

Measuring Infant and Young Child Complementary Feeding Practices: Indicators, Current Practice and Research Gaps

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The publication of the WHO infant and young child feeding (IYCF) indicators in 2008 [1] equipped the nutrition and broader development community with an invaluable tool for measuring, documenting and advocating for faster progress in improving these practices in low- and middle-income countries (LMICs). The indicators, with 5 of them focusing on complementary feeding (CF) practices (box 1), were originally designed for population level assessment, targeting, monitoring and evaluation.

Box 1

List of WHO indicators of CF and the key dimensions they are meant to measure

- 1 Introduction of solid, semisolid and soft foods: optimal timing of introduction of complementary foods
- 2 Minimum dietary diversity: micronutrient adequacy of the diet (diet quality)
- 3 Minimum meal frequency: energy adequacy of the diet
- 4 Minimum acceptable diet: composite indicator combining breastfeeding and CF indicators 2 and 3
- 5 Consumption of iron-rich and iron-fortified foods: adequacy of iron intake

This chapter takes stock of where we are with the existing CF indicators; it reviews how they have been used, what we have learned, and what their strengths and limitations are, and suggests a way forward. We find that the indicators have been used extensively for population level assessments, country comparisons and to track progress. They have also been adopted by researchers for impact evaluations of programs aimed at improving CF practices, and in research seeking to understand the

determinants and consequences of poor CF practices for child growth and development outcomes. By helping generate knowledge and unveiling the severity of the global problem of poor CF practices in LMICs, the indicators have been an invaluable tool for raising awareness and to call for urgent action on improving CF practices at scale.

The indicators have several strengths. They are simple and practical, and therefore suitable for use in large national surveys. They also measure 4 key dimensions of CF practices: (1) timing of introduction of complementary foods, (2) dietary diversity, (3) meal frequency and (4) intake of iron-rich foods. We identified some limitations, however, which include the following:

- *Lack of Validation against the Gold Standard.* With the exception of the minimum dietary diversity indicator, none of the indicators have been validated to test whether or not they reflect the underlying construct they are meant to measure.
- *Subject to Recall Error and Bias.* The indicators rely on maternal recall of child feeding in the previous 24 h; this can result in recall error (due to memory failure) or recall bias (mothers respond based on what they know to be the desired answers, rather than reporting their real practices; this problem can be particularly severe if mothers have been exposed to an education intervention aimed at improving CF practices).
- *Other Measurement Errors and Misclassification.* These relate to the fact that the indicators do not *quantitatively* measure the child's intake of complementary foods, and mothers may report a meal or the child having consumed certain foods even if the amounts were very small (and nutritionally insignificant).
- *Assessment of CF Practices in the Previous 24 h.* Therefore, assessments do not capture usual or long-term practice; this is particularly problematic for CF practices because consumption of complementary foods in young infants is a dynamic process that changes rapidly within short time frames.
- *Focus Is Set on Preventing and Reducing Child Undernutrition, and Indicators for the Prevention of Childhood Overweight and Obesity Are Not Included.*

The CF indicators were originally designed to serve as rough proxies for a few selected CF behaviors that are amenable to being measured in large-scale data collection exercises; they were not designed to reflect the intricacies and complexities of the multiple dimensions of CF practices or to describe usual practices at different ages. However, given the interest and demand for more performance indicators, the time has come to revisit how we can improve and enhance our set of indicators. The chapter provides some recommendations for the way forward, including to revisit the indicators and carry out validation studies and develop approaches to

reduce measurement error; to work on the development of new indicators to reflect some of the dimensions of CF practices that are not represented in the current set of indicators; to develop a simplified, technology-smart 24-hour dietary assessment method to quantitatively measure nutrient intake in children 6–24 months of age for use in research and small data collection exercises, and to include new indicators focused on the prevention of childhood overweight and obesity.

Enormous progress has been achieved since the WHO CF indicators were released in 2008. In the 8 years of their existence, the indicators have made tremendous contributions to enhancing awareness and knowledge about the status of CF practices nationally and globally. This has stimulated unprecedented interest and commitment among nutritionists and the wider development community to renew efforts to tackle the neglected area of CF as one of the critical inputs to accelerate progress in improving child nutrition. More can be done, and we suggest that it is time to reflect and revisit the CF indicators, improve them, develop new ones and promote their appropriate use. Better indicators are critically important to stimulate action and investments in improving CF practices at scale.

Reference

- 1 WHO: Indicators for Assessing Infant and Young Child Feeding Practices. Part 1. Definitions. Geneva, WHO, 2008.