



NOT  
breastfed

# Infant Feeding Area Graphs Interpretation Guide

for infant and young child  
feeding at 0–5 months



Breastmilk +  
solid, semi-solid  
and soft foods



Breastmilk +  
animal milk and/or  
formula



Breastmilk +  
non-milk liquids



Breastmilk +  
plain water only



Breastmilk only  
(exclusively  
breastfed)

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# Data for change

Understanding infant feeding practices in the first 6 months of life is essential for planning early childhood nutrition programmes and monitoring changes over time. The indicator of exclusive breastfeeding among infants under 6 months of age allows us to estimate how many infants are benefiting from this recommended practice. However, it provides no information about how other infants in a given context are being fed – despite the fact that the surveys used to collect these data generate a wealth of information about infant feeding patterns. This guide demonstrates how area graphs can be used to illustrate these different feeding patterns, providing insights into the barriers to exclusive breastfeeding in a given country and how we might respond to them through policies and programmes.

# Introduction

## Infant feeding matters, from the earliest months of life

Exclusive breastfeeding means feeding infants nothing but breastmilk for the first six months of life. Breastmilk alone provides all of the nutrients an infant needs from 0 to 5 months of age, meaning that no other liquid, or food are necessary. Breastmilk carries antibodies that combat disease and protect infants from diarrhoea, acute respiratory infections and other life-threatening ailments.<sup>1</sup>

Exclusive breastfeeding also has a protective effect against obesity and certain non-communicable diseases later in life.<sup>1</sup> Most importantly, exclusive breastfeeding prevents unnecessary deaths. Infants aged 0–5 months living in low- and middle-income countries who are exclusively breastfed have significantly lower risk of dying when compared to those who are feed a mixture of breastmilk and other liquids or foods, or not breastfed (see Figure 1).<sup>2</sup>

Exclusive breastfeeding is the globally recommended feeding practice for infants 0–5 months of age, in all contexts. However, only 44 per cent of the world’s infants are exclusively breastfed,<sup>3</sup> according to the latest 2021 estimates, and although some progress has been made over the last decade, it has been modest.<sup>4</sup> To drive faster progress, we need to know more about the feeding practices that stand in the way of exclusive breastfeeding and respond with policies and programmes that better support mothers and babies in this life-saving practice.

## What can area graphs tell us about infant feeding and who are they for?

Area graphs show how exclusive breastfeeding compares to other inappropriate feeding practices in a given context. They reveal how feeding patterns change as the infant ages and how these patterns can shift within a country or region over time. In comparing two different area graphs, we can also see how feeding patterns vary across different contexts. Given its potential to support nutrition programming, the infant feeding area graph was recently added as a standard indicator in the latest global guidance.<sup>5</sup>

This guide is a tool to help users understand and interpret area graphs about the feeding practices of infants 0–5 months of age. It aims to help stakeholders (policymakers, national authorities and programme managers) visualize the data on infant feeding patterns in a given country or region and identify problematic feeding patterns, highlighting priority areas for action. The guide enables advocacy for policy or programmatic changes that will contribute to increasing exclusive breastfeeding in infants 0–5 months of age.

## Exclusive breastfeeding prevents unnecessary deaths

Infants 0–5 months of age living in low- and middle-income countries **receiving:**

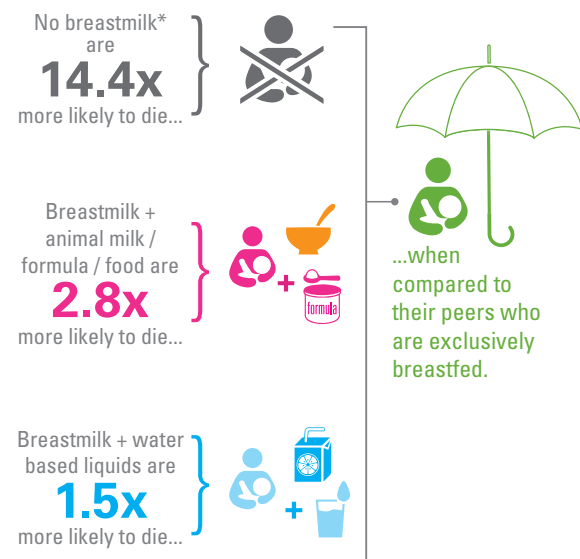


Figure 1

## Definitions of feeding categories\*

### Not breastfed

Children not fed any breastmilk in the last\*\* 24 hours (i.e. never fed or stopped being fed with breastmilk). *Children in this category may have also been fed plain water, non-milk liquids, animal milk/infant formula/animal milk-based yogurt drinks and/or solid, semi-solid and soft foods.*

### Breastmilk + solid, semi-solid and soft foods

Children fed breastmilk **plus** solid, semi-solid or soft food from any food group in the last\*\* 24 hours. This may include grains, meat, eggs, fruits, vegetables, etc. *Children in this category may have also been fed plain water, non-milk liquids and/or animal milk/infant formula/animal milk-based yogurt drinks.*

### Breastmilk + animal milk and/or formula

Children fed breastmilk **plus** animal milk, and/or infant formula, and/or animal milk-based yogurt drinks in the last\*\* 24 hours. *Children in this category may have also been fed non-milk liquids and/or plain water.*

### Breastmilk + non-milk liquids

Children fed breastmilk **plus** non milk liquids (e.g. juice, herbal tea, sweetened water, flavoured water, etc.) in the last\*\* 24 hours. *Children in this category may have also been fed plain water.*

### Breastmilk + plain water

Children that were fed breastmilk **plus** plain water in the last\*\* 24 hours.

### Breastmilk only (exclusively breastfed)

Children that were only fed breastmilk in the last\*\* 24 hours.

\* There is also a "Don't know" category which generally represents infants for whom the main care giver respondent does not know if they received some specific items because, for example, they were not with the infant for long periods of time on the day before the interview. This category should have very few infants in most well-conducted surveys. \*\*The last 24 hours refers to the 24 hours prior to being interviewed in a household survey.

## Constructing the infant feeding area graphs

In order to construct the infant feeding area graphs, data on feeding practices for individual infants are first classified into one of the six categories outlined in the table below, or in some cases, the "don't know" category. Each infant is classified into only one feeding category. The data come from household surveys that collect information on what each sampled infant was fed in the 24 hours before the survey. Full details on this indicator and related data collection and analysis methods can be found in the latest global guidance.<sup>5</sup>







FEEDING CATEGORY	LIQUIDS/FOODS IN THE LAST 24 HOURS				
	Breastmilk	Plain water	Non-milk liquids	Animal milk/infant formula	Solid, semi-solid and soft foods
 <b>Not breastfed</b>	No	Maybe	Maybe	Maybe	Maybe
 <b>Breastmilk plus solid, semi-solid and soft foods</b>	Yes	Maybe	Maybe	Maybe	Yes
 <b>Breastmilk plus animal milk and/or formula</b>	Yes	Maybe	Maybe	Yes	No
 <b>Breastmilk plus non-milk liquids</b>	Yes	Maybe	Yes	No	No
 <b>Breastmilk plus plain water</b>	Yes	Yes	No	No	No
 <b>Breastmilk only (exclusively breastfed)</b>	Yes	No	No	No	No

Table 1: Summary of liquids/food given in the last 24 hours by feeding category

NB: Oral rehydration salts, vitamins, minerals or medicines are not considered part of any feeding category.

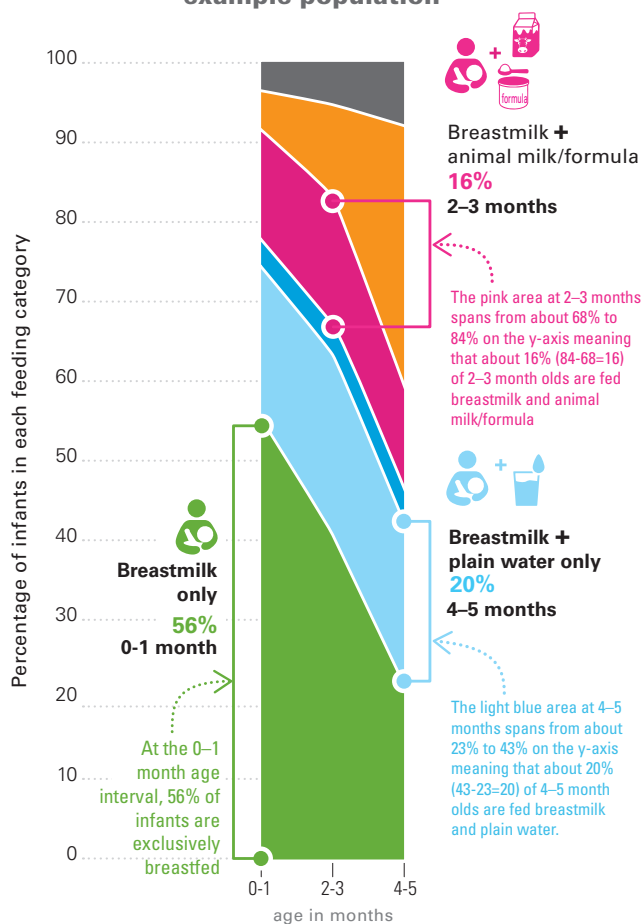
# What do the area graphs tell us?

The colours that have the largest areas or show up most in the infant feeding area graphs represent the most dominant feeding practices. The recommended feeding practice for all infants under 6 months of age is breastmilk only (exclusive breastfeeding), which is represented by the green colour. The more green there is in the graph, the more infants are being exclusively breastfed. The graph on the right below represents an ideal population where the entire bar is green – meaning that all infants aged 0–5 months are only fed breastmilk. The presence of colours other than green highlights practices that should be decreased through policies and

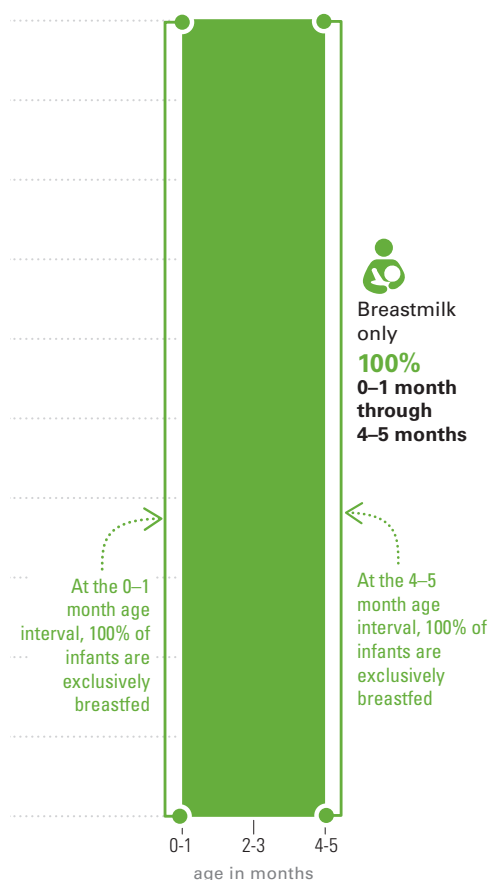
programmes that support women and families to provide infants with breastmilk only.

The area graphs also show how practices change as infants get older, since the x-axis divides the infants into three age groups: the youngest, from birth to 1 month of age on the left side of the bar; the oldest, from 4–5 months of age on the right side; and 2–3-month-olds in the middle. At each age interval, the percentage of infants falling into each category is shown by the distance between the top and bottom boundaries of each area of colour (see example on left below).

Infant feeding area graph for an **example population**

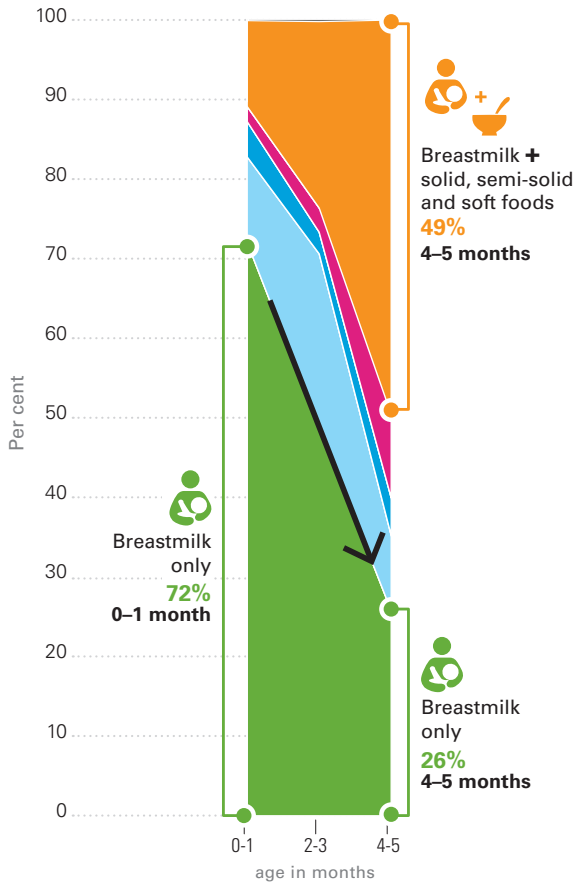


Infant feeding area graph of an **ideal population**



# Exploring country examples

This example shows large changes in two feeding practices as children get older: exclusive breastfeeding, which decreases as children age, and feeding breastmilk together with solid foods, which increases as children age.



**Country A:** The changes in colours that dominate this country example indicate which practices are changing and which are most and least prominent at different ages.

Green is the largest area for the youngest age group (0–1 month), but diminishes by almost two-thirds by the time infants turn 4–5 months of age. Orange, which represents breastmilk plus solid foods, is the second largest area at 0–1 months, and becomes the dominant area by 4–5 months of age. Light blue, which indicates feeding breastmilk and plain water, covers a relatively small area and remains a steady practice across all age groups (i.e., the width of the area remains similar from left to right of the bar). Dark blue and pink are barely noticeable anywhere on the graph, meaning that very few infants in this population are fed with breastmilk plus non-milk liquids or with breastmilk plus animal milk/ formula, at any age.

### Programmatic priorities in this context:

- Protection, promotion and support for sustained exclusive breastfeeding throughout the entire 0–5-month period
- Messaging to discourage the early introduction of solid, semi-solid and soft foods before 6 months of age



Breastmilk only



Breastmilk + plain water only



Breastmilk + non-milk liquids



Breastmilk + animal milk / formula



Breastmilk + solid, semisolid and soft foods



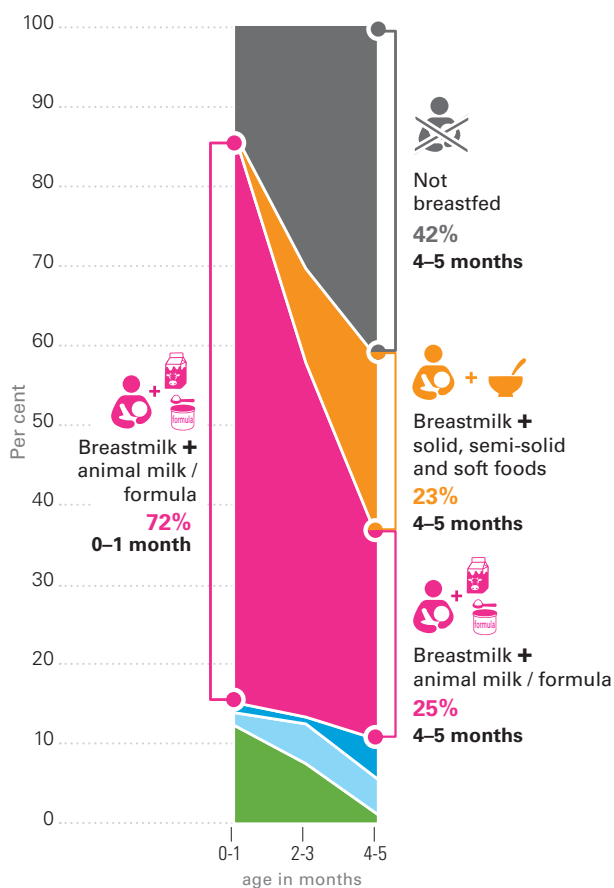
Not breastfed



Don't know



Country B shows a population where a very small proportion of infants are exclusively breastfed at any age (green area is very small and is nearly zero by 4–5 months of age) with use of animal milk and formula starting very early for the majority of infants.



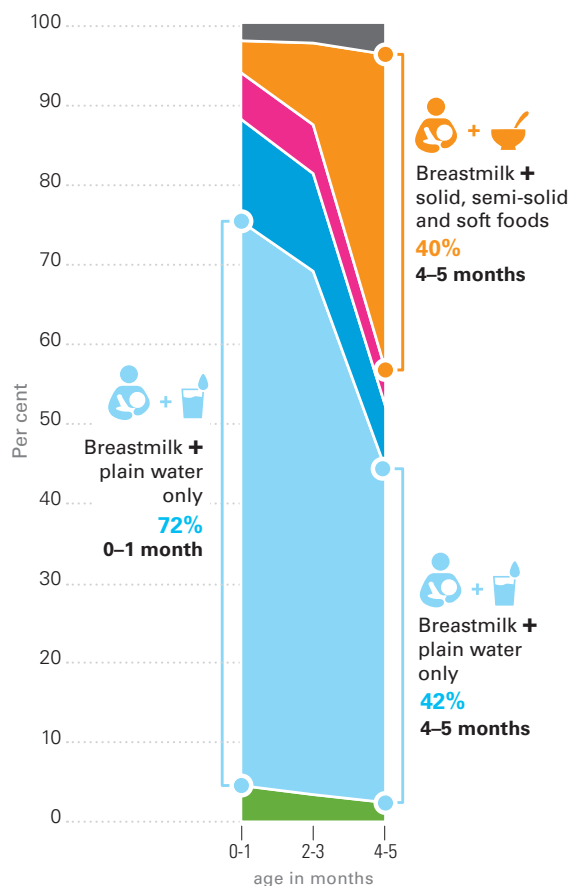
**Country B:** The dominant practices for this population are shown by the pink and grey areas – feeding breastmilk plus animal milk/formula and not being breastfed at all. While nearly 90 per cent of the youngest infants receive breastmilk, animal milk/formula is also fed to almost all breastfed infants at this age. The addition of solid, semi-solid and soft foods to the diets of breastfed infants becomes more prevalent as they get older (orange area becomes larger moving from left to right), and the cessation breastfeeding all together becomes more common (grey area becomes larger moving from left to right of the bar) and is the dominant feeding practice by 4–5 months of age.

**Programmatic priorities in this context:**

- Protection, promotion and support of exclusive breastfeeding from 0–5 months
- Messaging to discourage the feeding of animal milks/formula from birth and throughout the 0–5-month period
- Messaging to encourage the timely introduction of solid foods at 6 months of age and not before



Country C shows a population where almost all infants aged 0–5 months are receiving some breastmilk (grey area is very small), yet a very small proportion are exclusively breastfed at any age (green area is also very small) with the feeding of plain water threatening the survival and development of nearly three-quarters of the youngest infants.



**Country C:** The dominant practice for this population is the feeding of plain water alongside breastmilk, as shown by the very large light blue area from the left to the right side of the bar. The feeding of solid, semi-solid and soft foods to breastfed infants becomes increasingly prevalent as infants age (orange area becomes larger as you move from the left to the right side of the bar), but the feeding of plain water to breastfed infants remains the dominant practice throughout the 0–5 month period.

**Programmatic priorities in this context:**

- Protection, promotion and support of exclusive breastfeeding to 6 months of age
- Messaging to discourage feeding any liquids to infants during this time – including plain water.

**No water for babies:**

**The ‘Stronger with Breastmilk Only’ campaign in West and Central Africa**

The practice of giving water to breastfed infants is common in many countries of West and Central Africa. Indeed, at the start of the campaign in 2019, nearly 7 out of 10 infants in the region received liquids and foods in addition to breastmilk during the first 6 months,<sup>6</sup> threatening child survival, growth and development. To tackle this persistent barrier to exclusive breastfeeding, UNICEF, Alive & Thrive and partners launched a large-scale regional advocacy and social and behaviour change campaign known as ‘Stronger with Breastmilk Only – no water until six months for a healthier baby’, calling on governments, partners, businesses and families to support mothers in giving babies the best start in life.

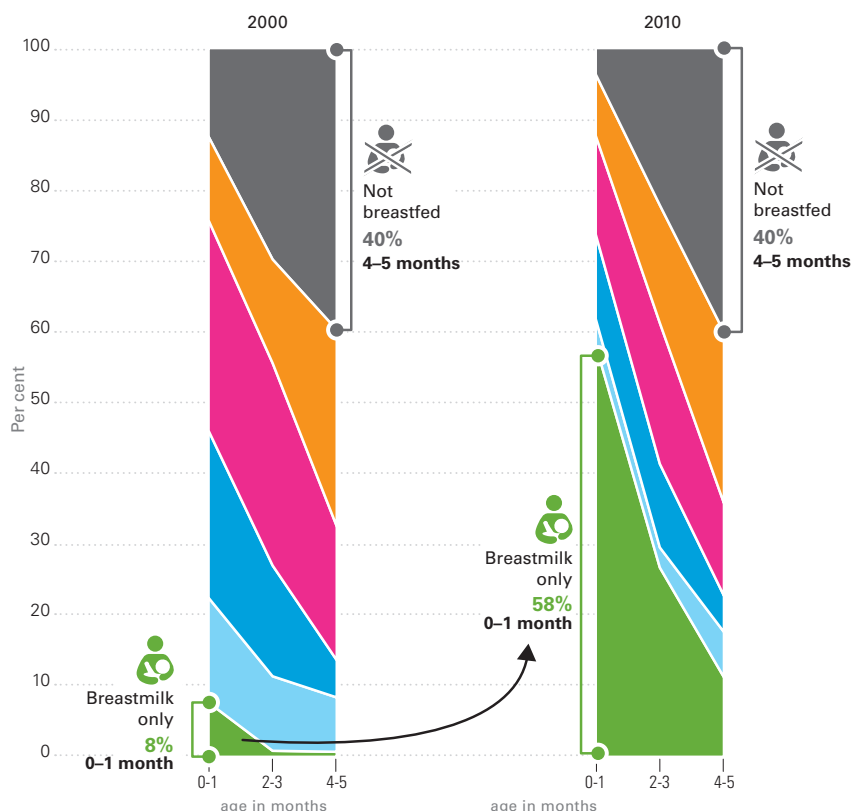


Together, these two graphs show how infant feeding practices have changed over time in Country D. While exclusive breastfeeding prevalence has increased (green area is larger in 2010 than in 2000), the problem of infants receiving solid, semi-solid and soft foods at age 4–5 months has remained similar over time (orange area in 2010 is similar to 2000) and the lack of breastfeeding at 4–5 months was a problem in both 2010 and 2000.

**Country D:** These area graphs show feeding practices in the same country, 10 years apart. The first graph shows a very low rate of exclusive breastfeeding among 0–1-month-old infants (8 per cent). In the second graph, 10 years later, exclusive breastfeeding prevalence among 0–1-month-olds has increased to 58 per cent. However, this is mainly due to a decrease in the feeding of plain water and non-milk liquids, while the feeding of breastmilk and animal milks/ formula or no breastfeeding at all have remained largely the same.

**Programmatic priorities in this context:**

- Protection, promotion and support of exclusive breastfeeding throughout the 0–5-month period
- Messaging to discourage the feeding of animal milks/formula before 6 months of age



# Using area graphs for advocacy

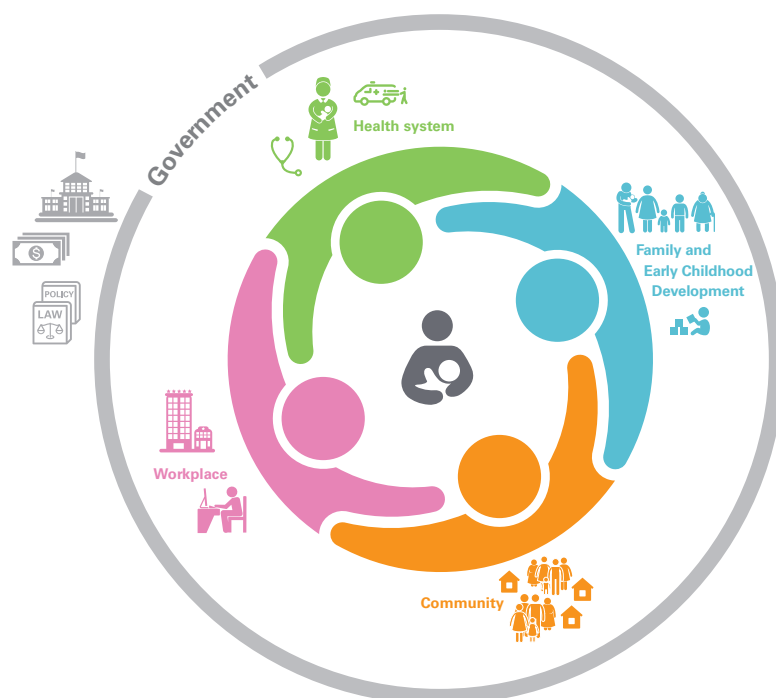
Infant feeding area graphs provide a visual summary of feeding practices among infants aged 0–5 months, including how they change as the infant ages.

They can be used to pinpoint problematic feeding patterns that are preventing more infants from being exclusively breastfed. And they can help policymakers and programmers track changes in feeding patterns over time and make comparisons across countries or regions.

These area graphs can be used to illustrate, identify and communicate factors that could contribute to raising exclusive breastfeeding prevalence. It is anticipated that they will serve as an advocacy tool at the national level to raise awareness of existing feeding practices and contribute to priority-setting. How programmatic priorities are implemented in each country will depend on each specific context, but areas of intervention could include:<sup>3</sup>

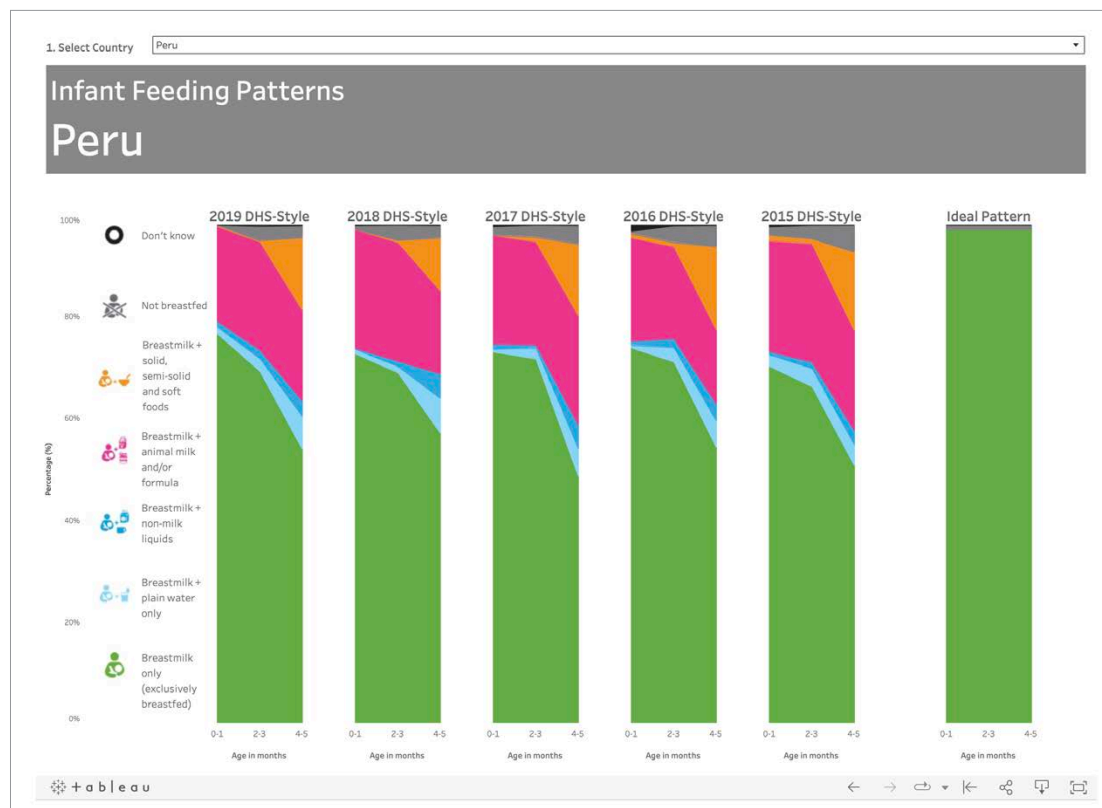
- Strengthening breastfeeding counselling and support services in primary health care through facility- and community-based programmes

- Improving the counselling curriculum for frontline workers to enhance their skills in better supporting mothers and caregivers
- Leveraging social and behavioural change campaigns and strategies to promote exclusive breastfeeding and debunk beliefs favouring mixed feeding practices
- Strengthening the implementation of the Baby-friendly Hospital Initiative to ensure that health facility practices and policies support exclusive breastfeeding.
- Advocating for the adoption and enforcement of national legislation on the International Code of Marketing of Breast-milk Substitutes and related World Health Assembly resolutions
- Advocating for maternity and paternity leave legislation and other workplace policies that support a woman's ability to breastfeed, including when she returns to work.



# How to find your own data for your country

Go to <https://data.unicef.org/resources/infant-feeding-data-dashboard/> website, and click on the Country Profiles, from there click on your country to access the pertinent area graphs. These graphs can be printed out as in the example below:



## References

- Horta BL, Victora CG. *Long-term effects of breastfeeding: a systematic review*. Geneva: World Health Organization; 2013.
- Sankar MJ, Sinha B, Chowdhury R, Bhandari N, Taneja S, Martines J, Bahl R. Optimal breastfeeding practices and infant and child mortality: a systematic review and meta-analysis. *Acta Paediatr*. 2015 Dec;104(467):3-13.
- UNICEF Global Databases. Accessed online, 20 July 2020, URL: <https://data.unicef.org/topic/nutrition/breastfeeding/>
- UNICEF (2019). *The State of the World's Children 2019. Children, Food and Nutrition: Growing well in a changing world*. UNICEF, New York.
- Indicators for assessing infant and young child feeding practices: definitions and measurement methods*. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF), 2021. Licence: CC BYNC-SA 3.0 IGO
- UNICEF (2019) press release – Only 3 out of every 10 babies under six months exclusively breastfed in West and Central Africa, water the main barrier – The 'Stronger With Breastmilk Only' campaign aims to ignite breastfeeding policies and social change to stop giving water to babies under 6 months". Accessed online 21 July 2022, URL: <https://www.unicef.org/wca/press-releases/only-3-out-of-every-10-babies-under-six-months-exclusively-breastfed-west-and-central>

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