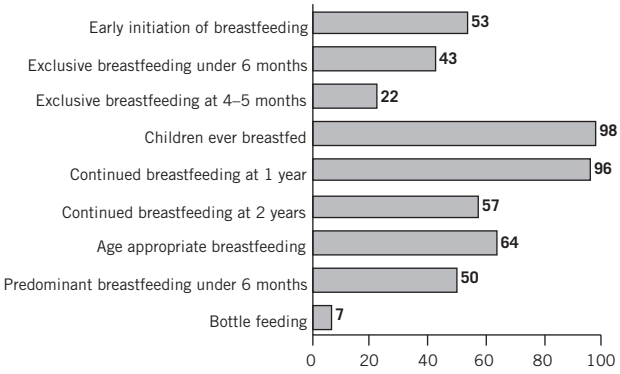
Additional indicators

Infant mortality (rate per thousand live births)	43
Under-5 mortality (rate per thousand live births)	54
% of children under five years of age who are suffering from:	
Underweight	41
Stunting	43
Overweight	1

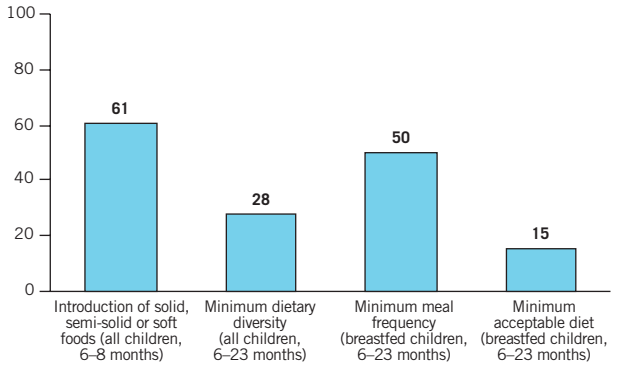
Source: DHS (2007), WHS (2010).

BENIN

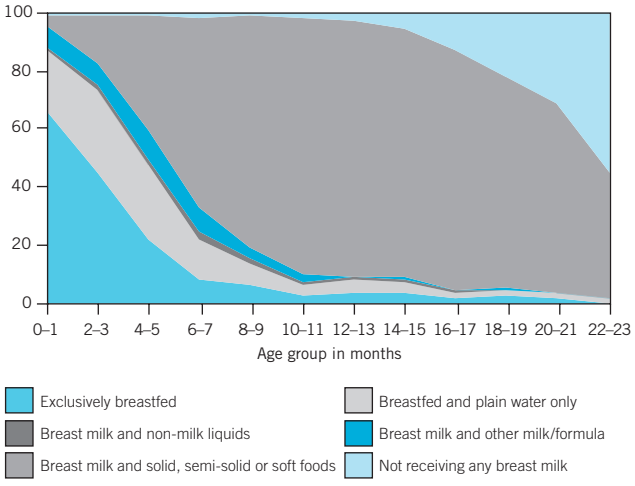
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



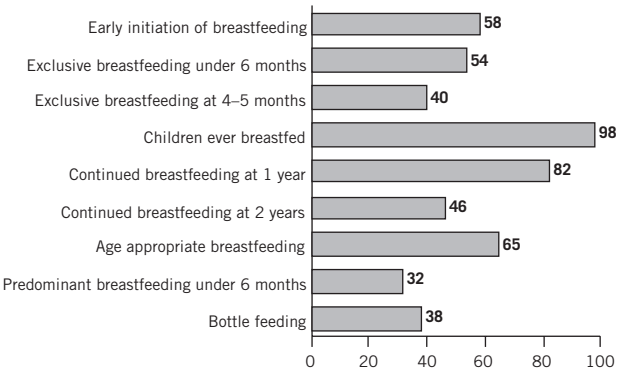
Additional indicators

Infant mortality (rate per thousand live births)	76
Under-5 mortality (rate per thousand live births)	121
% of children under five years of age who are suffering from:	
Underweight	20
Stunting	45
Overweight	11

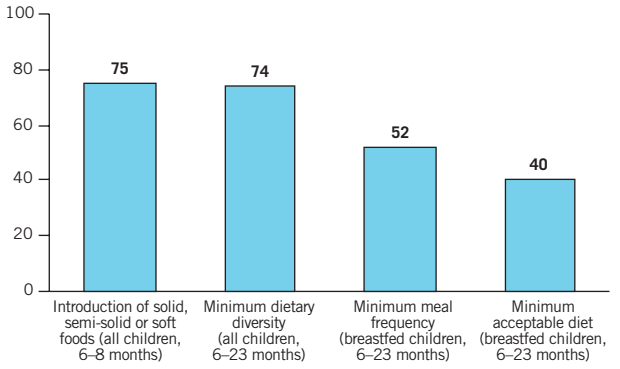
Source: DHS (2006), WHS (2010).

BOLIVIA

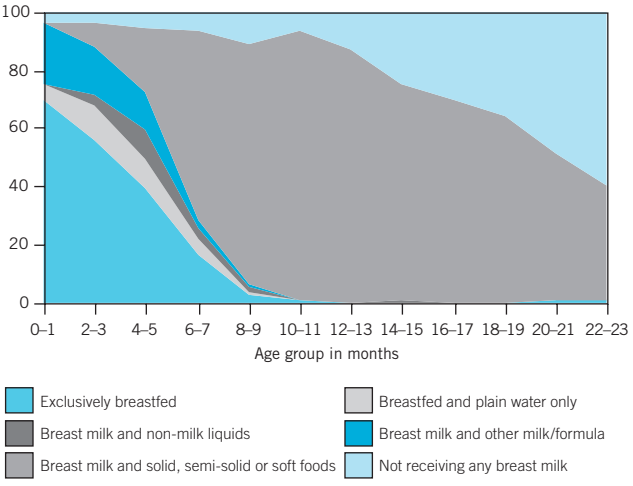
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



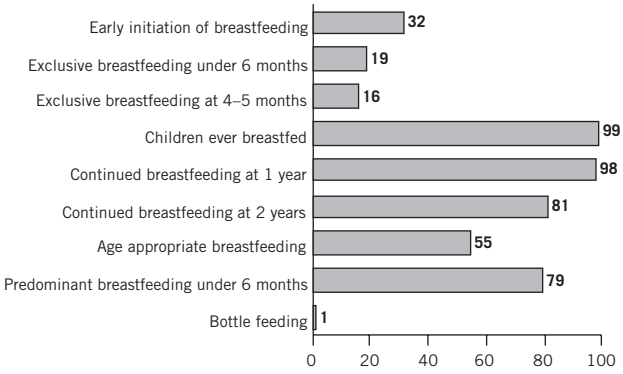
Additional indicators

Infant mortality (rate per thousand live births)	46
Under-5 mortality (rate per thousand live births)	54
% of children under five years of age who are suffering from:	
Underweight	4
Stunting	27
Overweight	9

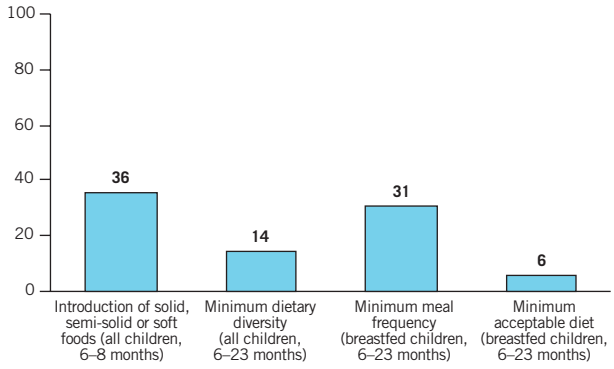
Source: DHS (2003), WHS (2010).

BURKINA FASO

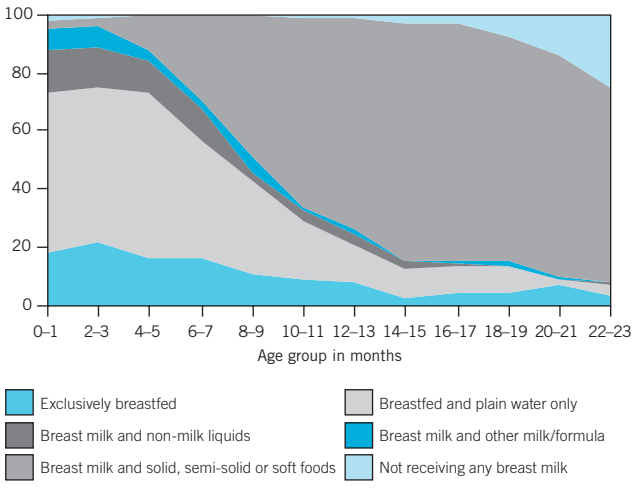
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



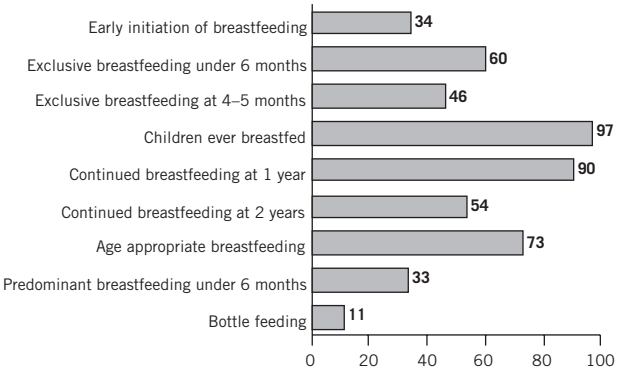
Additional indicators

Infant mortality (rate per thousand live births)	92
Under-5 mortality (rate per thousand live births)	169
% of children under five years of age who are suffering from:	
Underweight	37
Stunting	45
Overweight	8

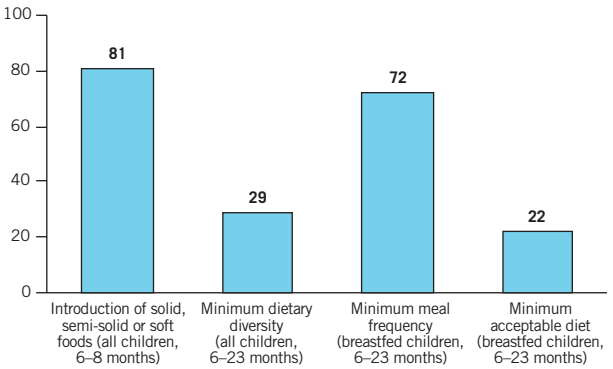
Source: DHS (2003), WHS (2010).

CAMBODIA

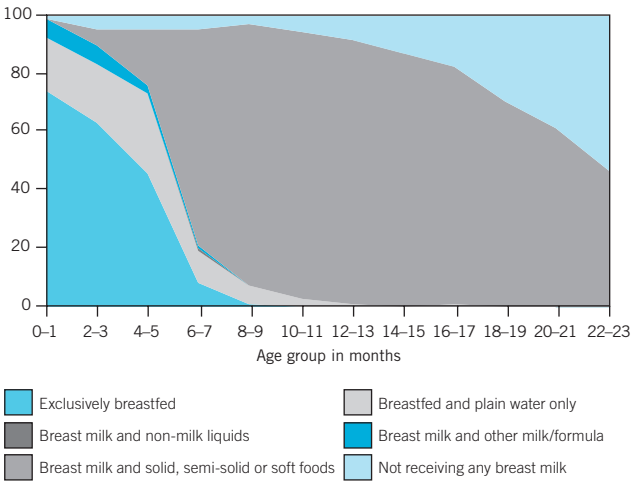
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



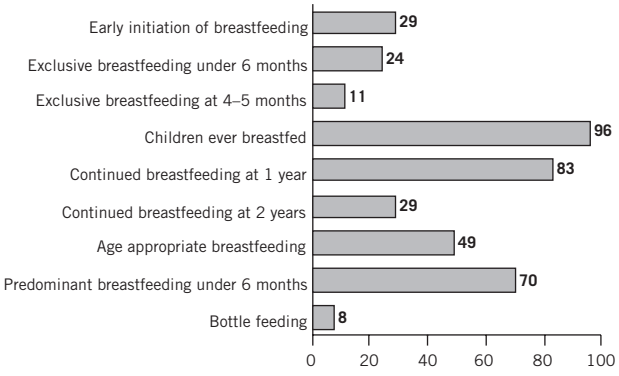
Additional indicators

Infant mortality (rate per thousand live births)	69
Under-5 mortality (rate per thousand live births)	89
% of children under five years of age who are suffering from:	
Underweight	29
Stunting	40
Overweight	2

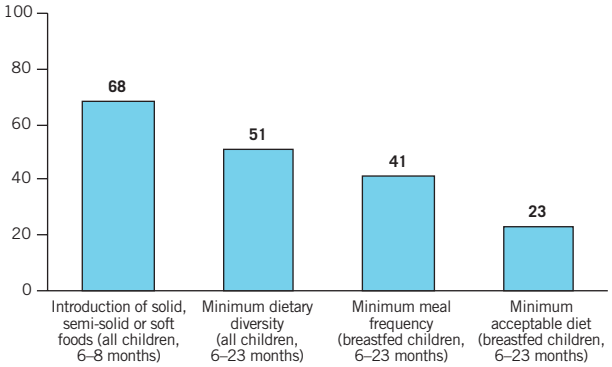
Source: DHS (2005), WHS (2010).

CAMEROON

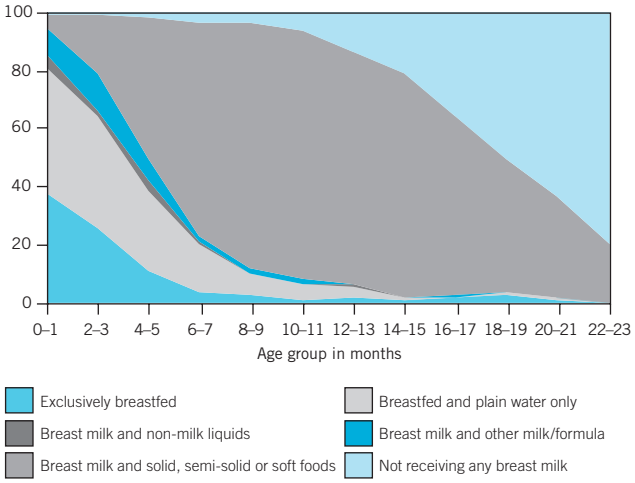
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



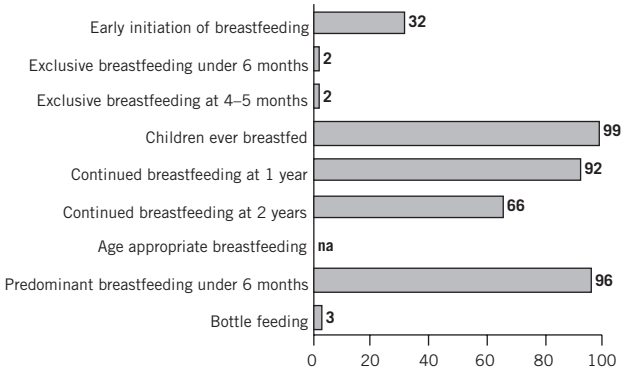
Additional indicators

Infant mortality (rate per thousand live births)	82
Under-5 mortality (rate per thousand live births)	131
% of children under five years of age who are suffering from:	
Underweight	17
Stunting	36
Overweight	10

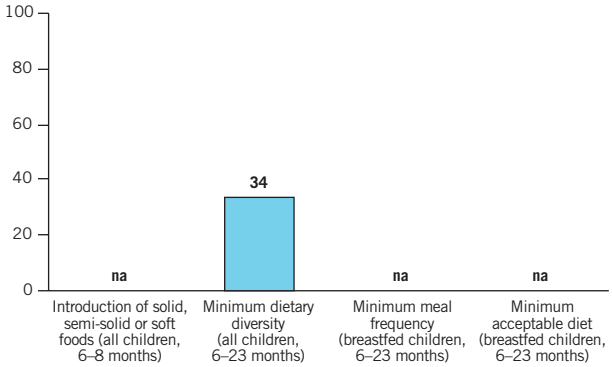
Source: DHS (2004), WHS (2010).

CHAD

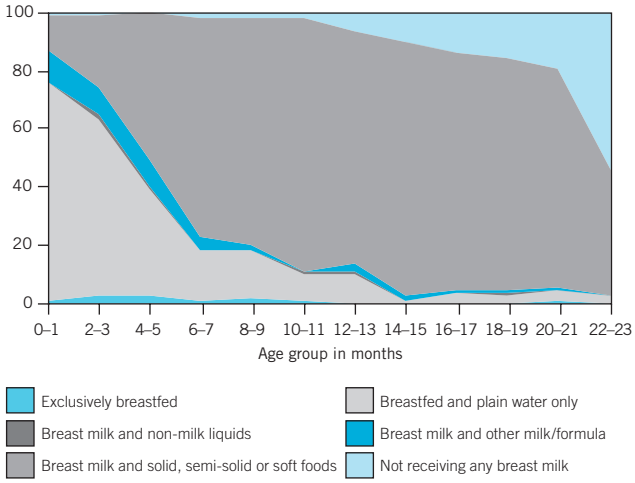
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



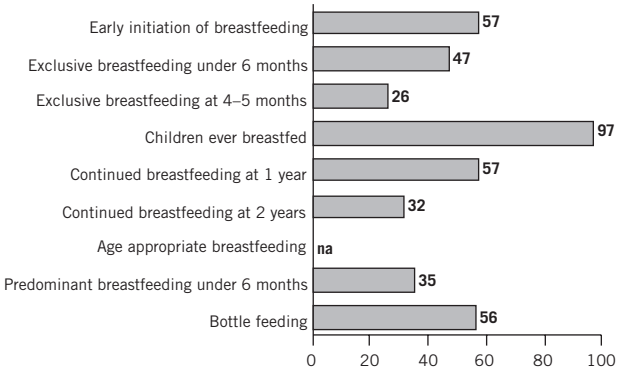
Additional indicators

Infant mortality (rate per thousand live births)	124
Under-5 mortality (rate per thousand live births)	209
% of children under five years of age who are suffering from:	
Underweight	34
Stunting	45
Overweight	4

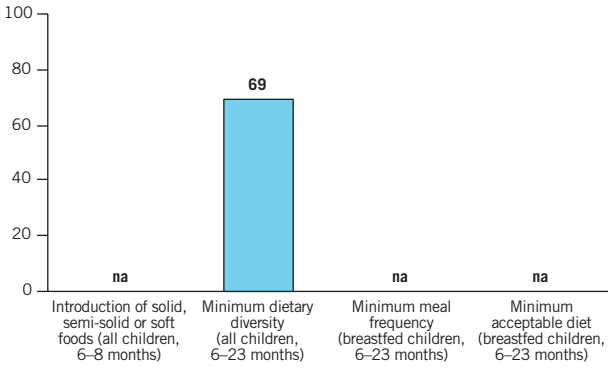
Source: DHS (2004), WHS (2010).

COLOMBIA

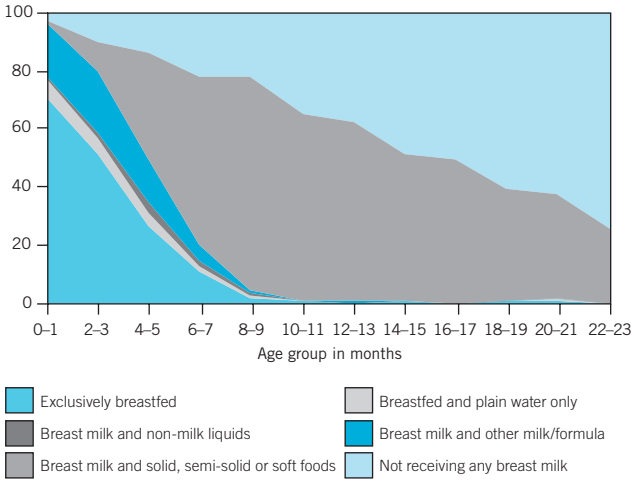
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



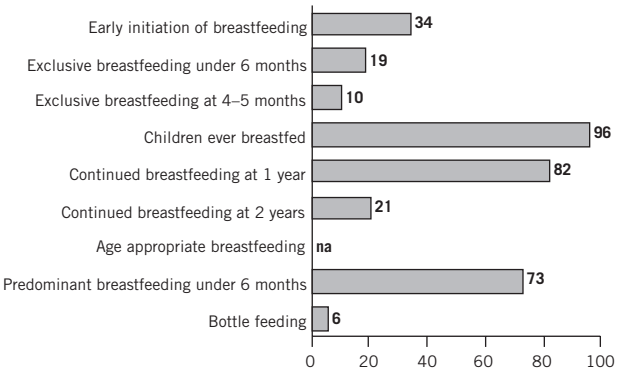
Additional indicators

Infant mortality (rate per thousand live births)	16
Under-5 mortality (rate per thousand live births)	20
% of children under five years of age who are suffering from:	
Underweight	5
Stunting	16
Overweight	4

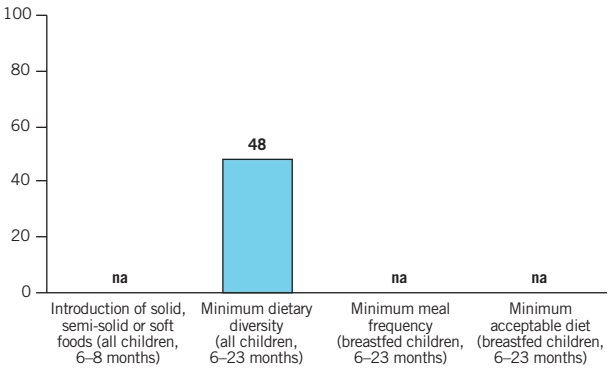
Source: DHS (2005), WHS (2010).

CONGO (BRAZZAVILLE)

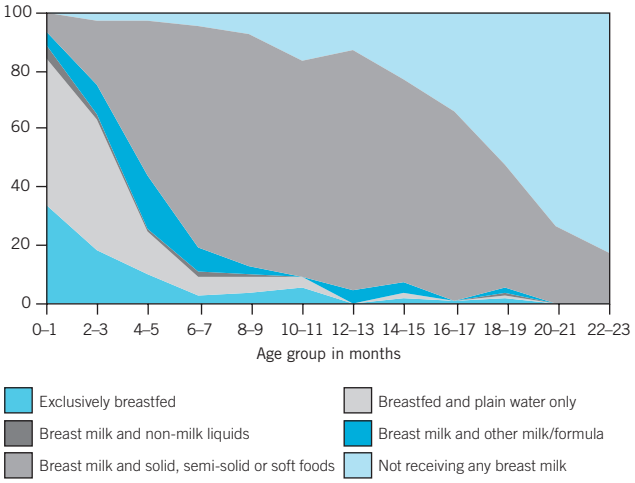
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



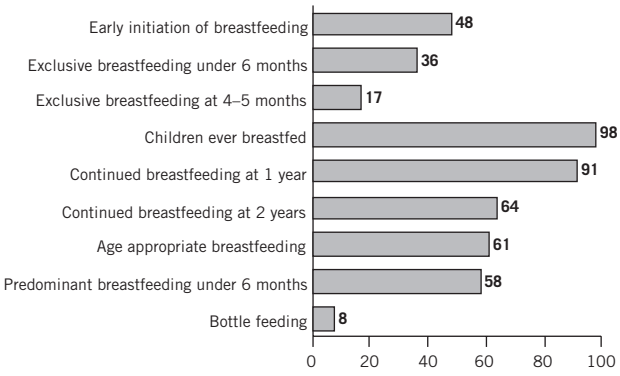
Additional indicators

Infant mortality (rate per thousand live births)	80
Under-5 mortality (rate per thousand live births)	127
% of children under five years of age who are suffering from:	
Underweight	12
Stunting	31
Overweight	9

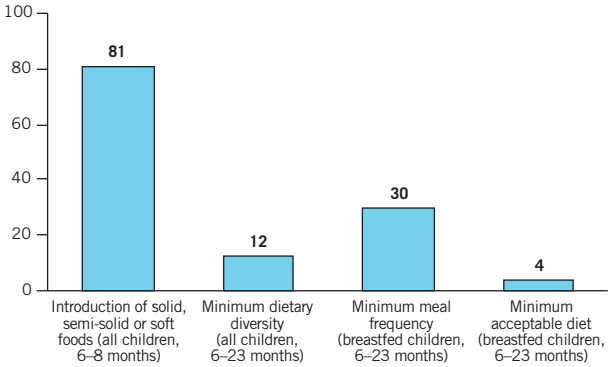
Source: DHS (2005), WHS (2010).

DEMOCRATIC REPUBLIC OF THE CONGO

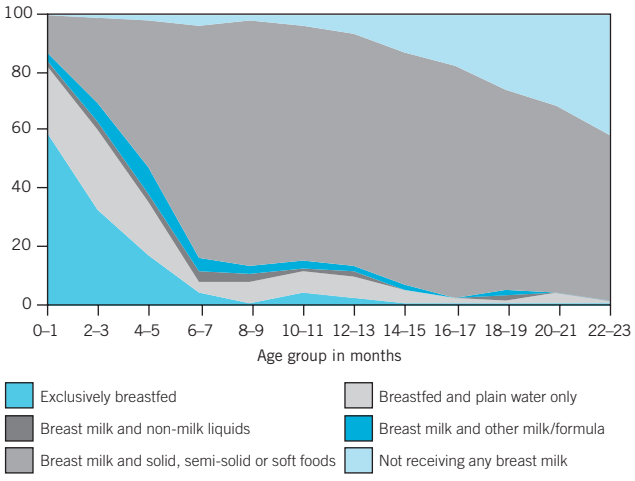
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



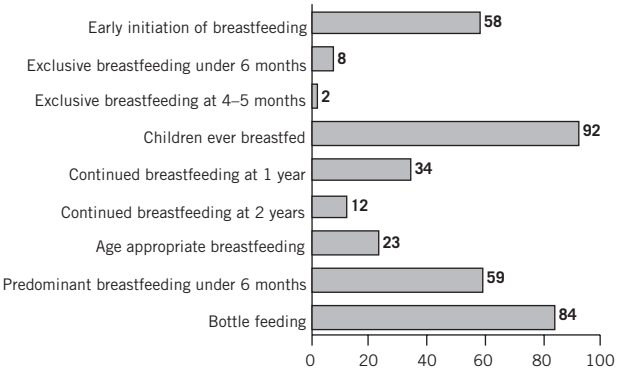
Additional indicators

Infant mortality (rate per thousand live births)	126
Under-5 mortality (rate per thousand live births)	199
% of children under five years of age who are suffering from:	
Underweight	28
Stunting	46
Overweight	7

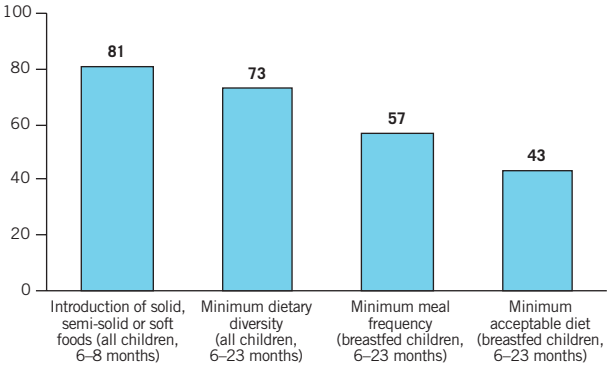
Source: DHS (2007), WHS (2010).

DOMINICAN REPUBLIC

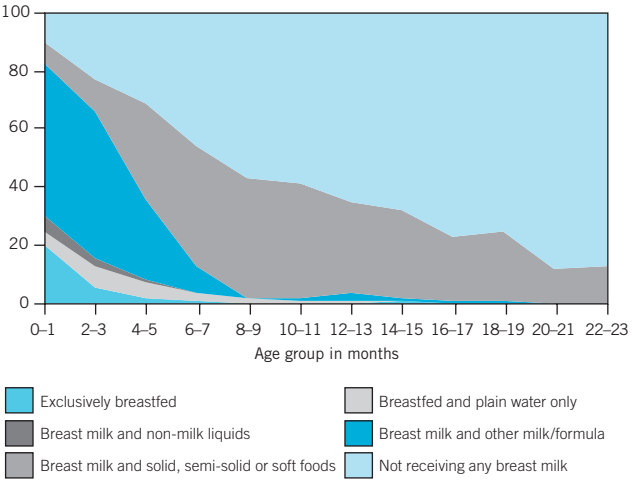
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



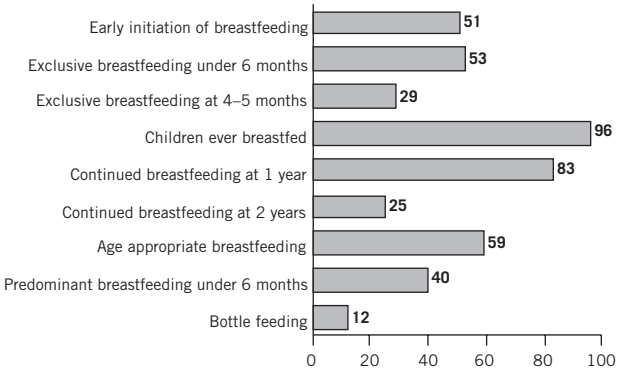
Additional indicators

Infant mortality (rate per thousand live births)	27
Under-5 mortality (rate per thousand live births)	33
% of children under five years of age who are suffering from:	
Underweight	3
Stunting	10
Overweight	8

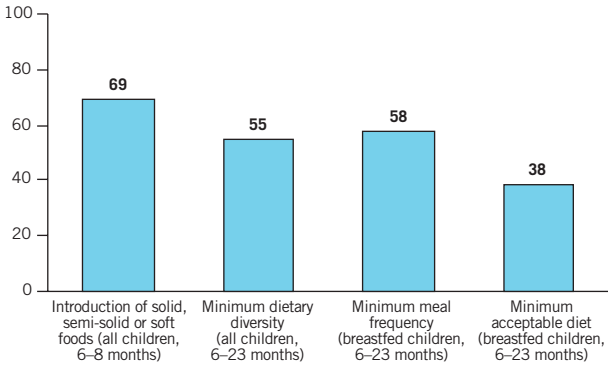
Source: DHS (2007), WHS (2010).

EGYPT

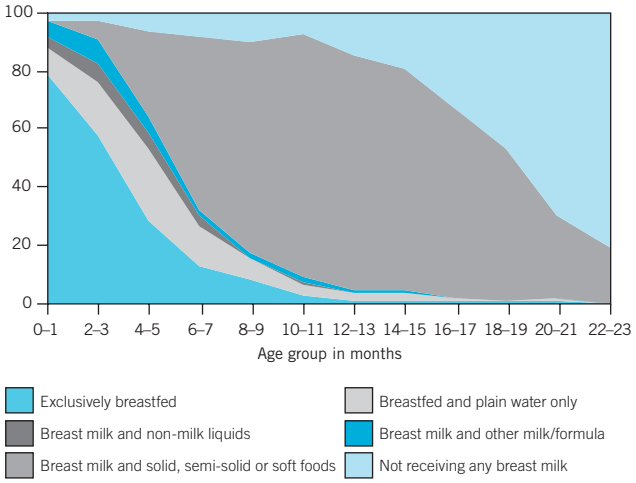
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



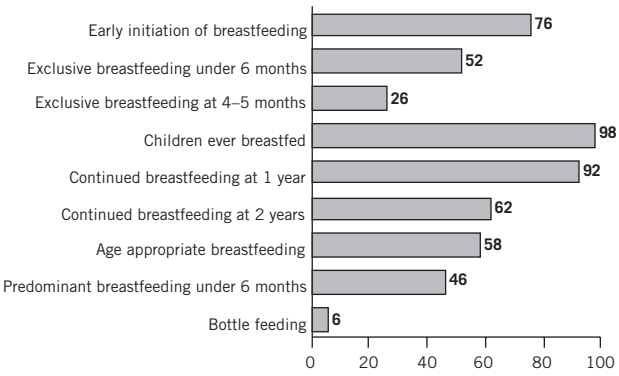
Additional indicators

Infant mortality (rate per thousand live births)	20
Under-5 mortality (rate per thousand live births)	23
% of children under five years of age who are suffering from:	
Underweight	7
Stunting	31
Overweight	21

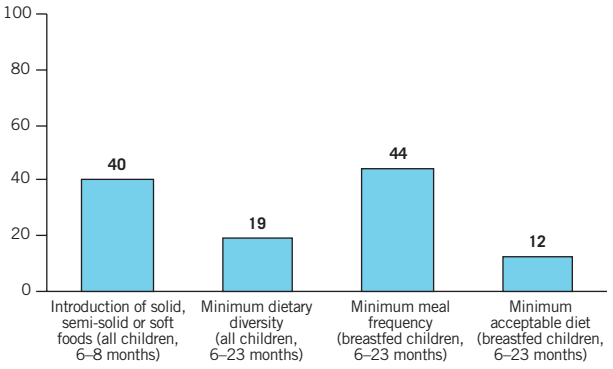
Source: DHS (2008), WHS (2010).

ERITREA

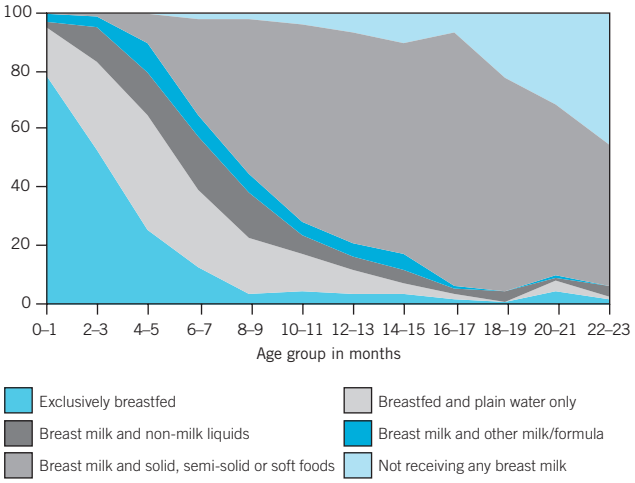
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



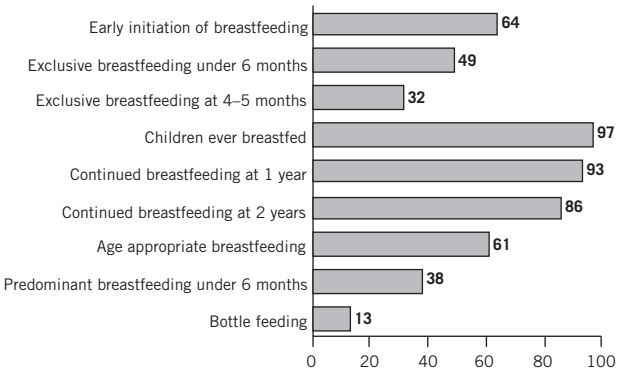
Additional indicators

Infant mortality (rate per thousand live births)	41
Under-5 mortality (rate per thousand live births)	58
% of children under five years of age who are suffering from:	
Underweight	35
Stunting	44
Overweight	2

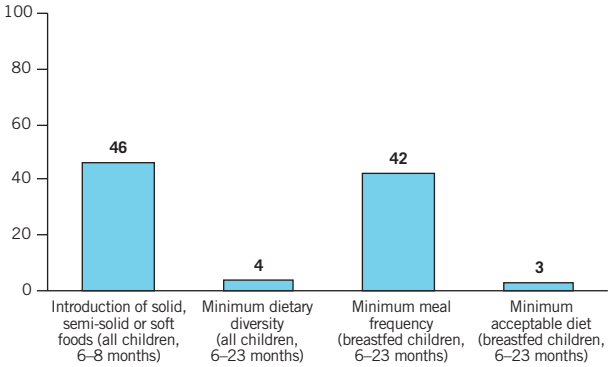
Source: DHS (2002), WHS (2010).

ETHIOPIA

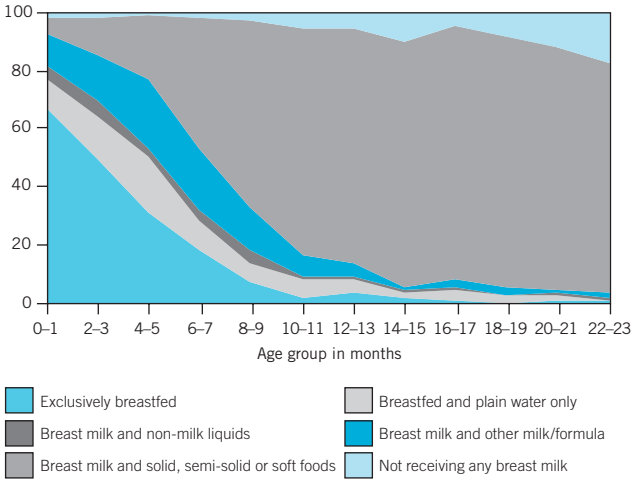
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



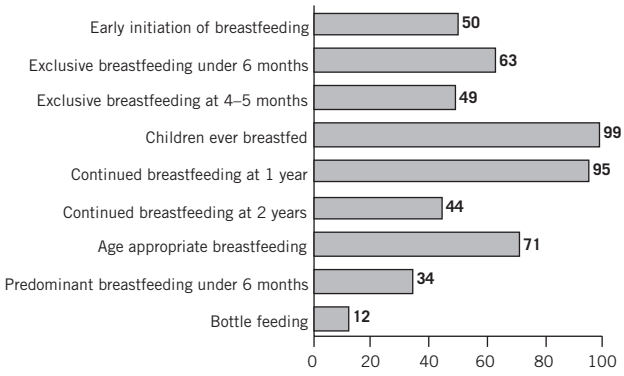
Additional indicators

Infant mortality (rate per thousand live births)	69
Under-5 mortality (rate per thousand live births)	109
% of children under five years of age who are suffering from:	
Underweight	35
Stunting	51
Overweight	5

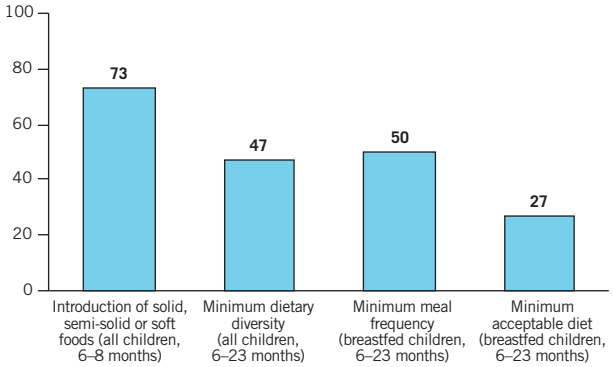
Source: DHS (2005), WHS (2010).

GHANA

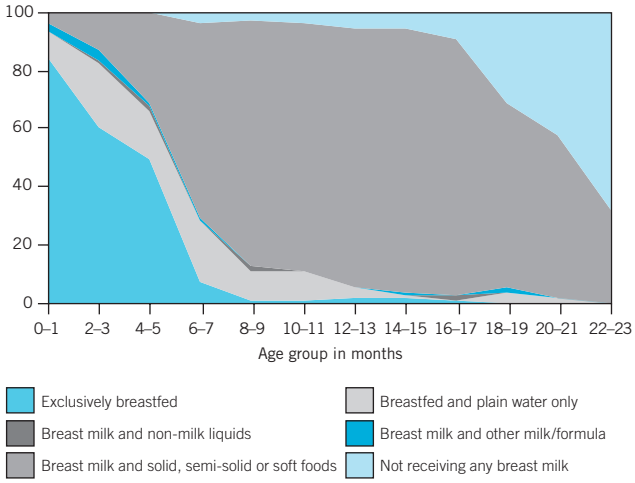
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



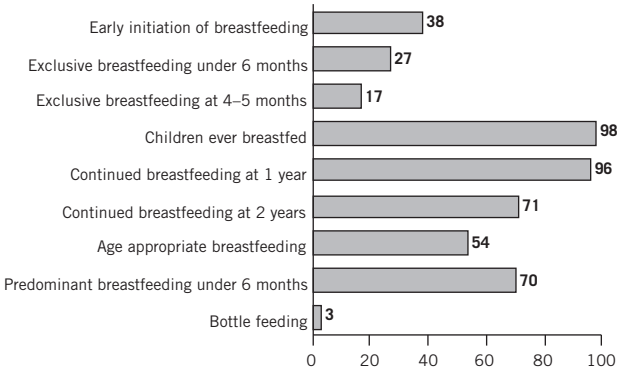
Additional indicators

Infant mortality (rate per thousand live births)	51
Under-5 mortality (rate per thousand live births)	76
% of children under five years of age who are suffering from:	
Underweight	14
Stunting	29
Overweight	6

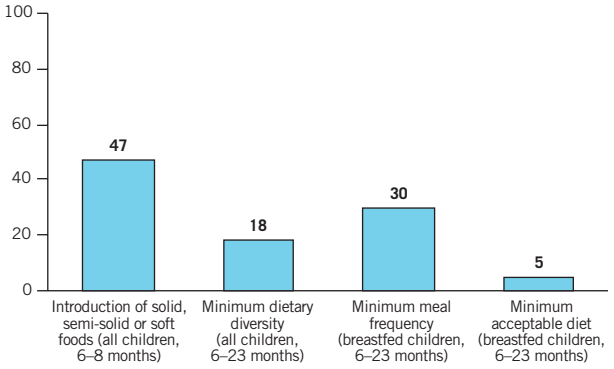
Source: DHS (2008), WHS (2010).

GUINEA

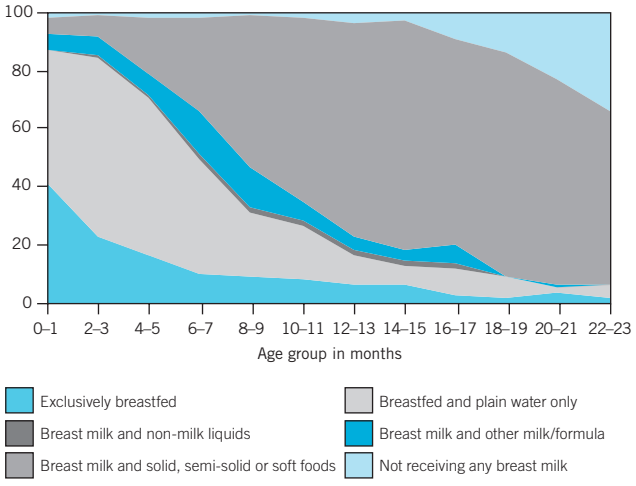
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



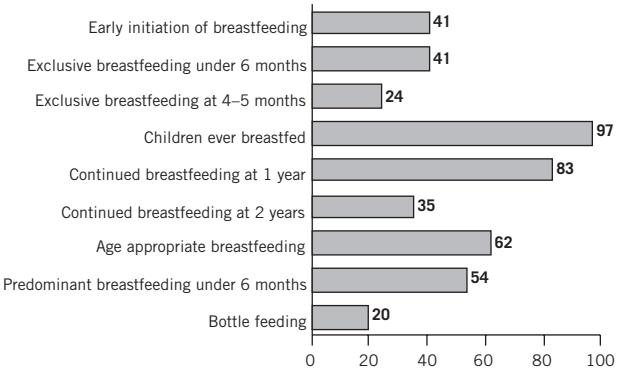
Additional indicators

Infant mortality (rate per thousand live births)	90
Under-5 mortality (rate per thousand live births)	146
% of children under five years of age who are suffering from:	
Underweight	21
Stunting	40
Overweight	…

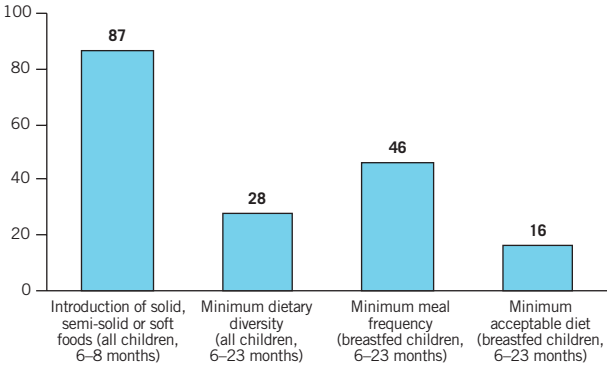
Source: DHS (2005), WHS (2010).

HAITI

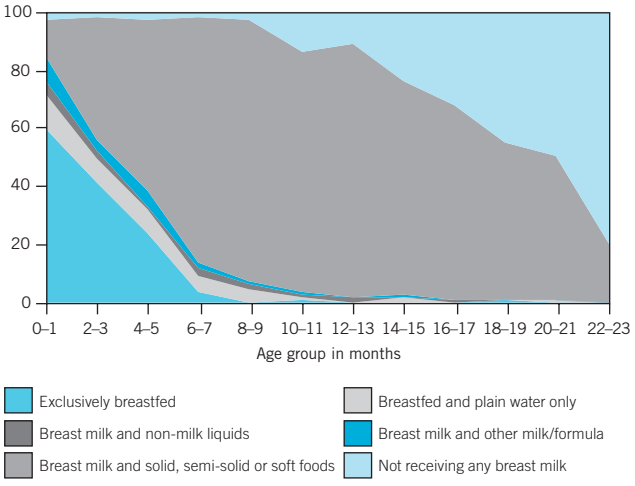
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



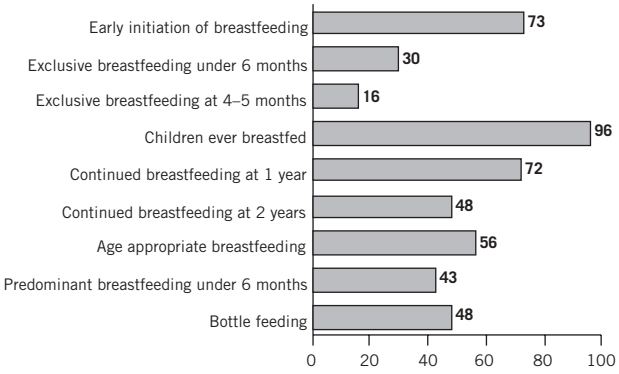
Additional indicators

Infant mortality (rate per thousand live births)	54
Under-5 mortality (rate per thousand live births)	72
% of children under five years of age who are suffering from:	
Underweight	19
Stunting	30
Overweight	4

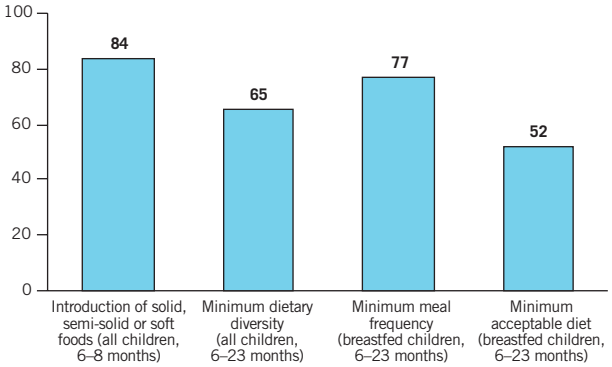
Source: DHS (2005–06), WHS (2010).

HONDURAS

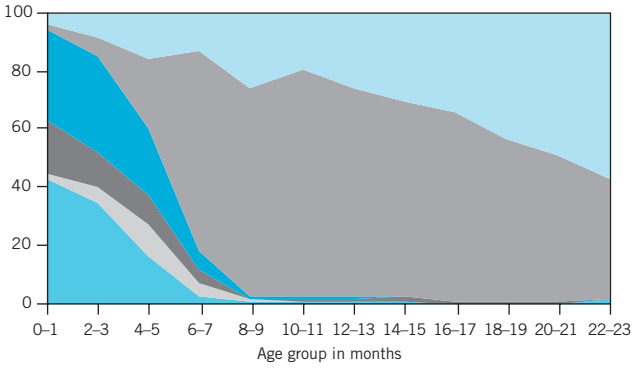
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



Exclusively breastfed
Breastfed and plain water only
Breast milk and non-milk liquids
Breast milk and other milk/formula
Breast milk and solid, semi-solid or soft foods
Not receiving any breast milk

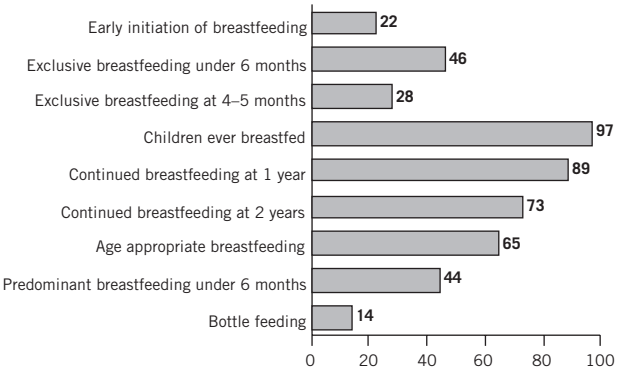
Additional indicators

Infant mortality (rate per thousand live births)	26
Under-5 mortality (rate per thousand live births)	31
% of children under five years of age who are suffering from:	
Underweight	9
Stunting	30
Overweight	6

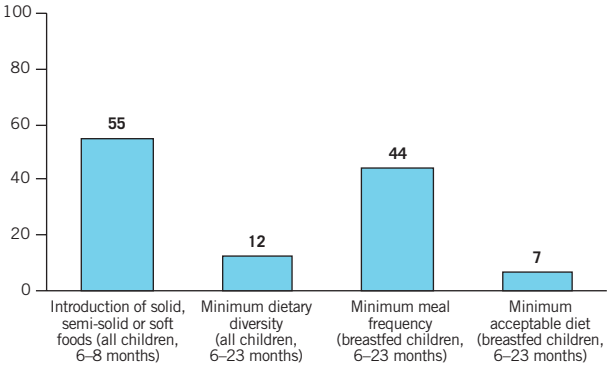
Source: DHS (2005–06), WHS (2010).

INDIA

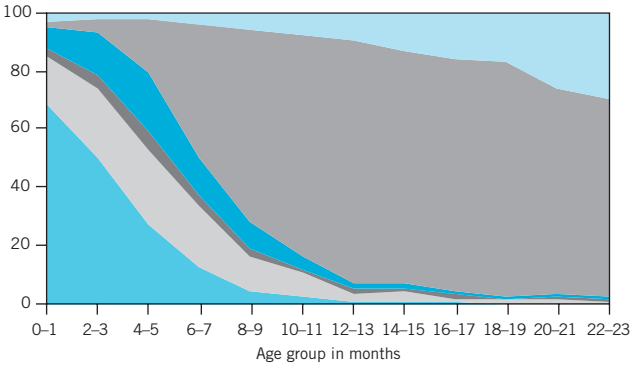
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



Exclusively breastfed
Breastfed and plain water only
Breast milk and non-milk liquids
Breast milk and other milk/formula
Breast milk and solid, semi-solid or soft foods
Not receiving any breast milk

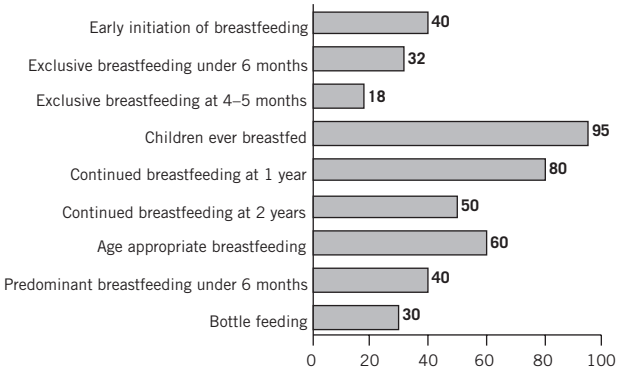
Additional indicators

Infant mortality (rate per thousand live births)	52
Under-5 mortality (rate per thousand live births)	69
% of children under five years of age who are suffering from:	
Underweight	44
Stunting	48
Overweight	2

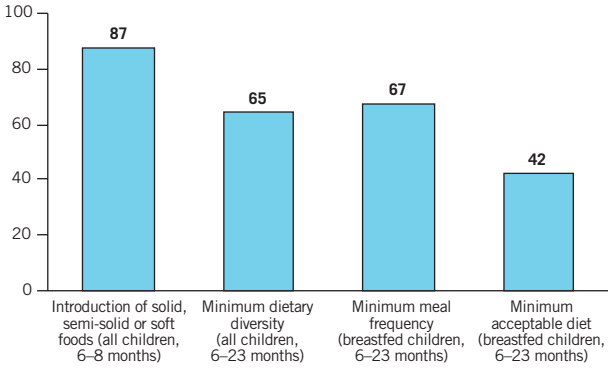
Source: DHS (2005–06), WHS (2010).

INDONESIA

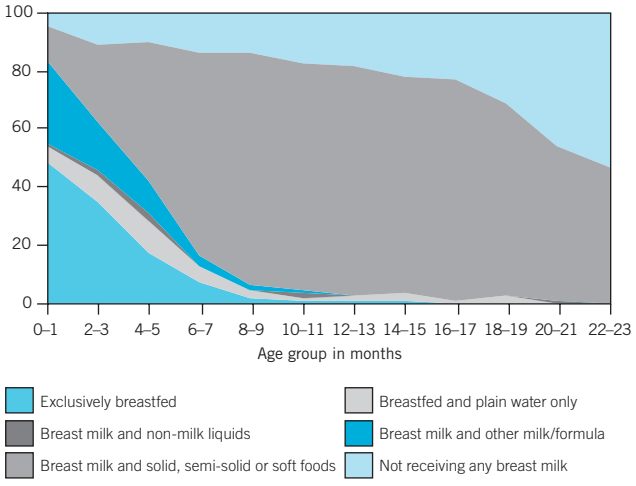
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



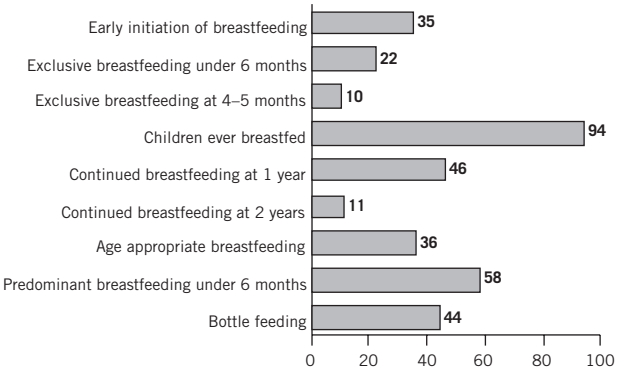
Additional indicators

Infant mortality (rate per thousand live births)	31
Under-5 mortality (rate per thousand live births)	41
% of children under five years of age who are suffering from:	
Underweight	20
Stunting	40
Overweight	11

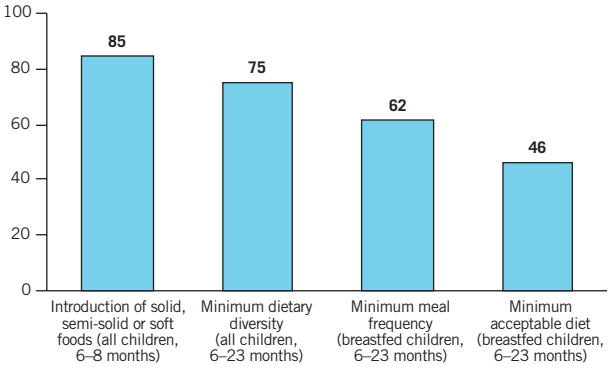
Source: DHS (2007), WHS (2010).

JORDAN

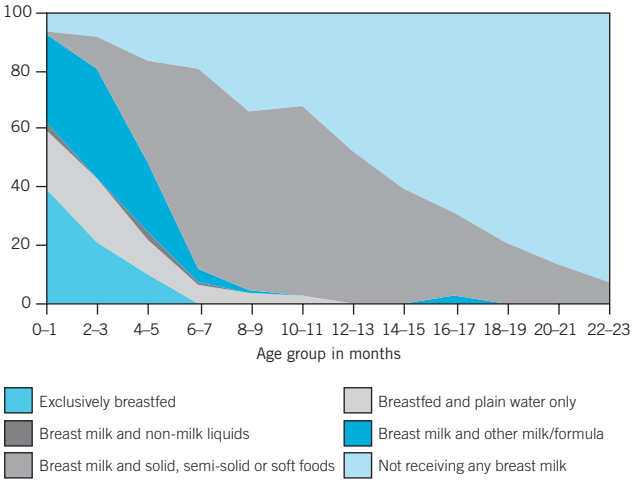
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



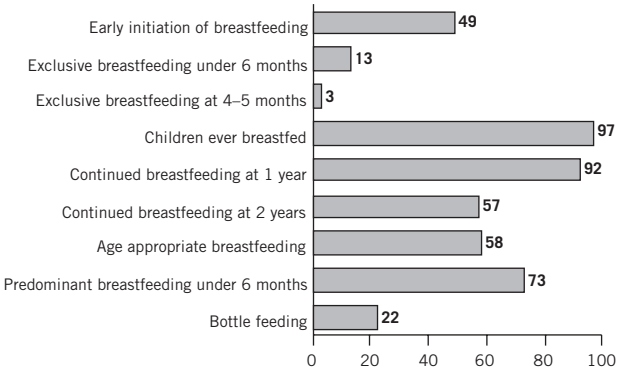
Additional indicators

Infant mortality (rate per thousand live births)	17
Under-5 mortality (rate per thousand live births)	20
% of children under five years of age who are suffering from:	
Underweight	4
Stunting	12
Overweight	5

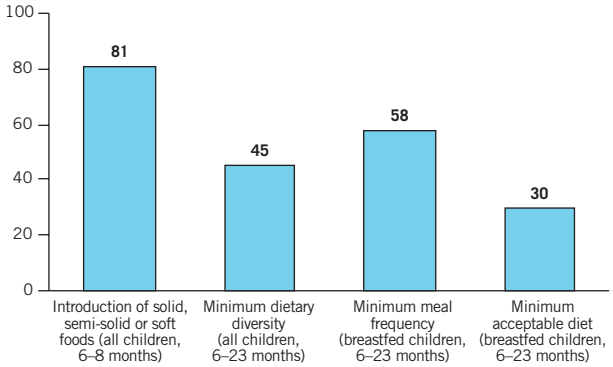
Source: DHS (2007), WHS (2010).

KENYA

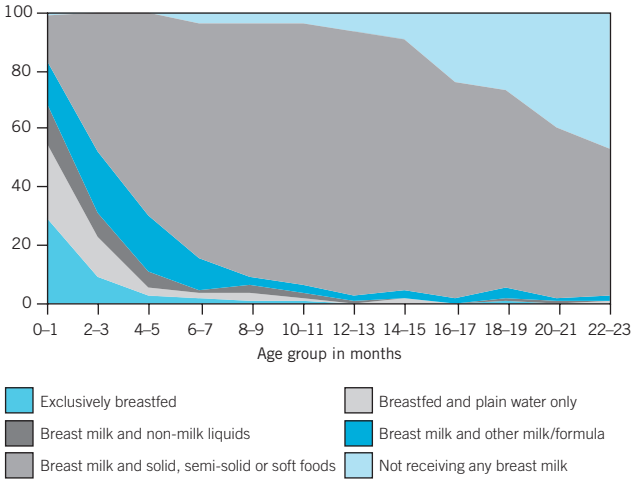
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



- Exclusively breastfed
- Breastfed and plain water only
- Breast milk and non-milk liquids
- Breast milk and other milk/formula
- Breast milk and solid, semi-solid or soft foods
- Not receiving any breast milk

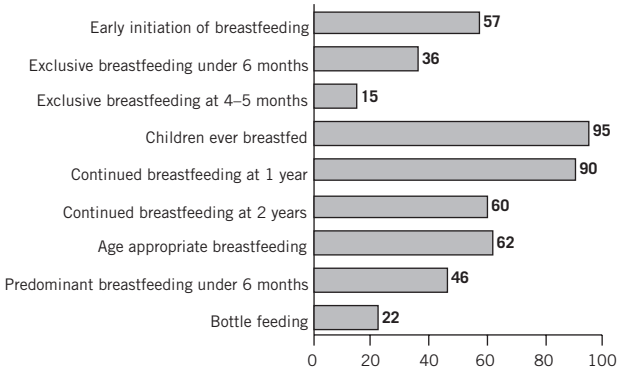
Additional indicators

Infant mortality (rate per thousand live births)	81
Under-5 mortality (rate per thousand live births)	128
% of children under five years of age who are suffering from:	
Underweight	17
Stunting	36
Overweight	6

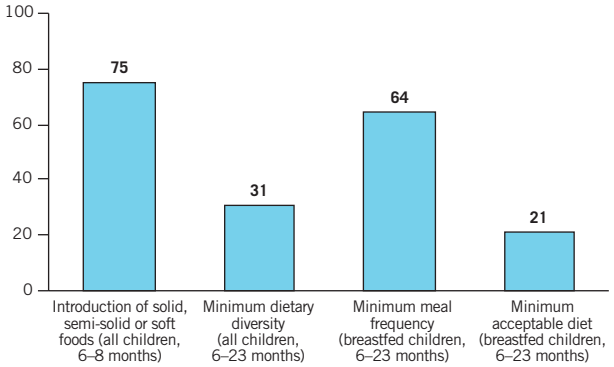
Source: DHS (2003), WHS (2010).

LESOTHO

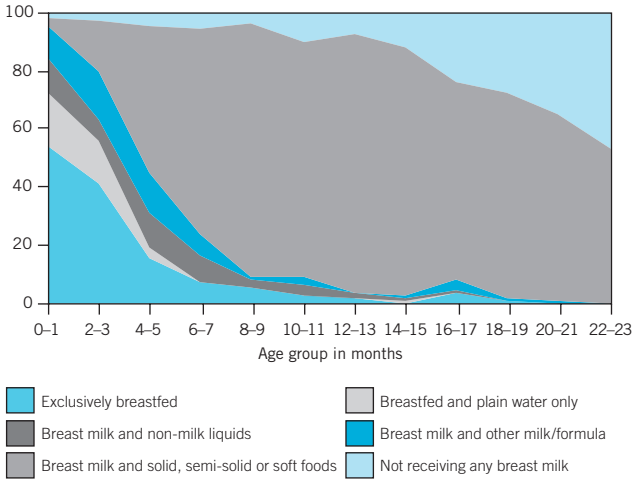
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



- Exclusively breastfed
- Breastfed and plain water only
- Breast milk and non-milk liquids
- Breast milk and other milk/formula
- Breast milk and solid, semi-solid or soft foods
- Not receiving any breast milk

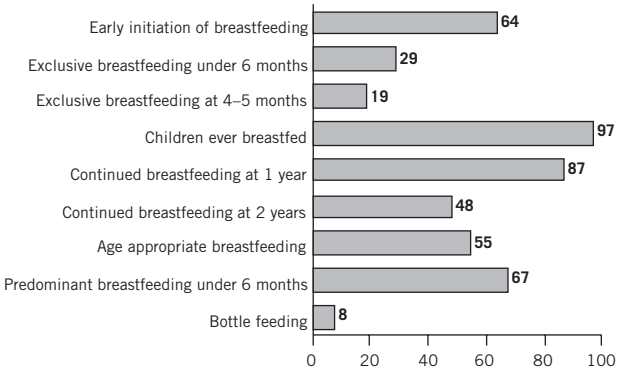
Additional indicators

Infant mortality (rate per thousand live births)	63
Under-5 mortality (rate per thousand live births)	79
% of children under five years of age who are suffering from:	
Underweight	17
Stunting	45
Overweight	7

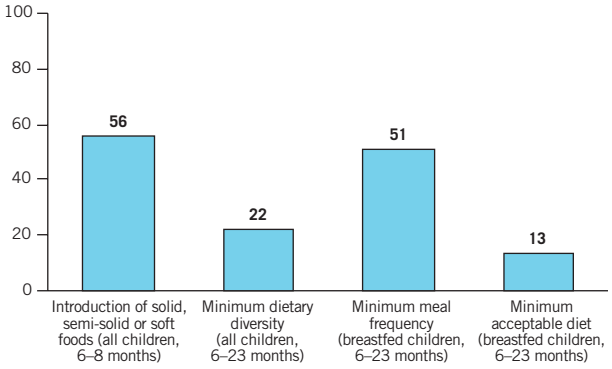
Source: DHS (2004), WHS (2010).

LIBERIA

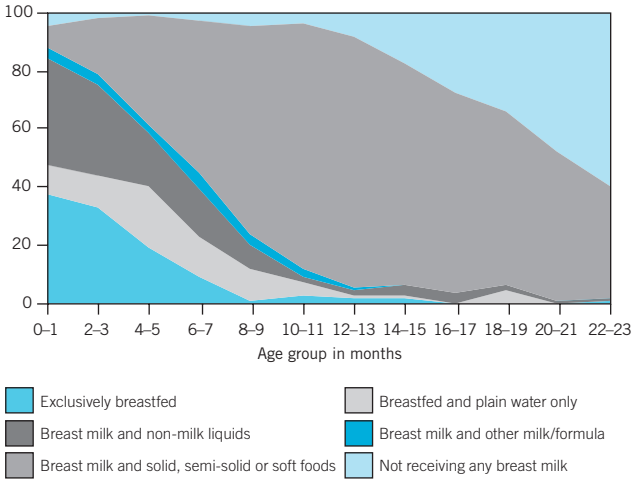
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



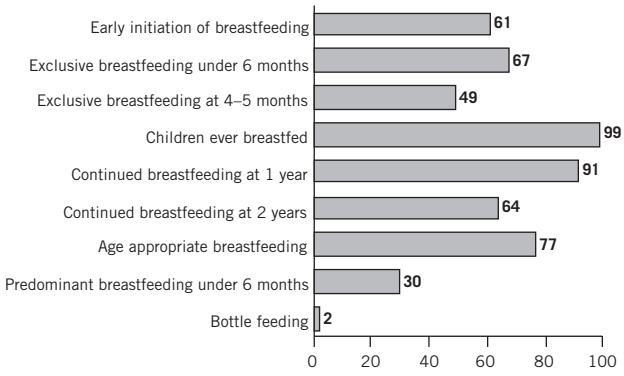
Additional indicators

Infant mortality (rate per thousand live births)	100
Under-5 mortality (rate per thousand live births)	144
% of children under five years of age who are suffering from:	
Underweight	20
Stunting	39
Overweight	4

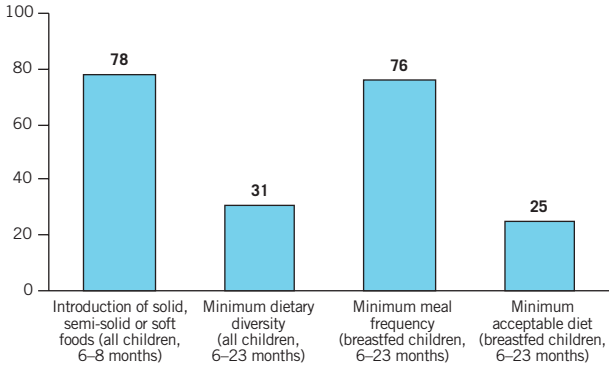
Source: DHS (2007), WHS (2010).

MADAGASCAR

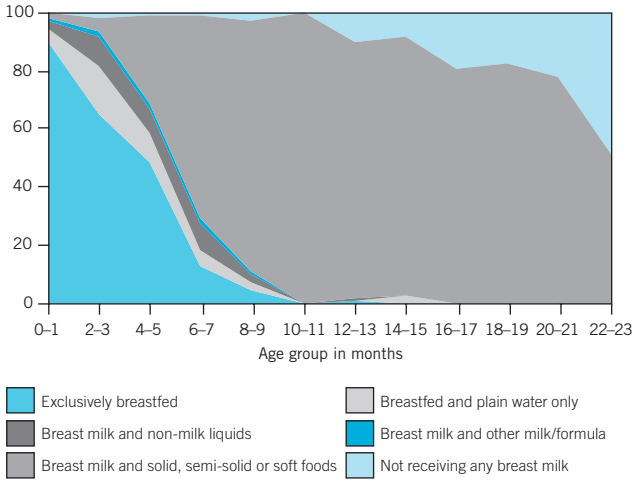
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



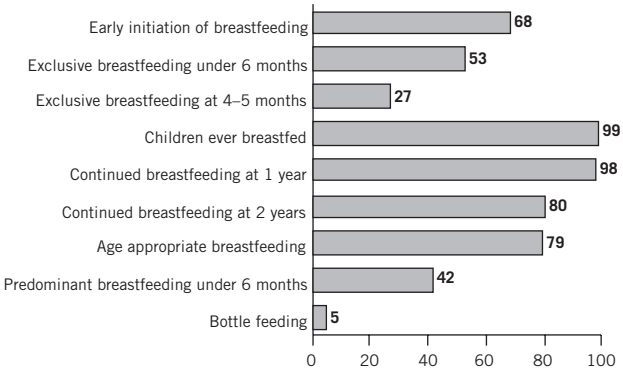
Additional indicators

Infant mortality (rate per thousand live births)	68
Under-5 mortality (rate per thousand live births)	106
% of children under five years of age who are suffering from:	
Underweight	37
Stunting	53
Overweight	6

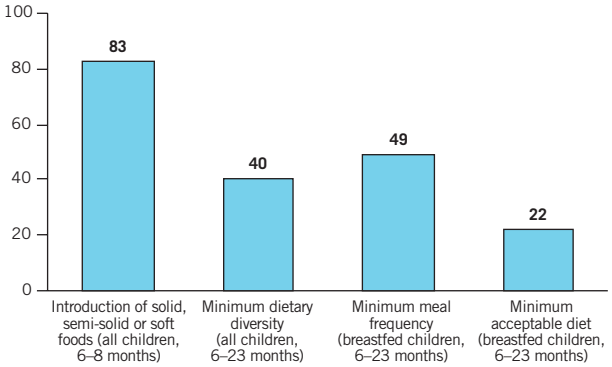
Source: DHS (2003–04), WHS (2010).

MALAWI

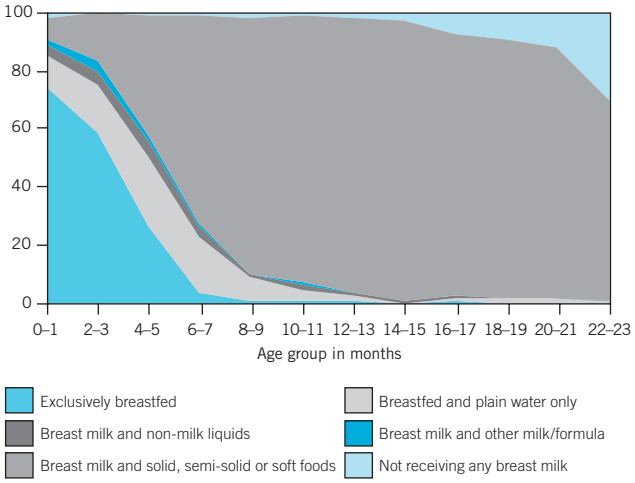
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



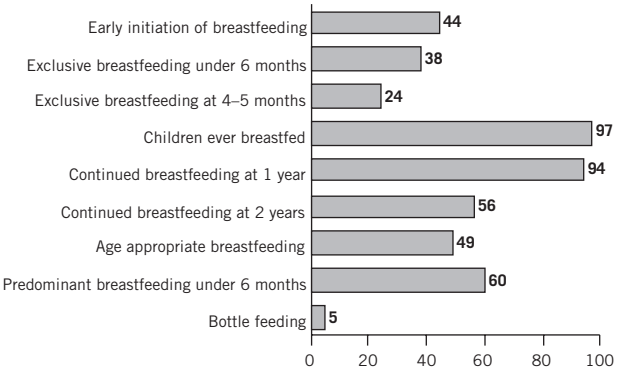
Additional indicators

Infant mortality (rate per thousand live births)	65
Under-5 mortality (rate per thousand live births)	100
% of children under five years of age who are suffering from:	
Underweight	16
Stunting	53
Overweight	11

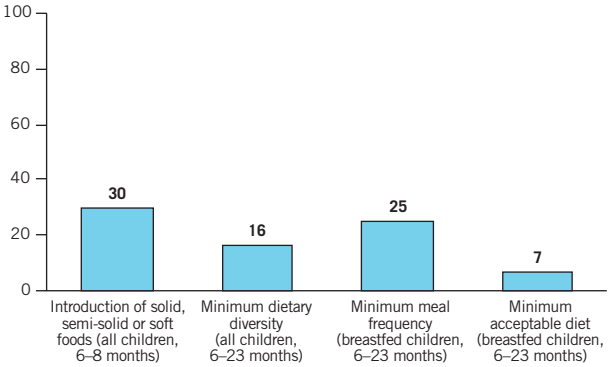
Source: DHS (2004), WHS (2010).

MALI

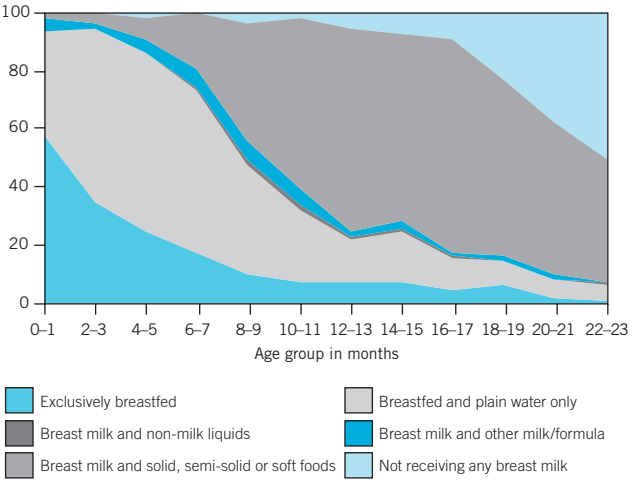
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



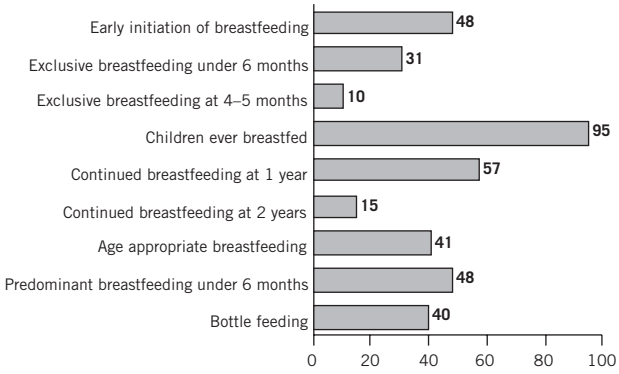
Additional indicators

Infant mortality (rate per thousand live births)	102
Under-5 mortality (rate per thousand live births)	194
% of children under five years of age who are suffering from:	
Underweight	28
Stunting	39
Overweight	5

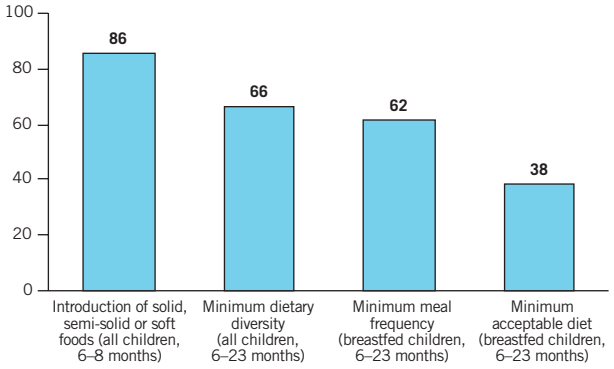
Source: DHS (2006), WHS (2010).

MOROCCO

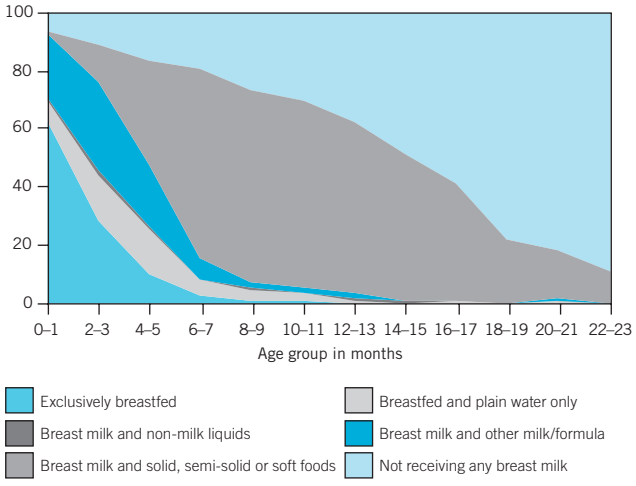
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



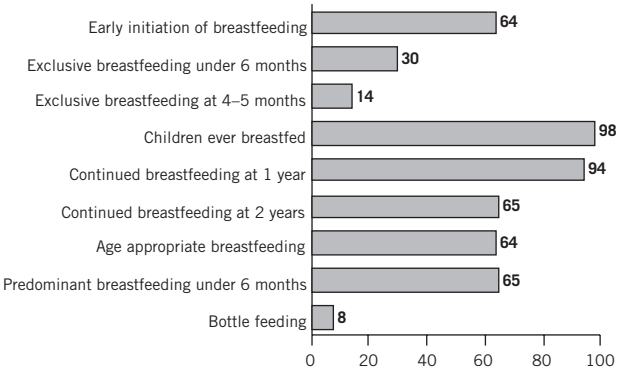
Additional indicators

Infant mortality (rate per thousand live births)	32
Under-5 mortality (rate per thousand live births)	36
% of children under five years of age who are suffering from:	
Underweight	10
Stunting	23
Overweight	13

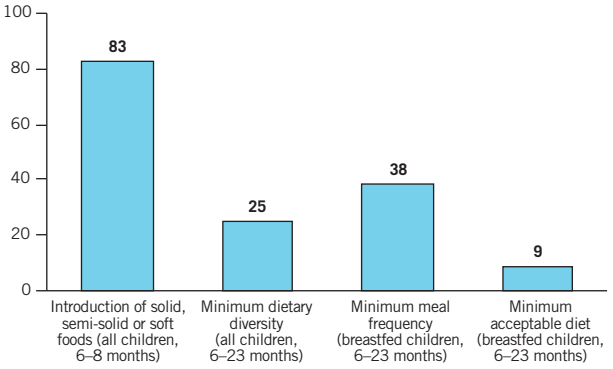
Source: DHS (2003–04), WHS (2010).

MOZAMBIQUE

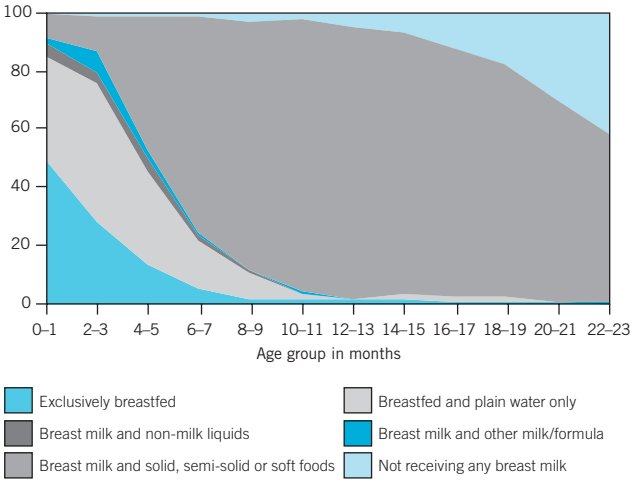
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



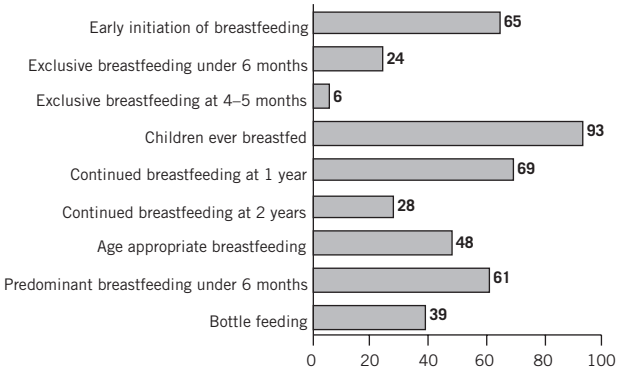
Additional indicators

Infant mortality (rate per thousand live births)	90
Under-5 mortality (rate per thousand live births)	130
% of children under five years of age who are suffering from:	
Underweight	21
Stunting	47
Overweight	6

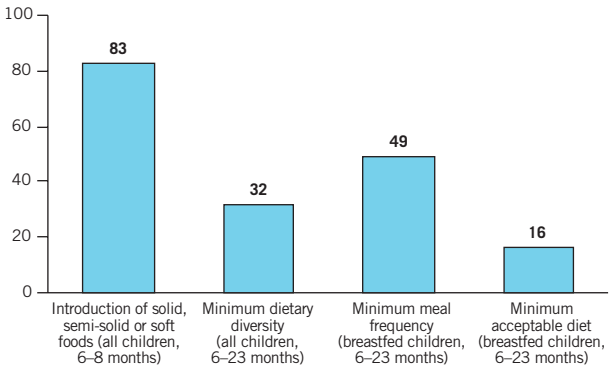
Source: DHS (2003), WHS (2010).

NAMIBIA

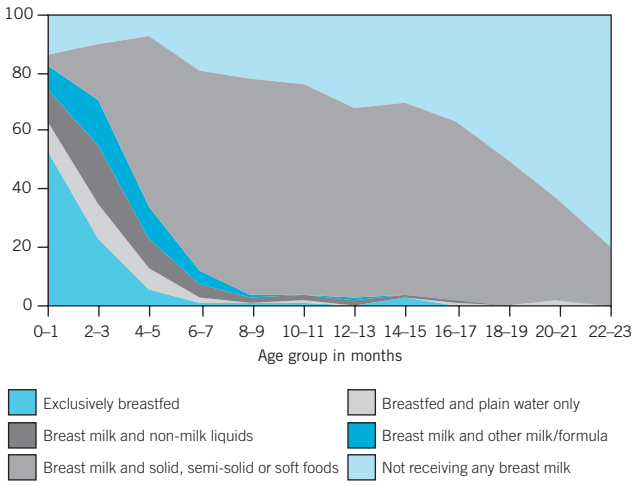
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



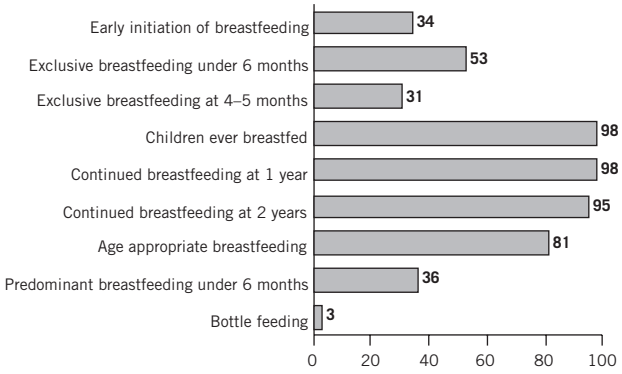
Additional indicators

Infant mortality (rate per thousand live births)	31
Under-5 mortality (rate per thousand live births)	42
% of children under five years of age who are suffering from:	
Underweight	18
Stunting	30
Overweight	5

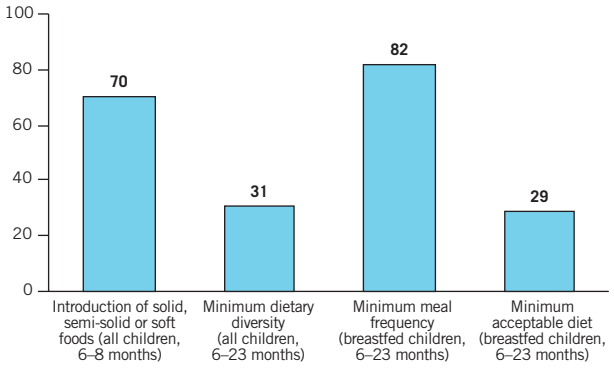
Source: DHS (2006–07), WHS (2010).

NEPAL

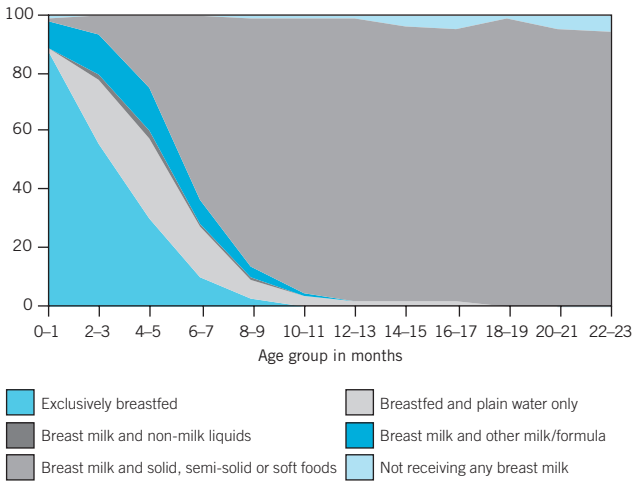
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



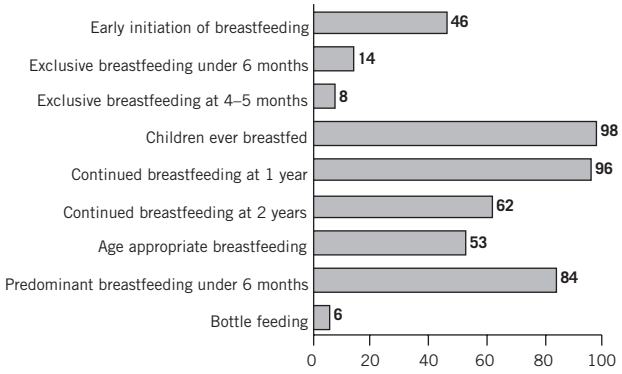
Additional indicators

Infant mortality (rate per thousand live births)	41
Under-5 mortality (rate per thousand live births)	51
% of children under five years of age who are suffering from:	
Underweight	39
Stunting	49
Overweight	1

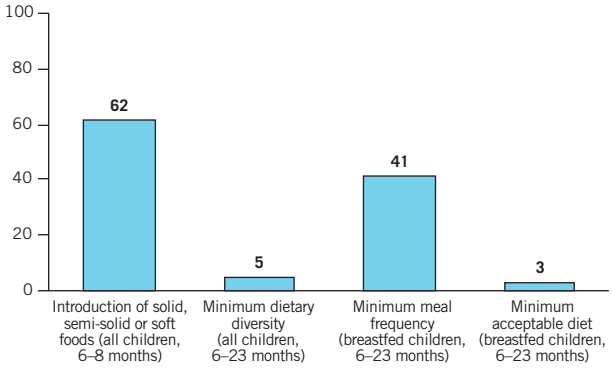
Source: DHS (2006), WHS (2010).

NIGER

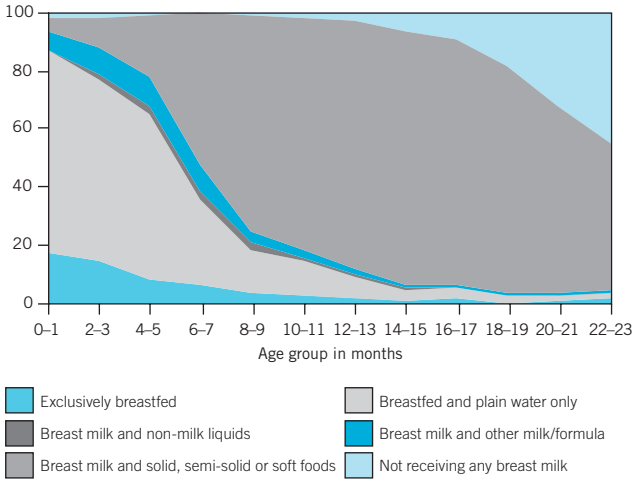
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



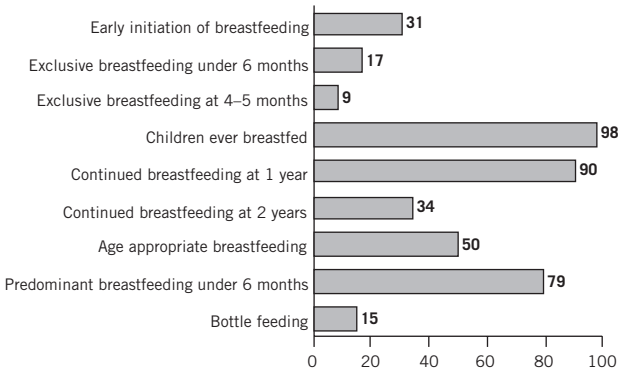
Additional indicators

Infant mortality (rate per thousand live births)	79
Under-5 mortality (rate per thousand live births)	167
% of children under five years of age who are suffering from:	
Underweight	40
Stunting	55
Overweight	4

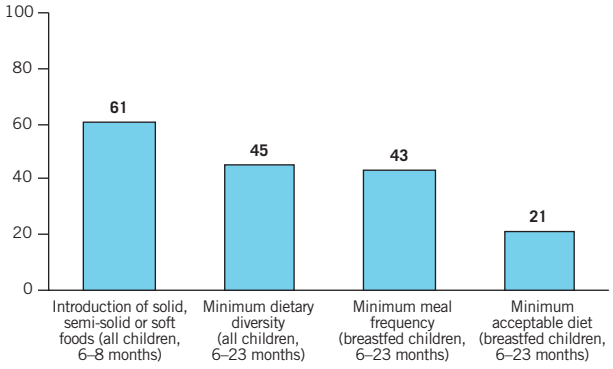
Source: DHS (2006), WHS (2010).

NIGERIA

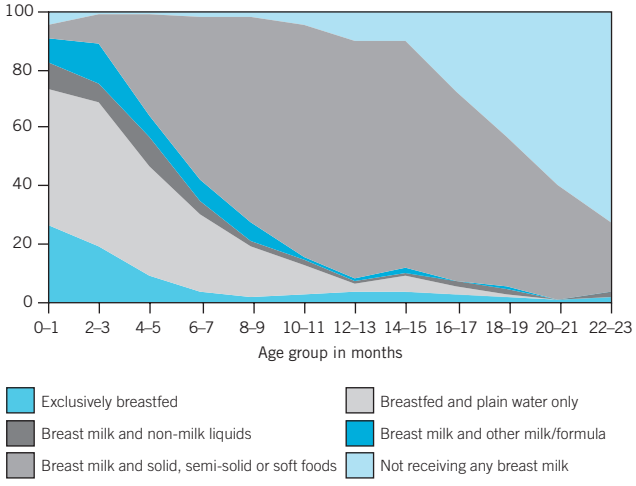
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



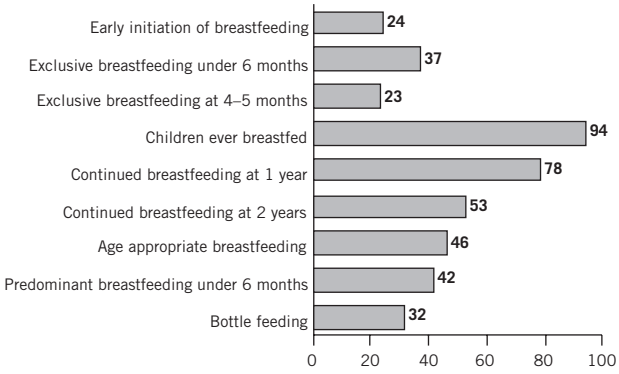
Additional indicators

Infant mortality (rate per thousand live births)	96
Under-5 mortality (rate per thousand live births)	186
% of children under five years of age who are suffering from:	
Underweight	27
Stunting	41
Overweight	11

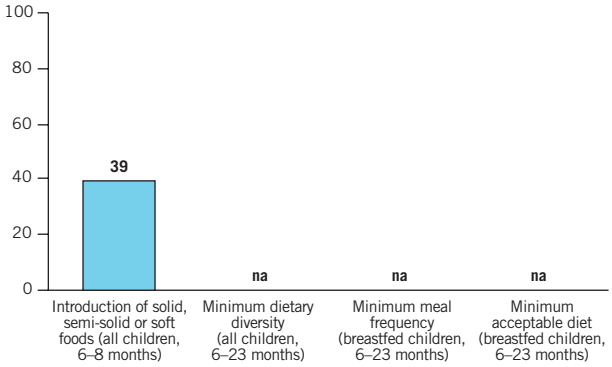
Source: DHS (2003), WHS (2010).

PAKISTAN

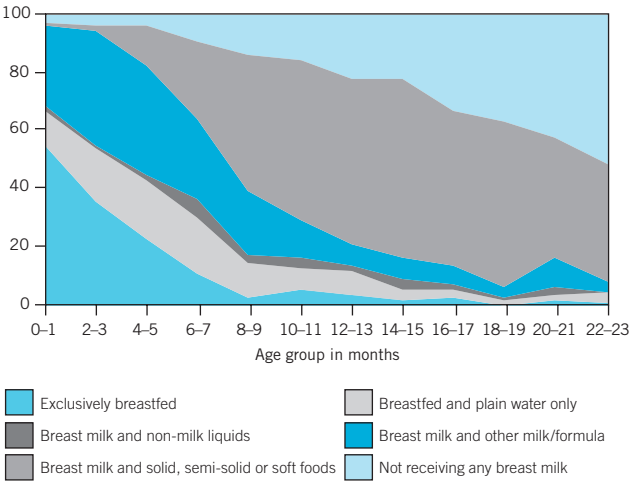
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



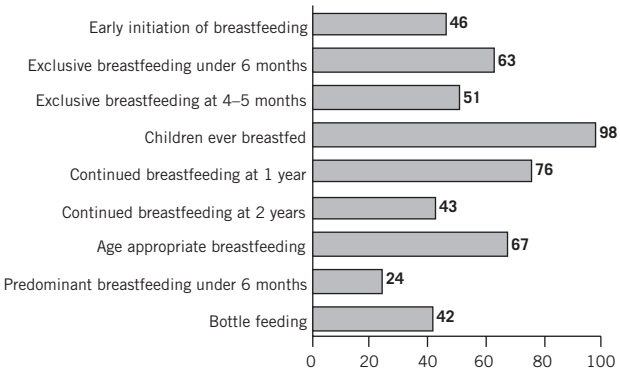
Additional indicators

Infant mortality (rate per thousand live births)	72
Under-5 mortality (rate per thousand live births)	89
% of children under five years of age who are suffering from:	
Underweight	31
Stunting	42
Overweight	5

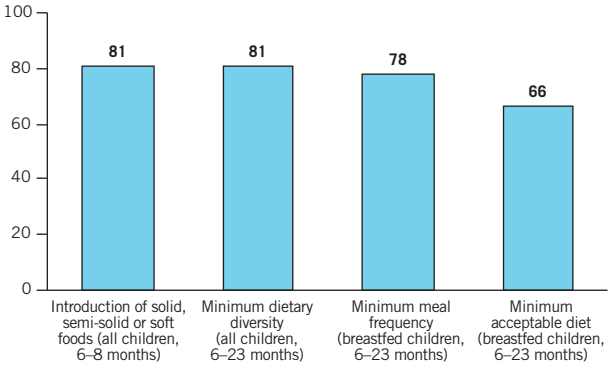
Source: DHS (2006–07), WHS (2010).

PERU

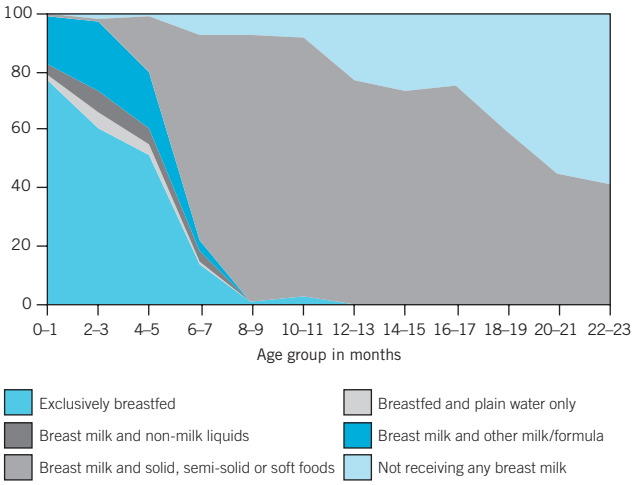
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



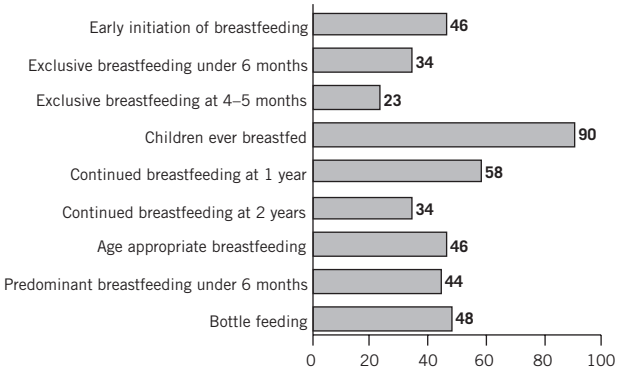
Additional indicators

Infant mortality (rate per thousand live births)	22
Under-5 mortality (rate per thousand live births)	24
% of children under five years of age who are suffering from:	
Underweight	5
Stunting	30
Overweight	9

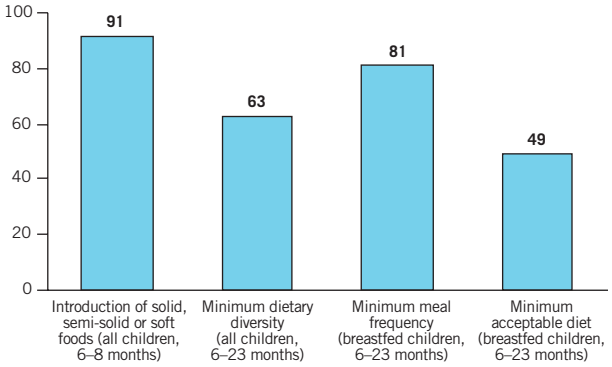
Source: DHS (2004–06), WHS (2010).

PHILIPPINES

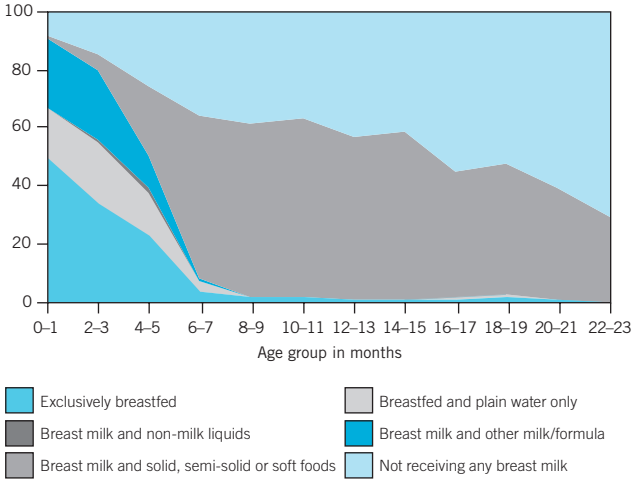
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



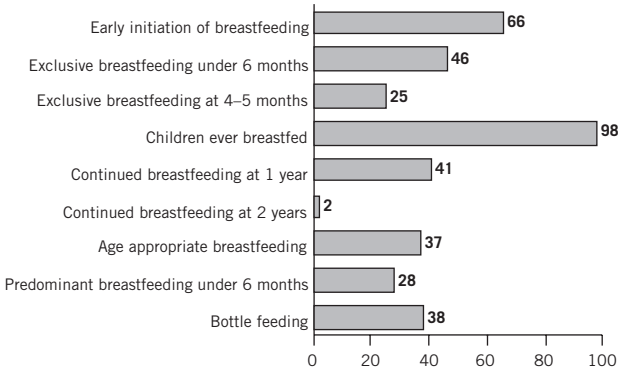
Additional indicators

Infant mortality (rate per thousand live births)	26
Under-5 mortality (rate per thousand live births)	32
% of children under five years of age who are suffering from:	
Underweight	21
Stunting	34
Overweight	2

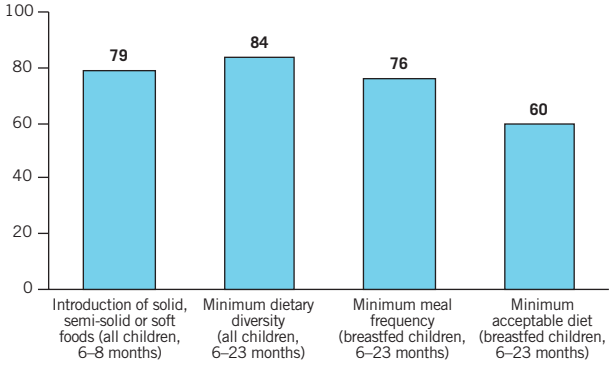
Source: DHS (2008), WHS (2010).

REPUBLIC OF MOLDOVA

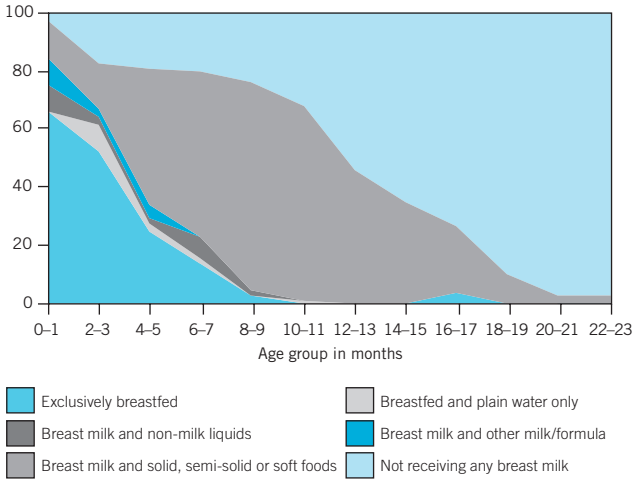
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



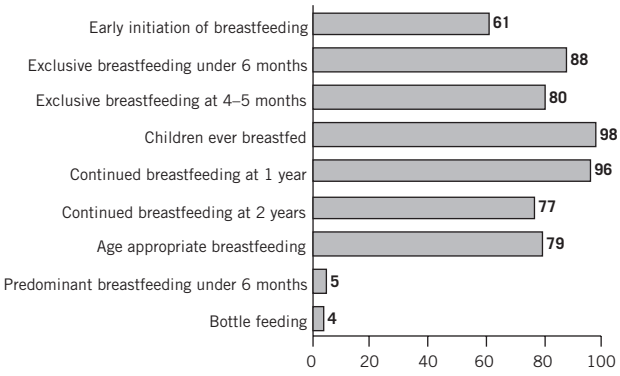
Additional indicators

Infant mortality (rate per thousand live births)	15
Under-5 mortality (rate per thousand live births)	17
% of children under five years of age who are suffering from:	
Underweight	3
Stunting	11
Overweight	9

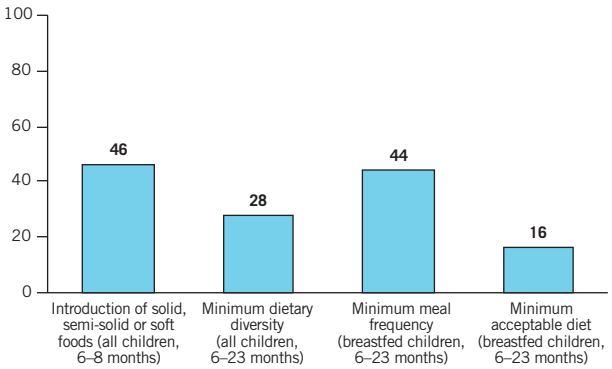
Source: DHS (2005), WHS (2010).

RWANDA

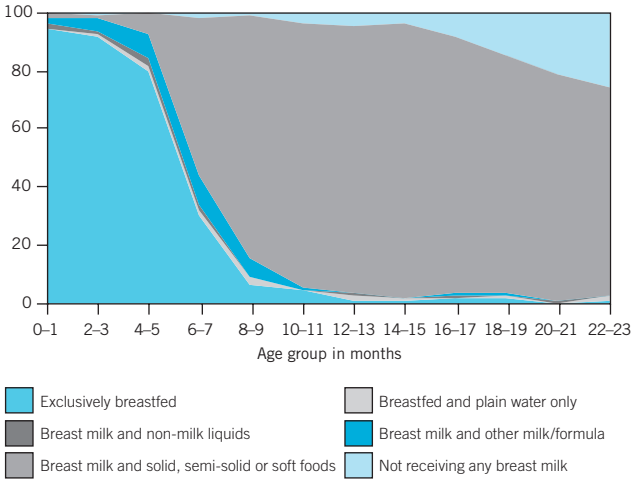
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



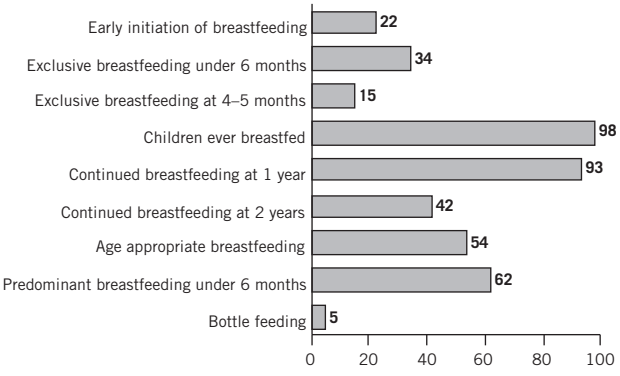
Additional indicators

Infant mortality (rate per thousand live births)	72
Under-5 mortality (rate per thousand live births)	112
% of children under five years of age who are suffering from:	
Underweight	18
Stunting	52
Overweight	7

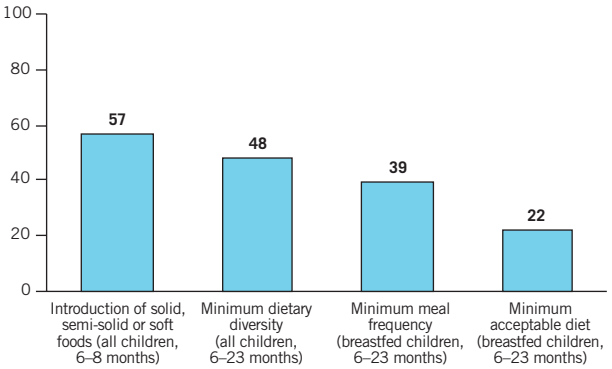
Source: DHS (2005), WHS (2010).

SENEGAL

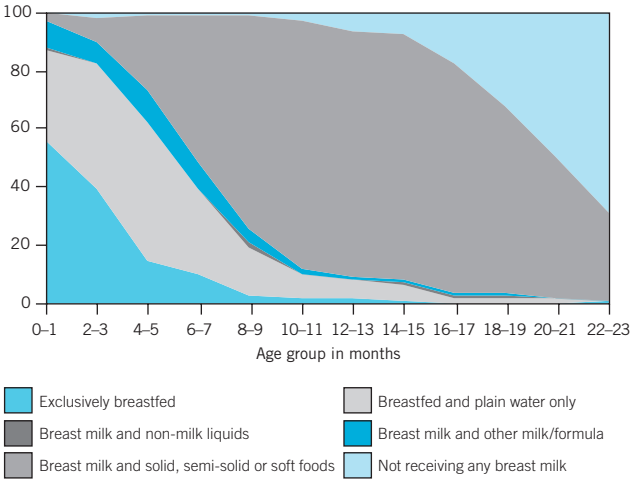
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



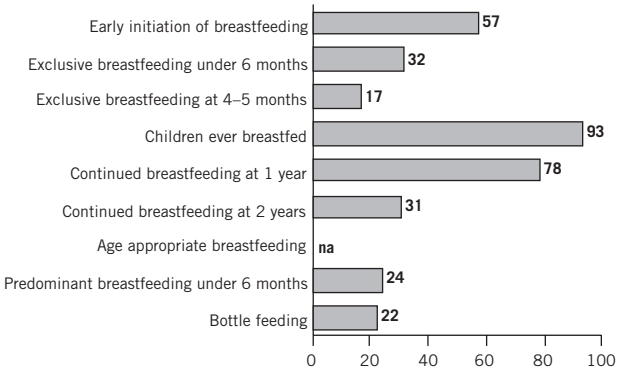
Additional indicators

Infant mortality (rate per thousand live births)	57
Under-5 mortality (rate per thousand live births)	108
% of children under five years of age who are suffering from:	
Underweight	15
Stunting	20
Overweight	2

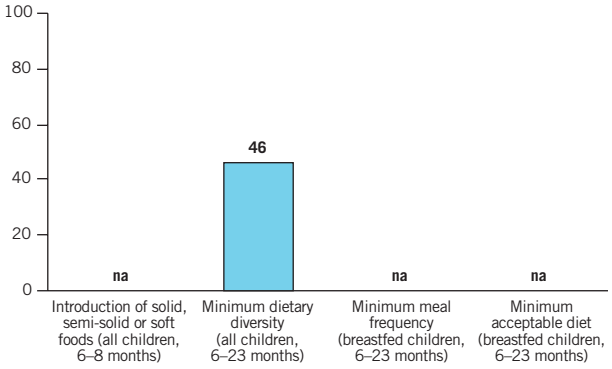
Source: DHS (2005), WHS (2010).

SWAZILAND

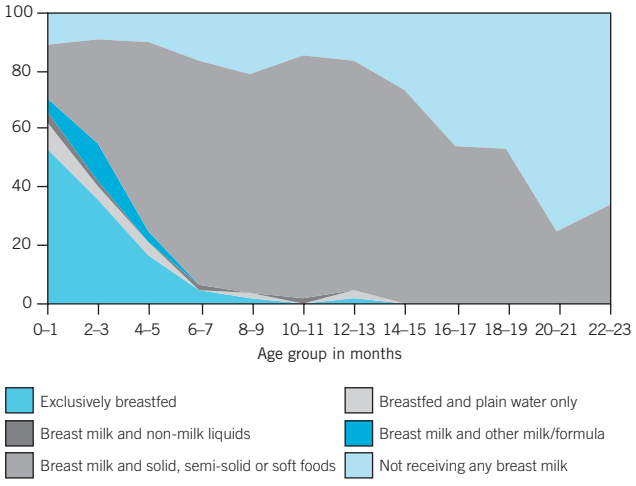
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



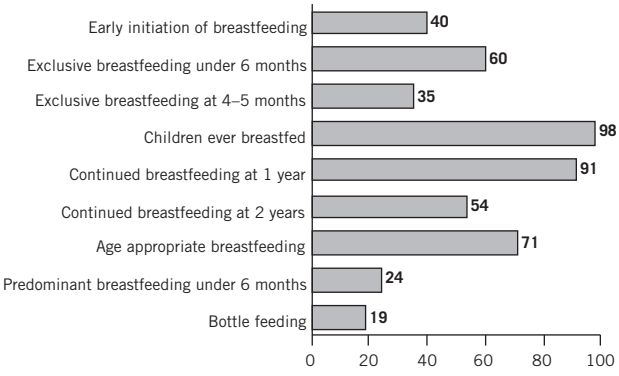
Additional indicators

Infant mortality (rate per thousand live births)	59
Under-5 mortality (rate per thousand live births)	83
% of children under five years of age who are suffering from:	
Underweight	6
Stunting	30
Overweight	11

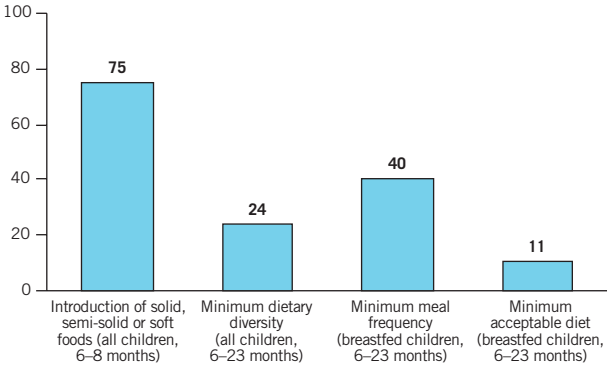
Source: DHS (2006–07), WHS (2010).

UGANDA

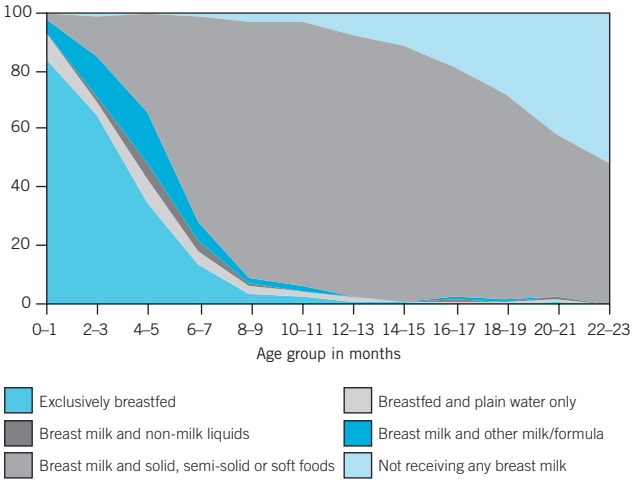
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



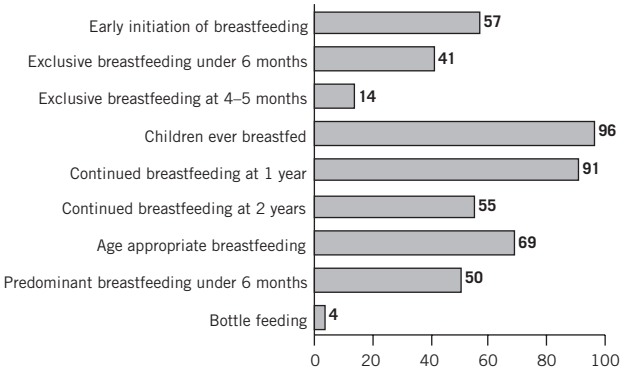
Additional indicators

Infant mortality (rate per thousand live births)	84
Under-5 mortality (rate per thousand live births)	135
% of children under five years of age who are suffering from:	
Underweight	16
Stunting	39
Overweight	5

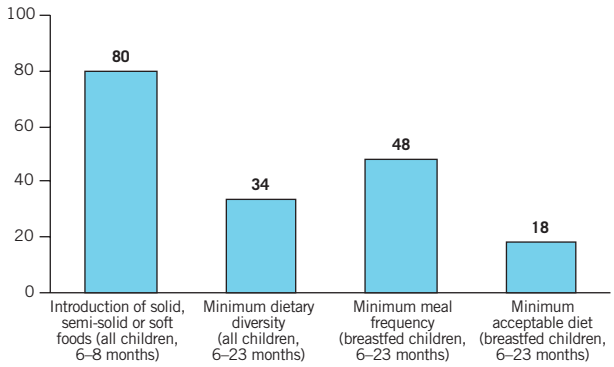
Source: DHS (2006), WHS (2010).

UNITED REPUBLIC OF TANZANIA

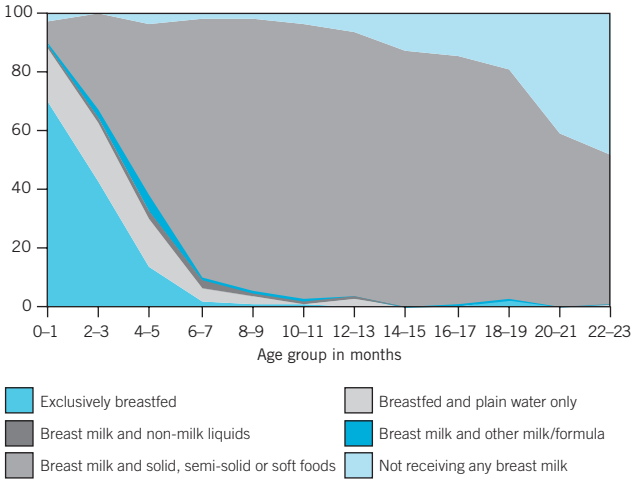
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



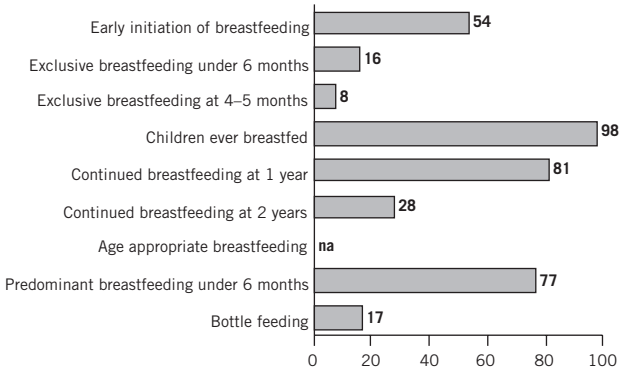
Additional indicators

Infant mortality (rate per thousand live births)	67
Under-5 mortality (rate per thousand live births)	103
% of children under five years of age who are suffering from:	
Underweight	17
Stunting	44
Overweight	5

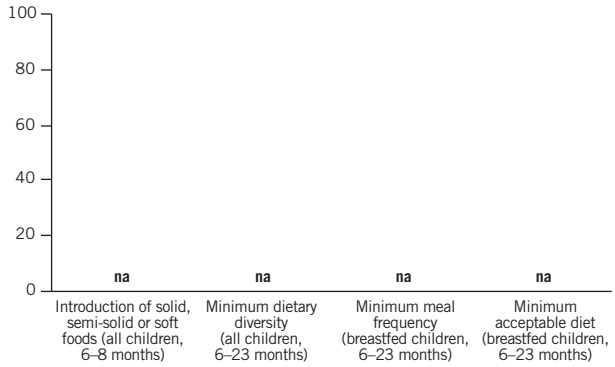
Source: DHS (2004–05), WHS (2010).

VIET NAM

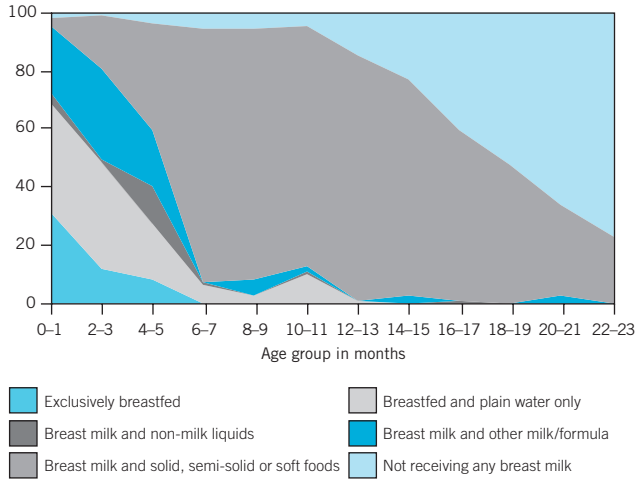
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



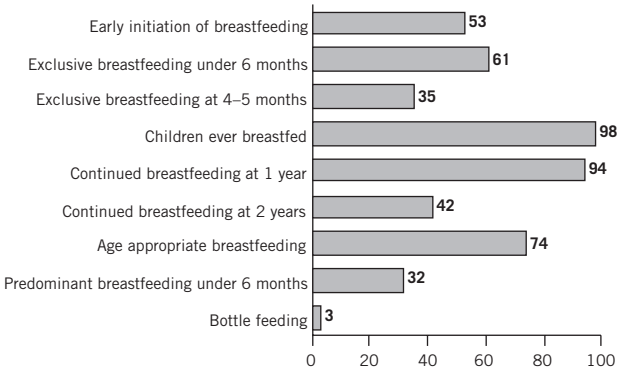
Additional indicators

Infant mortality (rate per thousand live births)	12
Under-5 mortality (rate per thousand live births)	14
% of children under five years of age who are suffering from:	
Underweight	20
Stunting	31
Overweight	3

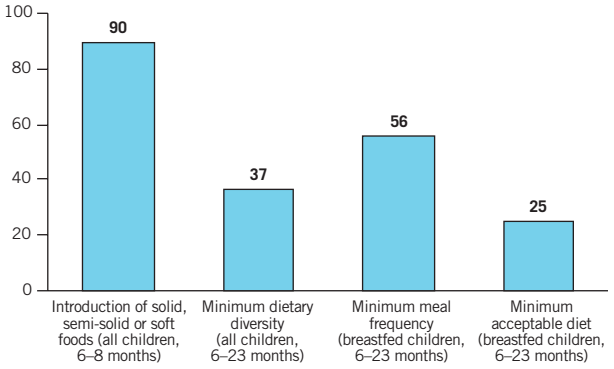
Source: DHS (2002), WHS (2010).

ZAMBIA

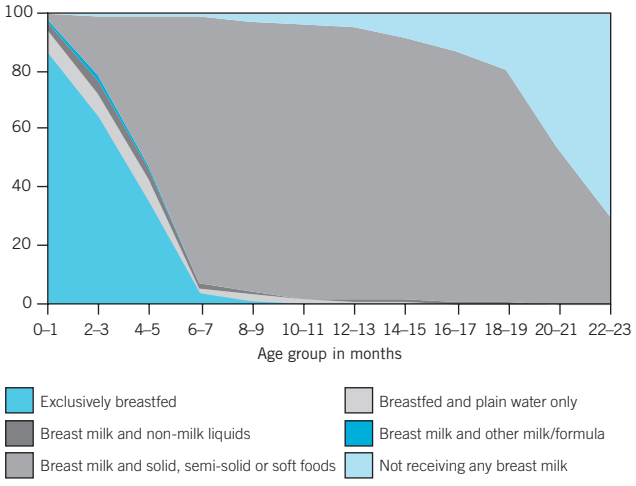
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



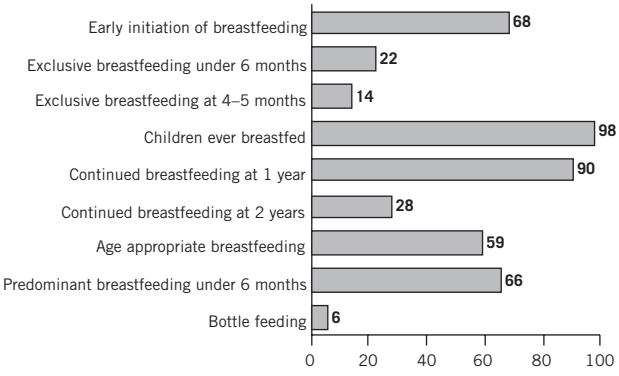
Additional indicators

Infant mortality (rate per thousand live births)	92
Under-5 mortality (rate per thousand live births)	148
% of children under five years of age who are suffering from:	
Underweight	15
Stunting	46
Overweight	8

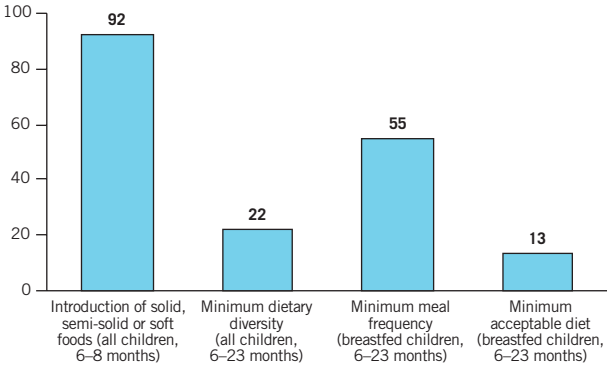
Source: DHS (2007), WHS (2010).

ZIMBABWE

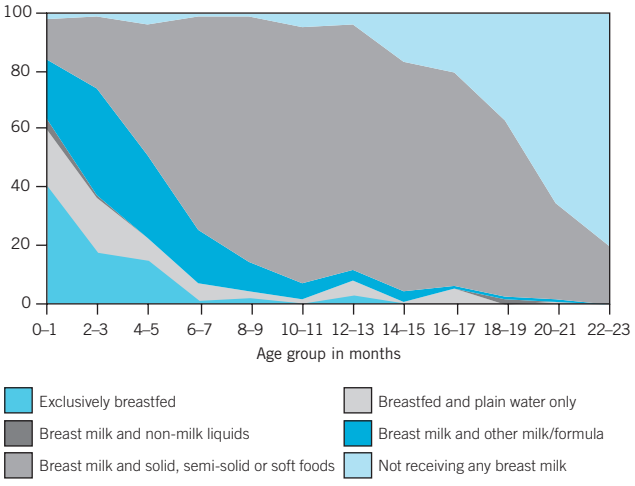
Breastfeeding indicators (%)



Complementary feeding indicators (%)



Infant and young child feeding practices by age (%)



Additional indicators

Infant mortality (rate per thousand live births)	62
Under-5 mortality (rate per thousand live births)	96
% of children under five years of age who are suffering from:	
Underweight	14
Stunting	36
Overweight	9

Source: DHS (2005–06), WHS (2010).

Values by indicator and country

Infant and young child feeding status by country

Country and survey year	Early initiation of breastfeeding		Exclusive breastfeeding under 6 months		Exclusive breastfeeding at 4–5 months		Continued breastfeeding at 1 year		Continued breastfeeding at 2 years	
	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]
Azerbaijan 2006	28.5	983	11.8	241	2.4	75	33.2	153	16.2	105
Bangladesh 2007	42.1	2 347	42.9	483	23.1	207	94.5	321	91.0	369
Benin 2006	53.7	6 661	43.1	1 519	21.9	524	96.0	1 065	57.3	803
Bolivia 2003	58.0	3 854	53.6	909	39.5	347	81.5	658	45.8	537
Burkina Faso 2003	32.3	4 303	18.8	1 115	16.1	395	98.1	692	81.0	468
Cambodia 2005	34.4	3 185	60.0	739	45.6	256	89.9	499	54.2	493
Cameroon 2004	29.4	3 321	23.5	788	10.7	289	83.1	517	28.5	417
Chad 2004	32.0	2 336	2.0	633	2.4	189	91.5	429	65.8	198
Colombia 2005	57.4	5 512	47.0	1 311	26.1	491	57.3	877	32.2	786
Congo (Brazzaville) 2005	34.1	2 099	19.1	545	9.6	187	81.6	308	21.3	271
DR Congo 2007	48.2	3 670	36.1	927	17.1	313	90.8	630	63.5	388
Dominican Republic 2007	58.0	4 064	7.8	859	2.1	351	33.6	499	12.0	692
Egypt 2008	51.3	4 659	53.2	1 090	28.8	387	83.3	691	25.2	653
Eritrea 2002	76.3	2 360	52.0	651	25.8	217	91.9	351	61.7	270
Ethiopia 2005	64.0	4 469	49.0	1 142	31.6	355	92.6	774	85.8	431
Ghana 2008	49.8	1 228	62.8	308	49.4	109	94.5	191	43.9	138
Guinea 2005	37.8	2 731	27.0	751	16.7	258	96.4	489	70.6	288
Haiti 2005-06	41.3	2 408	40.7	569	24.2	193	82.9	392	34.9	283
Honduras 2005-06	73.1	3 986	29.7	893	16.1	334	72.4	671	47.5	516
India 2005-06	22.2	21 948	46.4	5 081	27.6	1 966	89.2	3 343	72.7	2 897
Indonesia 2007	39.9	6 691	32.4	1 664	17.8	595	79.9	1 090	50.3	915
Jordan 2007	34.6	3 940	21.8	1 046	10.2	372	46.0	586	10.9	514
Kenya 2003	49.0	2 562	12.7	607	2.6	204	92.1	394	57.3	307
Lesotho 2004	56.7	1 527	36.4	382	15.2	127	90.2	260	59.5	165
Liberia 2007	63.5	2 210	29.1	486	18.8	180	86.7	289	47.5	310
Madagascar 2003–04	60.5	2 670	67.2	611	48.8	214	90.9	413	64.1	316
Malawi 2004	67.7	4 776	52.8	1 092	26.9	361	97.7	783	80.3	615
Mali 2006	44.1	5 903	37.8	1 458	24.3	524	94.1	1 042	56.1	644
Morocco 2003–04	47.6	2 338	31.0	540	9.9	199	56.5	373	14.7	316
Mozambique 2003	63.6	4 386	30.0	1 065	13.7	358	94.4	682	64.7	549
Namibia 2006–07	65.2	2 121	23.9	475	5.7	184	68.5	331	28.4	249
Nepal 2006	34.2	2 064	53.0	478	30.6	204	97.5	300	95.0	302
Niger 2006	46.1	4 079	13.5	1 032	8.4	335	95.6	750	62.3	442
Nigeria 2003	30.5	2 563	17.2	659	8.7	247	89.9	387	34.1	248
Pakistan 2006–07	24.1	3 621	37.1	955	23.1	318	78.3	595	53.2	302
Peru 2004–06 Continuous	45.6	1 764	62.8	401	51.0	126	75.8	301	43.4	303
Philippines 2008	45.7	2 559	34.0	569	22.6	197	57.7	427	34.2	377
Republic of Moldova 2005	66.1	678	45.5	157	24.6	56	40.8	132	2.4	94
Rwanda 2005	60.8	3 617	88.4	885	79.7	303	96.4	589	77.1	446
Senegal 2005	22.2	4 586	34.1	1 279	14.8	494	93.2	660	41.8	504
Swaziland 2006–07	57.0	1 191	32.3	260	16.7	107	78.4	194	30.7	144
Uganda 2006	39.6	3 424	60.1	789	34.8	269	91.1	546	54.4	460
UR Tanzania 2004–05	57.0	3 639	41.3	837	13.5	277	91.0	545	55.4	482
Viet Nam 2002	53.8	850	15.5	194	7.8	65	81.4	164	27.9	123
Zambia 2007	53.4	2 742	60.9	632	35.0	226	93.8	422	41.7	395
Zimbabwe 2005–06	68.1	2 198	22.2	513	14.3	190	89.9	387	28.4	290

[a] Refers to the number of children in the sample from which the indicator was calculated.
na: information not available.

Infant and young child feeding status by country

Country and survey year	Introduction of solid semi solid or soft foods		Minimum dietary diversity (All children)		Minimum meal frequency (Breastfed children)		Minimum acceptable diet (Breastfed children)	
	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]
Azerbaijan 2006	62.8	129	50.8	631	44.0	219	22.3	219
Bangladesh 2007	71.1	339	12.1	1 729	81.3	1 656	11.3	1 656
Benin 2006	60.6	891	27.5	4 556	49.6	3 976	14.5	3 976
Bolivia 2003	75.4	447	73.6	2 657	51.5	1 987	40.0	1 987
Burkina Faso 2003	36.1	532	14.2	2 813	30.6	2 672	6.0	2 672
Cambodia 2005	81.4	393	29.0	2 220	71.6	1 804	21.7	1 804
Cameroon 2004	68.1	386	50.5	2 150	41.4	1 529	22.9	1 529
Chad 2004	na	287	33.5	1 432	na	1 278	na	1 278
Colombia 2005	na	669	69.0	3 840	na	2 116	na	2 116
Congo (Brazzaville) 2005	na	270	47.7	1 336	na	908	na	908
DR Congo 2007	80.9	421	12.2	2 272	30.4	1 954	3.6	1 954
Dominican Republic 2007	81.1	525	73.2	2 812	57.0	864	43.4	864
Egypt 2008	69.3	703	55.0	3 275	57.9	2 301	37.8	2 301
Eritrea 2002	39.9	323	19.3	1 531	44.2	1 339	12.0	1 339
Ethiopia 2005	46.0	598	3.9	2 865	42.3	2 676	2.9	2 676
Ghana 2008	72.5	147	46.8	826	50.4	691	26.7	691
Guinea 2005	47.1	324	17.5	1 663	30.3	1 518	4.7	1 518
Haiti 2005-06	87.4	288	28.4	1 592	46.3	1 169	16.0	1 169
Honduras 2005-06	84.0	547	64.9	2 853	77.0	1 964	51.9	1 964
India 2005-06	54.5	2 918	11.7	15 066	43.7	13 069	7.1	13 069
Indonesia 2007	87.3	904	64.9	4 612	67.0	3 434	42.2	3 434
Jordan 2007	84.8	493	75.1	2 584	62.4	1 142	46.3	1 142
Kenya 2003	80.6	295	45.2	1 660	58.4	1 392	29.9	1 392
Lesotho 2004	75.4	153	31.4	962	64.3	796	21.0	796
Liberia 2007	55.5	289	22.1	1 465	50.7	1 153	13.0	1 153
Madagascar 2003–04	77.6	341	31.4	1 794	75.8	1 554	25.1	1 554
Malawi 2004	82.9	603	40.2	3 286	49.3	3 075	21.6	3 075
Mali 2006	29.5	679	16.3	3 811	25.1	3 323	6.7	3 323
Morocco 2003–04	86.3	305	65.8	1 631	62.4	796	38.0	796
Mozambique 2003	82.5	566	24.5	2 881	37.8	2 540	9.3	2 540
Namibia 2006–07	82.9	266	31.5	1 340	48.5	841	15.7	841
Nepal 2006	69.7	254	31.3	1 428	82.4	1 393	29.2	1 393
Niger 2006	61.6	533	5.4	2 656	40.7	2 376	3.1	2 376
Nigeria 2003	60.5	352	45.0	1 594	42.9	1 272	20.6	1 272
Pakistan 2006–07	39.2	443	na	2 166	na	1 636	na	1 636
Peru 2004–06 Continuous	81.4	214	81.4	1 277	78.2	916	65.7	916
Philippines 2008	90.7	306	63.2	1 775	81.4	930	49.1	930
Republic of Moldova 2005	78.5	64	83.9	493	76.3	192	60.3	192
Rwanda 2005	46.1	409	27.8	2 356	44.3	2 162	15.9	2 162
Senegal 2005	57.4	619	47.6	2 909	38.7	2 372	21.9	2 372
Swaziland 2006–07	na	157	46.2	767	na	512	na	512
Uganda 2006	74.7	396	23.6	2 249	40.1	1 864	10.6	1 864
UR Tanzania 2004–05	79.6	459	34.3	2 487	48.4	2 108	18.1	2 108
Viet Nam 2002	na	94	na	632	na	431	na	431
Zambia 2007	90.3	315	36.9	1 840	55.5	1 508	24.9	1 508
Zimbabwe 2005–06	91.5	279	21.6	1 483	55.2	1 142	12.7	1 142

[a] Refers to the number of children in the sample from which the indicator was calculated.
na: information not available.

Infant and young child feeding status by country

Country and survey year	Children ever breastfed		Predominant breast-feeding under 6 months		Age appropriate breastfeeding		Bottle feeding		Duration of breastfeeding	
	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]	Per cent	Number[a]	Months	Number[a]
Azerbaijan 2006	86.5	983	69.3	241	22.1	872	58.7	872	7.8	1 444
Bangladesh 2007	98.7	2 347	50.0	483	77.6	2 212	na	2 212	33.2	3 589
Benin 2006	97.7	6 661	50.3	1 519	64.3	6 075	7.3	6 075	21.4	9 686
Bolivia 2003	97.5	3 854	31.5	909	65.1	3 567	38.1	3 567	19.6	5 908
Burkina Faso 2003	98.9	4 303	78.7	1 115	54.8	3 928	1.2	3 928	24.5	6 294
Cambodia 2005	97.2	3 185	33.1	739	72.6	2 960	11.4	2 960	21.0	4 715
Cameroon 2004	96.4	3 321	70.4	788	48.7	2 938	8.2	2 938	17.4	4 890
Chad 2004	98.6	2 335	95.8	633	na	2 064	2.6	2 064	21.3	3 537
Colombia 2005	97.2	5 512	34.6	1 311	na	5 151	56.1	5 151	14.9	8 214
Congo (Brazzaville) 2005	95.9	2 099	73.4	545	na	1 881	5.8	1 881	17.1	3 119
DR Congo 2007	97.5	3 670	58.0	927	61.1	3 199	8.3	3 199	21.0	5 523
Dominican Republic 2007	91.9	4 064	59.1	859	22.6	3 671	83.7	3 671	7.1	6 117
Egypt 2008	96.0	4 659	40.1	1 090	58.8	4 365	11.6	4 365	18.0	6 716
Eritrea 2002	98.4	2 360	46.3	651	57.5	2 183	6.3	2 183	21.8	3 477
Ethiopia 2005	96.8	4 469	38.4	1 142	60.8	4 007	12.7	4 007	25.8	6 548
Ghana 2008	98.6	1 228	33.5	308	70.8	1 134	11.8	1 134	20.2	1 760
Guinea 2005	97.7	2 731	69.6	751	53.5	2 413	3.2	2 413	22.4	3 962
Haiti 2005-06	97.4	2 408	53.9	565	61.6	2 157	19.6	2 157	18.8	3 456
Honduras 2005-06	95.8	3 986	42.9	893	56.2	3 747	47.6	3 747	19.2	6 007
India 2005-06	96.8	21 948	44.1	5 081	64.9	20 147	13.8	20 147	24.4	33 114
Indonesia 2007	95.4	6 691	40.3	1 664	59.6	6 276	30.4	6 276	20.7	9 960
Jordan 2007	94.3	3 940	58.2	1 046	35.6	3 630	44.1	3 630	12.5	5 908
Kenya 2003	96.9	2 562	73.3	607	57.9	2 267	22.1	2 267	20.1	3 702
Lesotho 2004	95.3	1 527	46.4	382	61.8	1 345	21.7	1 345	21.4	2 222
Liberia 2007	96.9	2 210	67.4	486	54.5	1 950	8.3	1 950	19.6	3 348
Madagascar 2003–04	98.7	2 670	30.1	611	76.5	2 405	2.4	2 405	21.6	3 762
Malawi 2004	98.6	4 776	41.8	1 092	78.8	4 379	4.8	4 379	23.2	6 715
Mali 2006	97.1	5 903	60.1	1 458	48.6	5 269	5.1	5 269	20.9	8 693
Morocco 2003–04	95.2	2 338	47.9	540	41.3	2 171	39.7	2 171	14.2	3 508
Mozambique 2003	98.4	4 386	64.9	1 065	64.0	3 946	7.9	3 946	22.1	6 323
Namibia 2006–07	93.3	2 121	61.1	475	47.5	1 815	39.4	1 815	16.8	3 133
Nepal 2006	98.4	2 064	36.4	478	81.1	1 906	3.4	1 906	34.3	3 261
Niger 2006	98.4	4 079	83.7	1 032	52.9	3 688	5.9	3 688	21.4	6 066
Nigeria 2003	98.0	2 563	79.2	659	49.6	2 252	14.5	2 252	18.6	3 815
Pakistan 2006–07	93.8	3 621	42.4	955	46.0	3 121	32.4	3 121	18.9	5 450
Peru 2004–06 Continuous	97.7	1 764	23.5	401	66.8	1 678	41.6	1 678	19.5	2 567
Philippines 2008	89.9	2 559	44.2	569	45.9	2 344	47.8	2 344	14.3	3 823
Republic of Moldova 2005	97.5	678	28.0	157	36.6	650	37.9	650	12.1	1 011
Rwanda 2005	97.9	3 617	4.8	885	79.2	3 240	3.8	3 240	25.2	5 535
Senegal 2005	97.9	4 586	62.4	1 279	54.4	4 187	4.8	4 187	20.1	6 640
Swaziland 2006–07	92.7	1 191	23.5	260	na	1 028	22.2	1 028	16.7	1 751
Uganda 2006	98.4	3 424	23.5	789	70.8	3 038	18.6	3 038	20.5	5 099
UR Tanzania 2004–05	96.2	3 639	49.8	837	69.1	3 324	3.7	3 324	21.1	5 393
Viet Nam 2002	98.1	850	76.9	194	na	826	17.2	826	18.0	1 321
Zambia 2007	97.9	2 742	32.4	632	74.4	2 473	3.1	2 473	20.3	4 019
Zimbabwe 2005–06	98.2	2 198	65.6	513	58.8	1 996	6.2	1 996	18.8	3 220

[a] Refers to the number of children in the sample from which the indicator was calculated.
na: information not available.

ANNEX

Summary of indicator definitions

CORE INDICATORS

Breastfeeding initiation

1. **Early initiation of breastfeeding:** Proportion of children born in the last 24 months who were put to the breast within one hour of birth.

$$\frac{\text{Children born in the last 24 months who were put to the breast within one hour of birth}}{\text{Children born in the last 24 months}}$$

Exclusive breastfeeding

2. **Exclusive breastfeeding under 6 months:** Proportion of infants 0–5 months of age who are fed exclusively with breast milk.

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

Continued breastfeeding

3. **Continued breastfeeding at 1 year:** Proportion of children 12–15 months of age who are fed breast milk.

$$\frac{\text{Children 12–15 months of age who received breast milk during the previous day}}{\text{Children 12–15 months of age}}$$

Introduction of complementary foods

4. **Introduction of solid, semi-solid or soft foods:** Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods.

$$\frac{\text{Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day}}{\text{Infants 6–8 months of age}}$$

Dietary diversity

5. **Minimum dietary diversity:** Proportion of children 6–23 months of age who receive foods from 4 or more food groups.

$$\frac{\text{Children 6–23 months of age who received foods from} \geq 4 \text{ food groups during the previous day}}{\text{Children 6–23 months of age}}$$

Meal frequency

6. **Minimum meal frequency:** Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

   The indicator is calculated from the following two fractions:

$$\frac{\begin{array}{c}\text{Breastfed children 6–23 months of age} \\ \text{who received solid, semi-solid or soft foods the minimum number of times or more during the previous day}\end{array}}{\text{Breastfed children 6–23 months of age}}$$

and

$$\frac{\begin{array}{c}\text{Non-breastfed children 6–23 months of age} \\ \text{who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the previous day}\end{array}}{\text{Non-breastfed children 6–23 months of age}}$$

Summary infant and young child feeding indicator

7. **Minimum acceptable diet:** Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk).

   This composite indicator will be calculated from the following two fractions:

$$\frac{\text{Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day}}{\text{Breastfed children 6–23 months of age}}$$

and

$$\frac{\text{Non-breastfed children 6–23 months of age who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day}}{\text{Non-breastfed children 6–23 months of age}}$$

Consumption of iron-rich or iron-fortified foods

8. **Consumption of iron-rich or iron-fortified foods:** Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

$$\frac{\text{Children 6–23 months of age who received an iron-rich food or a food that was specially designed for infants and young children and was fortified with iron, or a food that was fortified in the home with a product that included iron during the previous day}}{\text{Children 6–23 months of age}}$$

OPTIONAL INDICATORS

Breastfeeding

9. **Children ever breastfed:** Proportion of children born in the last 24 months who were ever breastfed.

$$\frac{\text{Children born in the last 24 months who were ever breastfed}}{\text{Children born in the last 24 months}}$$

10. **Continued breastfeeding at 2 years:** Proportion of children 20–23 months of age who are fed breast milk.

$$\frac{\text{Children 20–23 months of age who received breast milk during the previous day}}{\text{Children 20–23 months of age}}$$

11. **Age-appropriate breastfeeding:** Proportion of children 0–23 months of age who are appropriately breastfed.

    The indicator is calculated from the following two fractions:

$$\frac{\text{Infants 0–5 months of age who received only breast milk during the previous day}}{\text{Infants 0–5 months of age}}$$

and

$$\frac{\text{Children 6–23 months of age who received breast milk, as well as solid, semi-solid or soft foods, during the previous day}}{\text{Children 6–23 months of age}}$$

12. **Predominant breastfeeding under 6 months:** Proportion of infants 0–5 months of age who are predominantly breastfed.

$$\frac{\text{Infants 0–5 months of age who received breast milk as the predominant source of nourishment during the previous day}}{\text{Infants 0–5 months of age}}$$

Duration of breastfeeding

13. **Duration of breastfeeding:** Median duration of breastfeeding among children less than 36 months of age.

The age in months when 50% of children 0–35 months did not receive breast milk during the previous day

Bottle feeding of infants

14. **Bottle feeding:** Proportion of children 0–23 months of age who are fed with a bottle.

$$\frac{\text{Children 0–23 months of age who were fed with a bottle during the previous day}}{\text{Children 0–23 months of age}}$$

Milk feeding frequency for non-breastfed children

15. **Milk feeding frequency for non-breastfed children:** Proportion of non-breastfed children 6–23 months of age who receive at least 2 milk feedings.

$$\frac{\text{Non-breastfed children 6–23 months of age who received at least 2 milk feedings during the previous day}}{\text{Non-breastfed children 6–23 months of age}}$$

Useful resource materials

WHO/UNICEF. *Global strategy for infant and young child feeding*. Geneva, World Health Organization, 2003.
http://www.who.int/child_adolescent_health/documents/9241562218/en/index.html

WHO/UNICEF. *Planning Guide for national implementation of the Global Strategy for Infant and Young Child Feeding*. Geneva, World Health Organization, 2007.
http://www.who.int/child_adolescent_health/documents/9789241595193/en/index.html

The International Code of Marketing of Breast-milk Substitutes. Geneva, World Health Organization, 1981.
http://www.who.int/nut/documents/code_english.PDF

The International Code of Marketing of Breast-milk Substitutes: frequently asked questions. Geneva, World Health Organization, 2008.
http://www.who.int/child_adolescent_health/documents/9241594292/en/index.html

WHO/UNICEF. *Baby-friendly Hospital Initiative: revised, updated and expanded for integrated care*. Geneva, World Health Organization, 2009.
http://www.who.int/nutrition/topics/bfhi/en/index.html

The optimal duration of exclusive breastfeeding: report of an expert consultation. Geneva, World Health Organization, 2001.
http://www.who.int/nutrition/publications/optimal_duration_of_exc_bfeeding_report_eng.pdf

Optimal feeding of low-birth-weight infants: a review. Geneva, World Health Organization, 2006.
http://www.who.int/child_adolescent_health/documents/9241595094/en/index.html

Evidence on the long-term effects of breastfeeding. Geneva, World Health Organization, 2007.
http://www.who.int/child_adolescent_health/documents/9241595230/en/index.html

PAHO. *Guiding principles for complementary feeding of the breastfed child*. Washington, Pan American Health Organization, World Health Organization, 2003.
http://www.who.int/child_adolescent_health/documents/a85622/en/index.html

Guiding principles for feeding non-breastfed children 6–24 months of age. Geneva, World Health Organization, 2005.
http://www.who.int/child_adolescent_health/documents/9241593431/en/index.html

WHO, UNICEF, UNFPA, UNAIDS, FAO, UNHCR, WFP, WB, IAEA. *HIV and infant feeding: a framework for priority action*. Geneva, World Health Organization, 2003.
http://www.who.int/child_adolescent_health/documents/9241590777/en/index.html

Guidelines on HIV and Infant Feeding, 2010. Geneva, World Health Organization, 2010.
http://www.who.int/child_adolescent_health/documents/9789241599535/en/index.html

WHO, UNICEF, UNFPA, UNAIDS. *HIV transmission through breastfeeding: A review of available evidence, 2007 update*. Geneva, World Health Organization, 2008.
http://www.who.int/child_adolescent_health/documents/9789241596596/en/index.html

WHO, UNICEF, WFP, UN-SCN. *Community-based management of severe acute malnutrition: A joint statement*. Geneva, World Health Organization, 2007.
http://www.who.int/child_adolescent_health/documents/a91065/en/index.html

Infant and young child feeding. Model Chapter for textbooks for medical students and allied health professionals. Geneva, World Health Organization, 2009.
http://www.who.int/child_adolescent_health/documents/9789241597494/en/index.html

For more information, please consult
http://www.who.int/child_adolescent_health/en/ and http://www.who.int/nutrition/en/

This document presents data on indicators for assessing infant and young child feeding practices for 46 countries, based on Demographic and Health Surveys conducted between 2002 and 2008. The indicator values were calculated using new and updated definitions published by WHO and partners in 2008; some values have not been calculated before and therefore provide a baseline for tracking progress in infant and young child nutrition in the future. The document is one in a series of three documents on *Indicators for assessing infant and young child feeding practices* issued by WHO that also include Part 1: Definitions and Part 2: Measurement.

For further information, please contact:

Department of Child and Adolescent Health and Development (cah@who.int)
Department of Nutrition for Health and Development (nutrition@who.int)

World Health Organization
20 Avenue Appia, 1211 Geneva 27, Switzerland

Web site: http://www.who.int

ISBN 978 92 4 159975 7