

Measuring Nutrition Service Delivery through Health Facility Surveys

Review of the literature to include measurement of nutrition services as part of the Service Delivery Indicators Survey Program



Financial support for this work was provided by the Government of Japan through the Japan Trust Fund for Scaling Up Nutrition

Background and motivation

Globally, between 2000 and 2017, stunting rates among children under age 5 years declined from 33% to 22%.¹ High-impact nutrition interventions, particularly when delivered effectively and at high coverage in the first 1000 days, contribute to significant reductions in undernutrition and micronutrient deficiencies.² In order to design and implement policy change for large impact in high-burden countries, it is imperative to understand both supply- and demand-side constraints to delivering interventions and improving outcomes. The impact of household (“demand-side”) risk factors on stunting, including unsafe water, sanitation, and hygiene, use of biomass fuels, or non-exclusive breastfeeding practices, have been documented extensively.³ The role of health facilities (the “supply side”) in delivering interventions to prevent and manage malnutrition is equally crucial.

The availability of competent health workers, functional medical equipment, and relevant supplies in health facilities are essential to prevent, diagnose, and manage malnutrition. Health providers play a key role in delivering nutrition services, either as stand-alone services and/or integrated into other health services such as pediatric visits or antenatal care. This includes delivering micronutrient supplements; educating families around maternal nutrition and optimal breastfeeding; age-appropriate counseling on complementary feeding (dietary diversity and frequency); water, sanitation, and hygiene practices; and prevention and treatment of infectious diseases (particularly diarrhea), to name a few. Providers need to be able to accurately weigh and measure children, plot the growth measurements correctly on the appropriate growth charts, interpret the results, and provide appropriate growth promotion messaging to families. Identifying early on if a child’s growth is faltering and providing education to families and treatment is essential to help the child get back on track. Providers must also be able to follow protocols to recognize acute malnutrition, identify complications and provide relevant interventions and referrals. To do this, providers must work in facilities that are stocked with anthropometric equipment, growth charts, micronutrient supplements, treatments for acute malnutrition and infectious diseases, and high-quality record-keeping systems to track growth of children over time. Deficiencies in the required competencies, behaviors, and/or supplies will render a facility ill-equipped to address malnutrition in the population. Assessing the status of service delivery on nutrition is essential to design, develop and track targeted interventions towards malnutrition. At present, there are no measurement tools that capture all these key facility factors.

Measuring nutrition service delivery at health facilities

Technical resources on nutrition services

This document primarily refers to guidelines on nutrition developed by the World Health Organization as these are evidence-based and consider wider geographical, social, demographic and cultural contexts. When it comes to developing a nutrition-sensitive health facility survey, some key resources to consider are the Child Growth Standards by the WHO and the accompanying “Training Course on Child Growth Assessment.”⁹ The course targets the health care providers who measure and assess the growth of children or who supervise these activities. Specifically, it teaches how to measure weight, length and height, how to interpret growth indicators, investigate causes of growth problems and counsel caregivers. In addition, there

¹ UNICEF-WHO-WB Joint Malnutrition Estimates. Available from: <https://data.worldbank.org/indicator/sh.sta.stnt.zs>

² Bhutta et al 2013. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)60996-4](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60996-4)

³ Danaei et al 2016. <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002164>

⁹ WHO Child growth standards: Training course and other tools <https://www.who.int/childgrowth/training/en/>

are the integrated management of childhood illnesses (IMCI) guidelines.¹⁰ The guidelines propose a step-by-step algorithmic approach to treat common childhood illnesses that include assessing the nutritional status of the child. Apart from these two resources, while undertaking this review we referred to other health facility surveys such as the SPA, previous SDI surveys, a World Bank health facility survey in Malawi, and a World Bank health facility survey in Laos. As countries have adapted the international guidelines to their local context, it is essential to understand their context to appropriately tailor the updating of instruments. With this in mind, the national public health services guideline for Guatemala was also included.¹¹

Nutrition-related services in a health facility

The following steps should be undertaken when a child visits a health facility for health services.

A. Assessing a child's health

When a child visits the health facility for an illness or routine preventive visit, the health provider should examine the child for overall health and investigate the history of previous illnesses and earlier preventive visits (IMCI guidelines)⁸. This includes examining the child for palmar pallor (anemia) and edema of both feet (acute malnutrition). The health provider should check if the child is due for a dose of Vitamin A and deworming medication. Finally, the child's previous growth charts should also be examined. The health provider should ask questions of the caregiver about the child's dietary habits, feeding practices, relevant growth and development milestones.

Skills needed: Awareness of the clinical and nutritional guidelines, physical examination

Materials needed: Growth charts and/or health booklet, clinical guidelines

B. Measuring a child's growth

After the assessment, the child's growth should be measured. According to WHO guidelines, there are four metrics on a child's growth – height (length if < 2 years), weight, mid-upper arm circumference (MUAC) and head circumference (also Guatemala guidelines).^{7,10} If the child is under two years, recumbent length should be measured using an infantometer (length board) placed on a flat, stable surface. Height of a child aged two years or older should be measured using a stadiometer (height board) mounted at a right angle between a level floor and against a straight, vertical surface such as a wall or pillar.

Children under two must be weighed naked using the tared weighing procedure along with their caregiver. Those over two years should be weighed alone with minimal clothing on. The weighing scale should have the following features – solidly built and durable, electronic (digital reading), measures up to 150 kg, measures to a precision of 0.1 kg (100g) and allows tared weighing (scale can be re-set to zero – “tared” – with the person just weighed still on it).

MUAC should be measured with a flexible measuring tape wrapped around the mid-upper left arm (between the shoulder and elbow) keeping the arm hanging down the side of the body and relaxed. The mid-point of the left arm between the shoulder and the tip of the elbow should be identified using a string. Head circumference should be measured using a non-elastic tape measure at the level of the frontal and occipital protrusions held above eyebrows and ears with the reading taken at the frontal region.

¹⁰ Integrated Management of Childhood Illness. Chart booklet. Geneva: World Health Organization; 2014

¹¹ Standards of care for Primary and Secondary levels, 2018. Ministry of Public Health and Social Welfare, Guatemala

The health provider must be trained on how to accurately measure the growth metrics. IMCI guidelines recommend the child to have their growth metrics measured for every visit regardless of the nature of their visit – routine or emergency.⁸

Skills needed: Growth measurement

Materials needed: Weighing scale (infant, child and adult), length board, height board, measuring tape, MUAC tape

C. Interpreting growth indicators

Growth indicators are used to assess growth considering a child's age and measurements together. The health provider should plot points for the following growth indicators (length/height-for-age, weight-for-age, weight-for-length/height) on the line graphs included in the growth charts (WHO child growth standards).⁷ The provider should then interpret plotted points for growth indicators and identify normal growth and growth problems. Further, the provider should interpret trends on growth charts, and determine whether a child is growing normally, has a growth problem, or is at risk of a growth problem. Note that there are separate growth charts by gender.

Skills needed: Plotting and interpreting points on growth chart

Materials needed: Growth charts and/or booklets

D. Counselling on growth and feeding

The health provider should inform the caregiver about the child's growth and counsel about feeding, health and safety, and cognitive development. The counseling must be concise, clear and culturally appropriate. For a child that is growing well, appropriate feeding advice must be provided according to the child's age group. On the other hand, for a child with a growth problem (or a trend towards it), the health provider should investigate possible causes and advise on mitigation measures or corrective solutions. The provider should also prescribe medications and relevant vaccines and propose the date for the follow up visit.

If a child is identified as acutely malnourished, he/she may be enrolled in an ambulatory therapeutic feeding program, prescribed ready-to-use therapeutic food (RUTF) and more closely monitored over the course of the following weeks. Cases of severe acute malnutrition (SAM) or malnourished children with co-morbidities should be enrolled in an inpatient treatment regimen or referred to a facility where proper care can be administered.

Based on the country context, there could be additional specific actions. For example, all children between 5 and 10 years should be prescribed weekly iron tablets in Guatemala during their growth monitoring visit. This is recommended as micronutrient deficiency is commonly found among children in Guatemala.¹⁰

Skills needed: Awareness of clinical and nutritional guidelines including counseling

Materials needed: Iron and folic acid, deworming medications, vitamin A, zinc, oral rehydration solution (ORS), ready to use therapeutic food (RUTF), other micronutrient and/or food supplements

Next steps

Using the evidence from this review, the SDI survey tools will be expanded to include sections evaluating both the facility-level availability of the required materials described above (MUAC tape, RUTF, length board, guidelines, etc.) and the skills of health care providers to address childhood nutrition. Specifically, the existing childhood vignettes on diarrhea with severe dehydration and pneumonia will be updated with inclusion of sections on growth measurement and interpretation (with growth charts), and dietary advice. Additionally, a new vignette will be developed on growth monitoring for a child under five years. For all these nutrition-related vignettes, the health provider is required to plot the growth indicators on country-specific growth charts, ask specific questions on the child's growth and counsel the caregiver on appropriate dietary practices. The updated tools and vignettes will be piloted in Guatemala and Madagascar, as well as in Bhutan, in 2020-21 and are expected to be made a routine part of the SDI survey going forward.