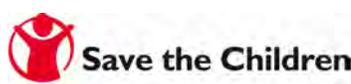


# Nutrition Program Design Assistant: A Tool for Program Planners (NPDA)

Reference Guide

Version 2, Revised 2015



## CORE Group

CORE Group fosters collaborative action and learning to improve and expand community-focused public health practices. Established in 1997 in Washington, DC, CORE Group is an independent 501(c)3 organization, and home of the Community Health Network, which brings together CORE Group member organizations, scholars, advocates, and donors to support the health of underserved mothers, children, and communities around the world.

## Food and Nutrition Technical Assistance III Project (FANTA)

FANTA works to improve the health and well-being of vulnerable individuals, families, and communities in developing countries by strengthening food security and nutrition policies, programs, and systems. The project provides comprehensive technical support to the U.S. Agency for International Development (USAID) and its partners, including host country governments, international organizations, and nongovernmental organizations. FANTA works at both the country and global levels, supporting the design and implementation of programs in focus countries, and building on field experience to strengthen the evidence base, methods, and global standards for food security and nutrition programming.

## Save the Children

Save the Children is the leading independent organization creating lasting change for children in need in the United States and around the world. Save the Children works to ensure the well-being and protection of children in more than 120 countries.



The original tool was made possible by the generous support of the American people through the support of the Office of Health, Infectious Diseases, and Nutrition, Bureau for Global Health, U.S. Agency for International Development (USAID) under terms of Cooperative Agreement No. GHS-A-00-05-00006-00 managed by the CORE Group and Cooperative Agreement No. AID-OAA-A-12-00005 through FANTA, managed by FHI 360.

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The contents are the responsibility of CORE Group and FHI 360 and do not necessarily reflect the views of USAID or the United States Government.

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## Abstract

*The Nutrition Program Design Assistant: A Tool for Program Planners* helps program planning teams select appropriate community-based nutrition approaches for specific target areas. The tool has two components: 1) a reference guide that provides guidance on analyzing the nutrition situation, identifying program approaches, and selecting a combination of approaches that best suits the situation, resources, and objectives and; 2) a workbook where the team records information, decisions, and decision-making rationale.

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the world. We are indebted to them for their commitment and ingenuity in creating, implementing, and evaluating nutrition programs.

We hope that this tool will enhance your own programming efforts and that you will contribute to our growing understanding of the most effective interventions and approaches for improving maternal, infant, and child nutrition.

Sincerely,

Jennifer Burns, Justine Kavle, and Kathryn Reider

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# Acronyms and Abbreviations

BMI	body mass index
CDC	U.S. Centers for Disease Control and Prevention
CMAM	community-based management of acute malnutrition
dl	deciliter(s)
DHS	Demographic and Health Surveys
ENA	Essential Nutrition Actions
FANTA	Food and Nutrition Technical Assistance III Project
g	gram(s)
GAM	global acute malnutrition
GMP	growth monitoring and promotion
Hb	hemoglobin
HFA	height-for-age
HIV	human immunodeficiency virus
IYCF	infant and young child feeding
kcal	kilocalorie(s)
kg	kilogram(s)
KPC	Knowledge, Practice and Coverage Survey
l	liter(s)
LogFrame	Logical Framework
MAM	moderate acute malnutrition
MDD-W	Minimum Dietary Diversity – Women
MICS	Multiple Indicator Cluster Survey
mm	millimeter(s)
MUAC	mid-upper arm circumference
NCHS	National Center for Health Statistics
NGO	nongovernmental organization
NPDA	Nutrition Program Design Assistant
PD/Hearth	Positive Deviance/Hearth
PM2A	preventing malnutrition in children under 2 approach
ppm	parts per million
PRA	Participatory Rapid Appraisal
RRA	Rapid Rural Appraisal
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SBC	social and behavior change
SUN	Scaling Up Nutrition Movement
UNICEF	United Nations Children’s Fund
USAID	U.S. Agency for International Development
WFA	weight-for-age
WFH	weight-for-height
WHO	World Health Organization
µg	microgram(s)
µmol	micromole(s)

# Introduction

Welcome to the Nutrition Program Design Assistant: A Tool for Program Planners (NPDA).

## BACKGROUND

Undernutrition is a serious and persistent problem contributing to 3.1 million child deaths each year and almost half (45%) of all deaths among children under 5 years of age. Undernutrition is an underlying cause of death in at least one-fifth of maternal deaths.<sup>1, 2</sup>

Undernourished children who survive are more vulnerable to infection and have compromised physical growth, impaired cognitive development, and reduced lifetime earnings.<sup>3</sup> Urgent, evidence-based action is needed to improve maternal and child nutrition.

The 2008 *Lancet* series on maternal and child nutrition found that implementing effective, targeted nutrition interventions from pregnancy through 2 years of age (the first 1,000 days), when nutrition has the greatest effect on child health, growth, and development, could reduce nutrition-related mortality and disease by 25%.<sup>4</sup> A follow up *Lancet* series in 2013 found that if 10 proven nutrition-specific interventions were scaled-up to 90% coverage, an estimated 900,000 child lives could be saved and the prevalence of stunting and severe wasting could be reduced by 20% and 61%, respectively.<sup>5</sup>

As the importance of addressing malnutrition has gained attention, global strategies have emerged to promote effective and efficient action to improve nutrition. The Scaling Up Nutrition (SUN) Movement is a globally coordinated, country-led movement to improve

**Nutrition-specific** refers to programs, interventions, and approaches that address the immediate causes of malnutrition, including food and nutrient intake, feeding practices, and disease. Examples include breastfeeding and complementary feeding, dietary and micronutrient supplementation, and disease prevention and management.

**Nutrition-sensitive** refers to programs, interventions, and approaches that address the underlying causes of malnutrition, including food security, care practices, access to health services, and a safe and hygienic environment. Examples include agriculture, early childhood development, water and sanitation, and provision of health services.

The NPDA deals only with nutrition-specific interventions and approaches, but recognizes the need for multi-sectoral action.

<sup>1</sup> Black, R.E. et al. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *The Lancet*. Vol. 382, No. 9890, pp. 427–451.

<sup>2</sup> Black, R.E. et al. 2008. "Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences." *The Lancet*. Vol. 371, No. 9608, pp. 243–260.

<sup>3</sup> Victora, C.G. et al. for the Maternal and Child Undernutrition Study Group. 2008. "Maternal and Child Undernutrition: Consequences for Adult Health and Human Capital." *The Lancet*. Vol. 371, No. 9609, pp. 340–357.

<sup>4</sup> The Lancet. 2008. "Maternal and Child Undernutrition." *The Lancet Special Series*.

<sup>5</sup> Bhutta, Z.A. et al. 2013. "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done At What Cost?" *The Lancet*. Vol. 382, No. 9890, pp. 452–477.

nutrition through the promotion of a coordinated, multi-sectoral approach, in which country representatives/leaders commit to prioritizing nutrition and SUN helps to mobilize support, interest, and investment in nutrition. As of 2014, 54 countries have joined the movement, which is supported by a coalition of partners including international organizations, multilateral and bilateral development agencies, the United Nations, charitable foundations, civil society organizations, nongovernmental organizations (NGOs), researchers, and the private sector. In 2014, the U.S. Agency for International Development (USAID) released a Multi-Sectoral Nutrition Strategy that aligns with the 2025 World Health Assembly Nutrition Targets and reaffirms USAID's commitment to nutrition. The strategy, like the SUN Movement, promotes addressing both the direct and underlying causes of malnutrition and seeks to reduce chronic malnutrition by 20% over the next 5 years in USAID's focus areas of work.

While there is now greater agreement and emphasis on the need to address maternal and child malnutrition within the first 1,000 days, there is less agreement on how to implement evidence-based nutrition interventions and other promising practices to address undernutrition. The NPDA provides a framework for programmers to analyze the nutrition situation and offers guidance so that design teams can choose the most appropriate nutrition approaches based on the specific context and need. Equally important, the tool also helps programmers avoid an approach that would be inappropriate or ineffective in the specific context.

The creation of the NPDA in 2010 and its 2015 update were highly collaborative efforts coordinated by the Food and Nutrition Technical Assistance Project (FANTA), Save the Children (including the Technical and Operational Performance Support (TOPS) Program), and the CORE Group's Nutrition Working Group. The guidance provided here is based on the collective experience of the NGO members of the CORE Nutrition Working Group, local community-based partnership organizations, USAID technical experts, and USAID technical assistance projects, as well as a review of relevant literature. The tool's guidance on approaches, protocols, and cutoff points is based on expert consensus documents such as joint statements made by the United Nations Children's Fund (UNICEF) and World Health Organization (WHO). Because nutrition recommendations, protocols, and best practices evolve and continually improve, some of the recommendations might change over time. However, the principles of using data to design programs based on nutrition needs, applying interventions and approaches that have a strong evidence base, and building the evidence base by continually testing, refining, and documenting new/improved approaches will continue to be applicable.

## PURPOSE

The NPDA is a tool to help program planning teams, including those designing USAID Child Survival and Health Grants Program or Food for Peace Development Food Assistance Program proposals design the nutrition component of their programs and select the most appropriate community-based nutrition approaches for their specific geographic target areas. In addition, the data collected in the NPDA can be used to support the development of a Theory of Change. A simple reference guide and workbook, the NPDA is best used in

collaboration with a range of partners, including ministry staff, community leaders and representatives, and local organizations. The NPDA focuses on the design of preventive programs and is intended for use in areas where there is a high prevalence of stunting and/or underweight in children. The NPDA also provides guidance on recuperative approaches that may be included in preventive programs in areas that also have a high prevalence of acute malnutrition and a very high prevalence of underweight in children.

## USE

The NPDA:

- **Assists in developing programs and/or proposals**, and can also be used in program reviews to reassess the design of nutrition programs that are not making progress.
- **Assists in the development of a Theory of Change**; it can be used to collect and analyze data needed for the development of a theory of change.
- **Provides guidance based on the most recent consensus by experts** on recommended interventions, approaches, protocols, and indicators for community-based nutrition programming.
- **Focuses primarily on preventive programs that address stunting and underweight** and incorporates recuperative approaches to address acute malnutrition when necessary.
- **Emphasizes local community participation and ownership as part of the program design process**: Community ownership and participation—and community-based participatory data collection and assessment tools—are critical to the program design process. Not only is it critical to build in sufficient time and resources for meaningful community participation and community mobilization as part of program implementation, it is important to incorporate the observations and recommendations from community members, local ministries, and implementing partners in the design phase.
- **Facilitates discussion, communication, and decision-making among many stakeholders**: There are many participatory assessment and design tools that have been developed and are used frequently. Some are referenced in the qualitative methods discussion at the beginning of section Step 1, Part II.
- **Focuses on nutrition and health from a food utilization/consumption lens**: A great deal of the NPDA focuses on diet, diet quality, and feeding practices with an emphasis on social and behavior change (SBC) approaches. There is also a brief discussion of food-based approaches that address availability and access issues. However, guidance on developing comprehensive food security programs is beyond the scope of this tool. In addition, while the utilization of a multi-sectoral approach to address malnutrition is critical, it is beyond the scope of this tool to provide guidance on designing multi-sectoral programs. However, the NPDA does provide information on underlying nutrition-sensitive approaches and it is recommended that NPDA users keep in mind

other sectors and underlying factors that may influence malnutrition in the country in which they are working.

- **Is for use in development contexts** and is not appropriate for emergency conditions.
- **Complements other resources**, including the [Technical Reference Materials for the USAID Child Survival and Health Grants Program](#), the [SUN Framework and Roadmap](#), the [USAID Multi-Sectoral Nutrition Strategy](#), and the [Essential Nutrition Actions \(ENA\)](#).

Use of this tool requires dedicated time and focused attention and might take place in a multiple-day program design workshop. In order to get the most out of the workshop, situation analysis data should be collected prior to the workshop. The workshop should offer sufficient time for all participants to discuss the proposed program context and what the situation analysis data indicate and to review/prioritize potential program interventions and approaches. The NPDA will most likely be used once during program design and possibly again during program implementation as part of a program review. There are specific criteria for selection for some program approaches; for others the selection criteria may be more general.

**The CORE Nutrition Working Group encourages programmers to consider a range of approaches that integrate into existing health and nutrition services, that link to other relevant services in other sectors when possible, that are community-centered, and that include a strong emphasis on SBC, rather than selecting single, stand-alone approaches. It is recommended that NPDA users familiarize themselves with the USAID nutrition strategy and the SUN Strategy, Framework for Action, and Roadmap, and reach out to and engage with SUN focal points (if working in a SUN country).**

# How to Use the NPDA

This tool consists of two separate, interrelated documents:

1. Nutrition Program Design Assistant: A Tool for Program Planners: Reference Guide
2. Nutrition Program Design Assistant: A Tool for Program Planners: Workbook

The **Reference Guide**, which you are currently reading, provides an introduction, key concepts, terminology, and reference materials to guide the situation analysis and decision-making on interventions and approaches that are appropriate based on needs, resources, and objectives.

The **Workbook** is for recording the key information, data, decisions, and the decision-making rationale. Detailed questions and text boxes for recording the team's thought process and decisions are included in the Workbook. The tables in the workbook are available as an Excel file that can be downloaded from <http://coregroup.org/NPDA2015> for easy adaptation. Upon completion, the Workbook provides a record of the thought process involved in creating the nutrition program design. With repeated use, it is anticipated that a team would mainly use the Workbook and consult the Reference Guide on an as-needed basis.

## USE OF ICONS



Write your inputs



An example is given



Go to the next section

## ASSUMPTIONS MADE

### Group Decision Making

It is assumed that you will be working through this tool as a team. This tool is designed to assist your program team in progressing through the decision-making steps toward a final consensus on the most appropriate combination of program approaches for the target area. It is organized as a series of questions and discussion points. Questions are designed to challenge your team to think through the relevant points and come to your own conclusions on the best approaches for your geographic area. To get the most value from the NPDA, at least one member of the program design team should have nutrition expertise. If more background information on nutrition is needed, there is an extensive list of resources in Annex 3 to complement the NPDA.

## Geographic Targeting

This tool can be used to develop program approaches for any geographic level—local community, district, province, or national. The level your team chooses should be based upon what is most useful for your planning purposes. The Quantitative Data Collection Tables at the beginning of the Workbook (Step 1, Part I) provides columns for geographic disaggregation of data in case you want to do an initial comparison of needs in making your final decision on the target area. The tool does not provide any additional guidance in geographic targeting, but assumes that your team already has substantial experience in choosing a geographic target area.

## KEY STEPS

### Step 1. Gather and Synthesize Information on the Nutrition Situation

Step 1 provides guidance on gathering and synthesizing data to: 1) determine whether implementation of a community-based nutrition program is warranted in the setting, 2) identify potential causes of undernutrition and key intervention areas, and 3) decide whether the program will focus on prevention-only or prevention and recuperation. Step 1 reviews data on:

- A. Nutritional status (anthropometry)
- B. Infant and young child feeding
- C. Maternal nutrition
- D. Micronutrient status of children
- E. Underlying disease burden

The Workbook provides space for recording the data on each of the relevant indicators, conclusions on level of public health significance based on the tables in the Reference Guide, answers to additional questions for interpreting the data, and your final decisions on whether the specific intervention area should be a priority. Later analysis will help you determine whether you will attempt to address all of the priority areas.

*Result: Determination of program focus (prevention only or prevention + recuperation) and indication of priority intervention areas for addressing nutrition for women, infants, and children.*

### Step 2. Determine Initial Program Goal, Purpose, and Sub-Purpose(s)

Step 2 guides the user to draft an initial program goal, purpose, and sub-purpose(s) based on the conclusions in Step 1, and to note information on other issues such as available funding, community priorities, donor interests, and organizational strengths. The goal, purpose, and sub-purpose(s) drafted in Step 2 will be revisited in Step 6 after collecting and reviewing additional information.

*Result: Initial program goal, purpose, and sub-purpose(s).*

### Step 3. Review Health and Nutrition Services

Step 3 guides the user through mapping what currently exists in terms of:

- National policies and strategies
- Programs and services (implementation, availability, access, demand, and coverage) as well as associated protocols
- Quality of services (strengths, weaknesses, and barriers)
- Availability of materials and equipment, including behavior change communication materials

The Reference Guide provides guidance on collecting this information and the Workbook provides detailed questions and space for recording a summary of the national policy environment and a review of local services.

*Result: Mapping of the existing capacity of local health and nutrition services at the community and facility level to inform subsequent decision making on appropriate nutrition approaches.*

### Step 4. Preliminary Program Design: Prevention

Step 4 provides information on potential preventive approaches to deliver the priority interventions selected in Step 1. Information and guidance on various program approaches is provided in the Reference Guide. Summary tables of common approaches are included for rapid comparison and review. Questions are provided in the Workbook under this step to guide your thinking about assets, gaps, and opportunities.

*Result: List of all potential preventive approaches that could be considered based on an analysis of the needs and assets in the target area.*

### Step 5. Preliminary Program Design: Recuperation

Step 5 provides information on potential recuperative approaches that can be added to the preventive program, as necessary. The Reference Guide describes key components of recuperative interventions to address moderate acute malnutrition (MAM), severe acute malnutrition (SAM), and underweight and summary tables of common approaches that meet key criteria. The Workbook provides questions to guide team discussions and selection of recuperative approaches.

*Result: List of potential recuperative approaches that could be added to the preventive program, based on the situation in the target area.*

## Step 6. Putting It All Together

Step 6 is the final step in the NPDA. In this step, the user proceeds through a series of questions to reassess the initial program goal and purposes, cost out programming options, review key programming considerations, fill out the LogFrame template, and finalize the nutritional program approach.

*Result: Final decision on the combination of nutrition program approaches to propose for the target area.*

# Key Concepts

This section provides a general overview of nutrition concepts, including a review of the causes of malnutrition, key nutrition-specific interventions, approaches including the ENA Framework and evidence presented by the 2013 *Lancet* series, and nutrition-sensitive approaches. A glossary of nutrition terms can be found in Annex 1 of the Reference Guide.

## NUTRITION CONCEPTS

Malnutrition is an abnormal physiological condition caused by inadequate, excessive, or imbalanced intake of nutrients. It includes undernutrition, overweight/obesity, and micronutrient deficiencies. Undernutrition is a consequence of a deficiency in nutrient intake and/or absorption in the body. Different forms of undernutrition, which can appear isolated or in combination, consist of: acute malnutrition (wasting and/or bilateral pitting edema), stunting (chronic undernutrition), underweight (combined form of wasting and stunting), and micronutrient deficiencies. Undernutrition in women is associated with increased risk of maternal mortality and delivering low birth-weight babies. In children, underweight is associated with increased risk of illness and death, as well as compromised cognitive development. Nutrition also interacts with chronic conditions, such as HIV and tuberculosis, and is an important part of care and support programs and programs for prevention of mother-to-child transmission of HIV.

While this guide mainly addresses undernutrition, which is still the main cause of malnutrition in most developing countries, the rising prevalence of overweight and obese populations (along with continued high rates of undernutrition) emerging in developing countries poses a double burden. Countries may be tasked with addressing higher rates of non-communicable diseases and other poor health outcomes associated with overweight and obesity while still battling high levels of undernutrition. Current evidence links obesity to an increased risk of cancer, heart disease, stroke, diabetes, and other chronic diseases. Additional evidence associates maternal overweight and obesity with maternal morbidity, preterm birth, and increased infant mortality.<sup>6</sup> Thus, in some contexts where obesity is an issue, particularly among children and women of reproductive age, action to address overweight will be necessary.

### Causes of Undernutrition

The World Bank identifies malnutrition as the world's most serious public health problem and the single biggest contributor to child mortality.<sup>7</sup> The framework on the next page illustrates the causes of undernutrition and mortality. Undernutrition in children is caused by inadequate dietary intake, disease, or a combination of the two. Underlying these

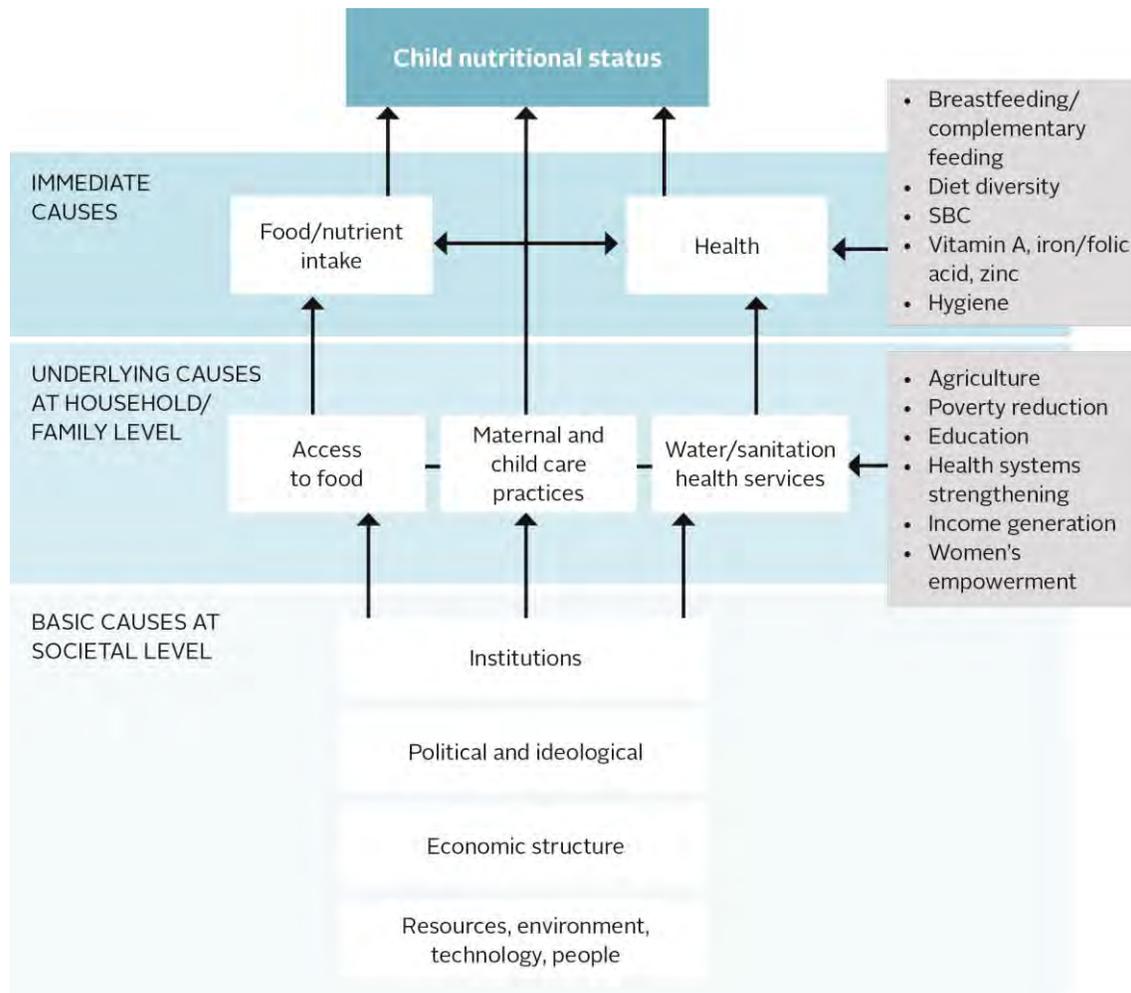
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<sup>6</sup> Black, R.E. et al. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *The Lancet*. Vol. 382, No. 9890, pp. 427–451.

<sup>7</sup> World Bank. 2006. *Repositioning Nutrition as Central to Development: A Strategy for Large-Scale Action*. Washington, DC: The International Bank for Reconstruction and Development/The World Bank.

immediate causes are elements including food insecurity, inadequate care of mothers and children, and poor availability and quality of water, sanitation, and health services. In their efforts to reduce undernutrition, NGOs often work directly on the underlying and basic causes of undernutrition at the community, household, and individual level to improve food security, care practices, health services, and the environment and address social challenges such as gender and other inequities.

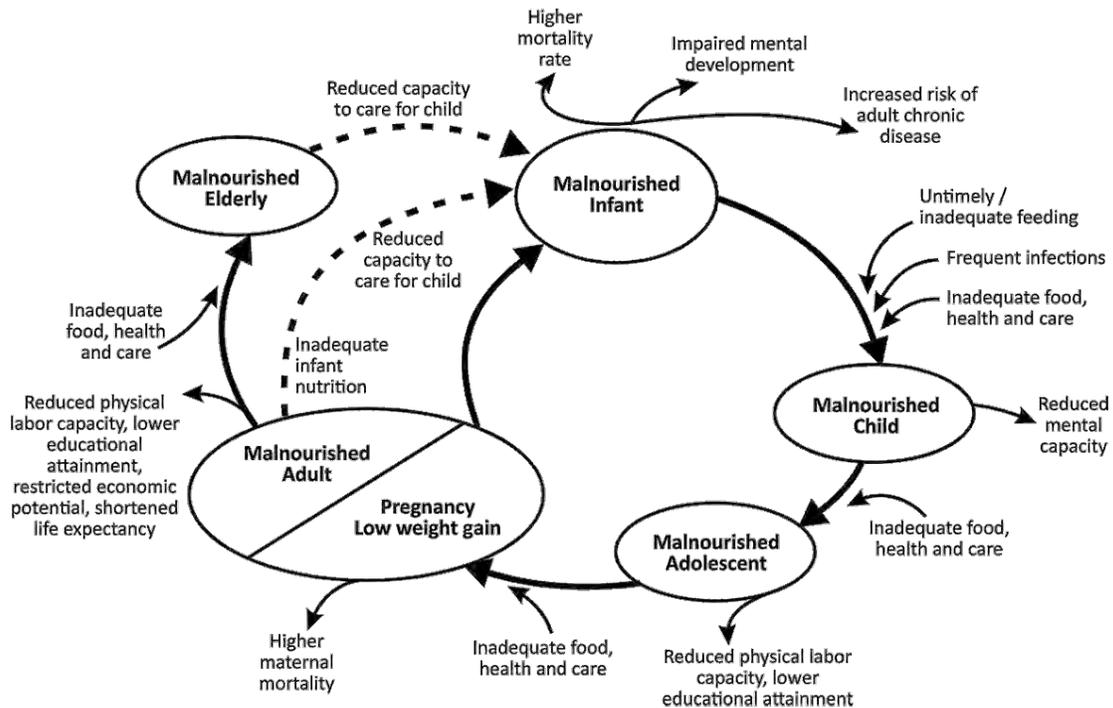
### Causes of Undernutrition



Adapted from Ruel, M. 2008. "Addressing the underlying determinants of undernutrition: Examples of successful integration of nutrition in poverty-reduction and agriculture strategies." *SCN News*. No. 36, pp. 21–29.

## The Life Cycle Approach to Address Undernutrition

Undernutrition begins in the womb and its consequences can carry through to infancy, childhood, adolescence, adulthood, and into the next generation. Undernutrition during pregnancy can lead to the birth of low birth-weight babies and continued childhood undernutrition.<sup>8</sup> The 2008 and 2013 *Lancet* series, SUN Movement, and Essential Nutrition Actions framework promote evidence-based programs, interventions, and approaches that address undernutrition during critical periods in the life cycle including the first 1,000 days (from pregnancy to 2 years of age) and adolescence/pre-pregnancy, which are addressed in this document. The diagram below demonstrates the impact of undernutrition across the life cycle.



Adapted from ACC/SCN. 2000. *Fourth Report on the World Nutrition Situation*. Geneva: ACC/SCN in collaboration with IFPRI.

## Critical Periods to Address Malnutrition

### The First 1,000 Days: Pregnancy to 2 Years of Age

The risk of undernutrition, though present throughout life, is heightened at certain stages of the life cycle, in particular during pregnancy, lactation, and the first 24 months of life. This period, during which children are most vulnerable to undernutrition and the accompanying irreversible deficits in growth and development, also presents a crucial window of time during which undernutrition can be prevented. Because they are growing

<sup>8</sup> UNICEF. 2009. *Tracking Progress on Child and Maternal Nutrition: A Survival and Development Priority*. New York, NY: UNICEF.

so rapidly, children at this age are in greatest need of interventions that promote growth and prevent undernutrition. Focusing on children under 2 years of age with nutrition; health; and water, sanitation, and hygiene interventions presents a great opportunity to intervene, promoting adequate growth and development when they are most able to benefit.

### **Adolescence**

Global evidence highlights the importance of reaching adolescent girls to prevent childhood malnutrition, as early marriage and subsequent early pregnancy is a significant risk factor for adverse nutrition and health outcomes. Pregnancy during adolescence can slow and stunt growth, leading to shorter mothers and an intergenerational cycle of malnutrition.<sup>9</sup> Pregnancy during adolescence also contributes to poor birth outcomes including low birth-weight babies, preterm births, and increased likelihood of maternal mortality.<sup>10</sup>

### **Women of Reproductive Age**

Global evidence also highlights the importance of reaching women to prevent malnutrition before pregnancy to increase the likelihood of a healthy pregnancy and fetal development. Poor maternal nutrition influences the early intra-uterine environment, negatively influencing a child's physical and cognitive growth and development, which can lead to poor health and nutrition outcomes later on in life.<sup>11</sup> Addressing malnutrition in all women of reproductive age, especially adolescents, not only improves their own health, but contributes significantly to the birth of a healthier child.

## **NUTRITION INTERVENTIONS AND APPROACHES**

In this tool, interventions refer to evidence-based behaviors, services, or commodities that prevent or treat malnutrition or save lives. Approaches refer to ways to deliver interventions.

The approaches included in this document focus on improving the nutritional status of children under 5 years of age (and in particular from pregnancy to 2 years of age) and women of reproductive age. There is a strong focus on preventive approaches, with recuperative approaches recommended when needed.<sup>12</sup> The community-based nutrition field and its best practices are continually advancing. The program approaches summarized in the NPDA are those that are commonly used in community-based nutrition and health programs worldwide and have a body of experience attached to them. The

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<sup>9</sup> Rah, J.H. et al. 2008. "Pregnancy and Lactation Hinder Growth and Nutritional Status of Adolescent Girls in Rural Bangladesh." *Journal of Nutrition*. Vol. 138, No. 8, pp. 1505–1511.

<sup>10</sup> Bhutta, Z.A. et al. 2013. "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done At What Cost?" *The Lancet*. Vol. 382, No. 9890, pp. 452–477.

<sup>11</sup> Black, R.E. et al. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *The Lancet*. Vol. 388, pp. 427–51.

<sup>12</sup> Donor funding priorities may favor one approach over another, and it may not always be possible to implement approaches, even if needed.

NPDA presents each approach's objective, a brief description, the target group(s), criteria that must be in place for implementation, defining characteristics, elements that should be in place to enhance the quality of programming, and references for further information. Research on the impact and effectiveness of many of the approaches is ongoing. Programmers may wish to consider research and evaluation activities that can contribute to the body of knowledge.

## Preventive Approaches for Maternal and Child Undernutrition

A preventive nutrition approach is one that targets all members of a vulnerable population, regardless of nutritional status of individual children, to prevent undernutrition and its consequences. Such population-based preventive strategies are recommended for communities that have a high prevalence of undernutrition. Preventive programs are especially important in locations with a high prevalence of stunting, which is often irreversible, and therefore needs to be addressed before it occurs. Good nutrition during childhood is critical as poor nutrition early in life can negatively impact a person's health and cognitive development leading to reduced productivity later in life. Promoting and protecting growth for all children is proven to be more effective at reducing undernutrition in the population than intervening only on an individual basis after a child is already undernourished.<sup>13</sup> Most preventive nutrition programs focus on children during the first 1,000 days when children are growing most rapidly, are most vulnerable to growth faltering, and are most responsive to nutrition interventions. However, a preventative approach may also need to be coupled with a recuperative approach, especially when working in countries with high prevalence of acute malnutrition.

## Recuperative Approaches for Children

Recuperative approaches are those that provide treatment to children who are undernourished, including therapeutic feeding and medical care for children with SAM, and supplementary feeding and medical care for children who with moderate underweight. The purpose is to bring the child back to a normal nutritional status. Even in areas with strong preventive programming, some children will still become undernourished and require specialized treatment. Programs that identify and treat children needing recuperation generally target children through 59 months of age. Recuperative programs are most appropriate in areas with high prevalence of MAM and SAM and very high prevalence of underweight and should be accompanied by a preventative approach.

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<sup>13</sup> This is supported by research conducted in Haiti that compared a preventive approach targeting all children under 2 years of age to a recuperative approach that provided similar services but targeted only undernourished children under 5 years of age. (Ruel, M. et al. 2008. "Age-Based Preventive Targeting of Food Assistance and Behaviour Change and Communication for Reduction of Childhood Undernutrition in Haiti: A Cluster Randomised Trial." *The Lancet*. Vol. 371, pp. 588–595.)

## Essential Nutrition Actions Framework

The [ENA Framework](#) is an operational framework for managing the advocacy, planning, and delivery of an integrated package of preventative nutrition actions on infant and young child feeding (IYCF), micronutrients, and women’s nutrition.<sup>14</sup> The ENA Framework encompasses seven of the proven interventions indicated in the 2008 landmark *Lancet* series targeting the first 1,000 days but also represents a comprehensive strategy for reaching near universal coverage (more than 90%) with these interventions in order to achieve public health impact. ENA programs are implemented through health facilities and community groups.

Implementing the ENA Framework entails building partnerships to promote harmonized messages and approaches. Messages are based on “small doable actions” and promoted using state of the art behavior change communication techniques. The ENA messages can be utilized universally as they are based on scientific research; however they may need to be adjusted slightly to match national guidelines. In addition, the concepts and language used to promote them must be adapted via formative research to ensure their suitability for a country’s specific context. A set of materials available on the CORE website, including the Booklet of Key ENA Messages, ENA Health Worker Training Guide, and the ENA Community Volunteers Training Guide can be utilized to promote and implement the ENA within a country.

The seven essential nutrition actions are:

- 1) Optimal maternal nutrition (especially during pregnancy and lactation)
- 2) Optimal breastfeeding
- 3) Optimal complementary feeding of the child between 6–23 months of age
- 4) Nutritional rehabilitation of the sick child
- 5) The integrated control of anemia in women and children (iron deficiency as well as parasite-related)
- 6) Control of vitamin A deficiency
- 7) Control of iodine deficiency

There are two additional key nutrition interventions that are not currently incorporated in the ENA, but were included in the 2013 *Lancet* series, and may be a consideration for users of this tool. These include 1) calcium supplementation during pregnancy to reduce maternal hypertensive disorders (a leading cause of maternal morbidity and mortality) and preterm birth, and 2) addressing obesity and overweight, particularly before pregnancy, as maternal obesity and overweight are associated with negative birth outcomes.<sup>15</sup> In addition, the ENA are being reviewed and updated. Likely modifications include incorporating the promotion of nutrition for adolescent girls, and identifying specific

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<sup>14</sup> As of early 2015, the 2011 ENA Framework was being updated; a new version may be available.

<sup>15</sup> Black, R.E. et al. 2013. “Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries.” *The Lancet*. Vol. 388, pp. 427–51.

essential hygiene actions that complement the ENA. Additional details on the ENA can be found in Annex 2.

## Nutrition-Sensitive Considerations

While nutrition-specific interventions will work to reduce malnutrition in the short term, sustainable and long-term reductions will only be achieved if the underlying and basic causes of malnutrition are addressed through a multi-sectoral approach that includes a broader set of “nutrition-sensitive” actions. Considering how other sectors and programs influence nutritional status will be critical to creating a sound Theory of Change. Although the NPDA does not provide guidance on designing multi-sectoral programs, the following section highlights some of the sectors and programs that may influence nutritional status in developing country populations. This list is not exhaustive. Other sectors and programs may also be relevant.

### Agriculture

Agriculture provides communities with food, livelihoods, and income, reducing food insecurity, which is an underlying cause of undernutrition. Targeted agricultural programs such as homestead food production (home gardens), animal rearing or livestock production, and biofortification can play an important role in improving household food security and healthy diets. However, the effect of these programs on maternal and child nutrition outcomes is still largely unknown due to poor evaluation studies and the fact that most programs did not originally take nutrition into account in their design, actions, and goals, which has limited their utilization in forming an evidence base. It is believed that if agriculture programs were targeted to reach populations that were nutritionally vulnerable (such as children under five years of age, adolescent girls, and pregnant and lactating women), coupled with water and sanitation and behavior change communication activities, and focused on engaging women and promoting their nutritional well-being and mental and physical health, larger impacts could be seen on nutritional outcomes.<sup>16</sup>

### Social Safety Nets

Social safety net programs usually involve the provision of cash or food transfers. Although current evidence indicates that these programs impact underlying issues surrounding malnutrition such as the use of nutrition services, nutrition knowledge, and resources and self-esteem of women, there is mixed evidence on their impact on maternal and child nutritional status. School feeding programs have shown small effects on school-age children’s anthropometry, but overall there is a lack of evidence on their current impact on child nutritional status (due to similar limitations as described for agricultural interventions). However, with a stronger focus on nutrition through specific goals and

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<sup>16</sup> Ruel, M.T.; Alderman, H.; and the Maternal and Child Nutrition Study Group. 2013. “Nutrition-Sensitive Interventions and Programmes: How Can They Help to Accelerate Progress in Improving Maternal and Child Nutrition?” *The Lancet*. Vol. 382, No. 9891, p. 506.

interventions and the provision of better nutritional services, it is believed that social safety net programs could have a large impact on nutrition outcomes.<sup>17</sup>

### **Early Childhood Development**

Impaired cognitive development and stunting have many of the same risk factors. Some key interventions can protect children from both, including maternal and child nutrition interventions, psychosocial stimulation and responsive parenting, and interventions to alleviate poverty, food insecurity, maternal depression, and gender inequality. Current evidence indicates that early childhood development programs alone do not have a direct effect on nutrition outcomes, but that a combination of early childhood development programs and nutrition programs has shown additive or synergetic effects on both development outcomes and nutritional status.<sup>18</sup>

### **Schooling**

Strong evidence indicates that parental schooling has been consistently associated with child nutritional status, with multiple pathways to link increased parental schooling with more optimal child nutritional status. Schooling may provide information about health and nutrition directly to the parent, it teaches numeracy and literacy which assists caregivers in acquiring information, it exposes individuals to new environments and possibly opens up their receptiveness of modern medicine, it promotes self-confidence which can enhance women's roles and improve interactions with health care providers, and lastly it can provide women with the opportunity to form networks and connections that can lead to improved health behaviors and support. However, in order to capitalize on the opportunities that education and schooling provide, the integration of nutrition-specific education courses into school curriculums should be promoted to more directly impact child nutritional status.<sup>19</sup>

### **Gender**

Gender inequality, manifested in the form of early marriage for women, a lack of decision-making authority in that marriage, and social norms that restrict a women's ability to work and earn money, are significant barriers to improving maternal and child health and nutrition. Early marriage and subsequent early pregnancy is a significant risk factor for adverse nutrition and health outcomes as it contributes to maternal malnourishment and poor birth outcomes including low birth-weight babies, preterm births, and increased likelihood of maternal mortality. Children born to adolescent mothers are often malnourished from birth, continuing an intergenerational cycle of malnutrition. Gender inequality is also reflected in a women's inability to make household decisions, often limiting her ability to make decisions on a multitude of factors that influence her and her child's health including: breastfeeding and complementary feeding practices, food purchases, and care seeking if she or her child is ill. Gender norms that restrict a woman's ability to work and how her work is perceived is an enormous barrier to self-efficacy and

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<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

decision-making ability. Women are often involved in important but unpaid farm work, which undermines a woman's influence in the family structure. In addition, women are often overburdened with household work and child care. All of these factors can contribute to poor maternal and child nutritional status and heavy workloads for women who are pregnant and lactating. Heavy workloads during pregnancy, when women have increased energy needs, can lead to low weight gain and poor birth outcomes such as low birth weight, babies that are small for gestational age, and preterm deliveries.<sup>20</sup> Heavy maternal workloads also often negatively influence infant feeding, health-seeking behaviors, and good hygiene habits such as handwashing.<sup>21, 22</sup>

### **Birth Spacing/Family Planning**

Birth spacing/family planning is an underlying factor that can influence maternal and child malnutrition. By helping adolescent girls to delay pregnancy until they are fully grown, and helping mothers achieve healthy spacing between pregnancies, family planning promotes good nutritional status in both mother and child. Short pregnancy intervals prevent the mother from rebuilding her nutrient stores to healthy, pre-pregnancy levels before the demands of a new pregnancy begin depleting them, increasing risk of anemia and other micronutrient deficiencies. Shorter birth intervals are also associated with: increased risks of neonatal, child, and maternal mortality; higher risk of childhood stunting; a depletion of maternal nutrient status; and poor pregnancy outcomes such as small for gestational age births, which contribute to an intergenerational cycle of malnutrition. In addition, a pregnancy that occurs when the previous child is very young may interfere with a mother's ability to provide optimal child care and feeding practices, including disruption of breastfeeding, putting the older child at risk of undernutrition.<sup>23, 24</sup>

### **Water, Sanitation, and Hygiene**

Another critical element to addressing malnutrition is a lack of access to clean water and sanitation facilities and poor water, hygiene, and sanitation behaviors. A 2013 article examining open defecation and stunting in India found that open defecation, especially in densely populated areas, is a significant contributor to the high levels of stunting in India and provides a strong linkage between poor sanitation and stunting.<sup>25</sup> Poor water, hygiene, and sanitation behaviors and unhygienic conditions in which children live due to a lack of sanitary toilets, open defecation, and living in close proximity to animals, can lead to environmental enteropathy (a subclinical disorder of the small intestine that creates

<sup>20</sup> Herforth, A.; Jones, A.; and Pinstrup-Andersen, P. 2012. *Prioritizing Nutrition in Agriculture and Rural Development: Guiding Principles for Operational Investments*. Washington, DC: The World Bank.

<sup>21</sup> UNICEF and Liverpool School of Tropical Medicine. 2011. *Gender Influences on Child Survival, Health and Nutrition: A Narrative Review*. New York: UNICEF.

<sup>22</sup> van Haefen, R.; Anderson, M.A.; Caudill, H.; and Kilmartin, E. 2013. *Second Food Aid and Food Security Assessment (FAFSA-2) Summary*. Washington, DC: FHI 360/FANTA.

<sup>23</sup> Rah, J.H., et al. 2008. "Pregnancy and Lactation Hinder Growth and Nutritional Status of Adolescent Girls in Rural Bangladesh." *Journal of Nutrition*. Vol. 138, No. 8, pp. 1505–1511.

<sup>24</sup> Maternal Child Health Integrated Program. ND. "Maximizing Synergies Between Maternal, Infant, and Young Child Nutrition and Family Planning."

<sup>25</sup> Spears, D. 2013. *How Much International Variation in Child Height Can Sanitation Explain?* Policy Research Working Paper. The World Bank.

inflammation in the gut and reduces absorption of nutrients), which is caused by the ingestion of large quantities of fecal bacteria.<sup>26, 27</sup> An evaluation of a UNICEF program in Bangladesh found that rural Bangladeshi children who had cleaner water, better toilets, and better equipped handwashing stations had less environmental enteropathy and better growth (height-for-age).<sup>28</sup>

## LET'S GET STARTED!

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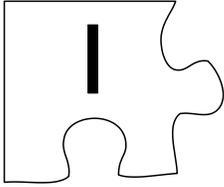
<sup>26</sup> Ibid.

<sup>27</sup> Humphrey, J.H. 2009. "Child Undernutrition, Tropical Enteropathy, Toilets, and Handwashing." *The Lancet*. Vol. 374, pp. 1032–35.

<sup>28</sup> Lin, A. et al. 2013. "Household Environmental Conditions are Associated with Enteropathy and Impaired Growth in Rural Bangladesh." *American Journal of Tropical Medicine and Hygiene*. Vol. 89, No. 1, pp. 130–137.

## STEP 1

### Overview



# Gather and Synthesize Information on the Nutrition Situation

*Step 1 begins on page 2 of the Workbook*

In Step 1 you will identify the areas of key public health significance to ensure that the approaches you select address the areas of greatest need. At the end of this step, your team will reach consensus regarding the overall program focus (prevention or prevention + recuperation) and intervention areas indicated as key public health concerns. In subsequent steps, you will decide whether your team will actually attempt to address each intervention area you prioritize in this step.

This step provides guidance on gathering and synthesizing data in five areas of public health significance:

- A. Nutritional status (anthropometry)
- B. Infant and young child feeding
- C. Maternal nutrition
- D. Micronutrient status of children
- E. Underlying disease burden

The guidance in this section covers:

- Part I. Gathering quantitative information
- Part II. Gathering qualitative information
- Part III. Synthesizing data

## STEP 1

### PART I

# GATHERING QUANTITATIVE INFORMATION

Any good analysis starts with good data. Doing an analysis to determine appropriate nutrition interventions is no different. What is often challenging is sorting through the many potential indicators and types of information to determine which ones your team will use during decision making. Too much data can be as confusing as too little.

Step 1, Part I of the Workbook helps your program to document necessary data. Quantitative Data Collection Tables A-E identify which data are essential to use when prioritizing nutrition intervention areas (the numbered indicators). The tables also include additional indicators that programs may find useful to consider, but that are not specifically addressed in the tool. The indicators are primarily taken from Demographic Health Surveys (DHS); Multiple Indicator Cluster Surveys (MICS); and Knowledge, Practice, and Coverage Surveys (KPC).<sup>29</sup> These indicators are a general guide and represent a minimum set. Your team may gather data from other sources that use slightly different forms of these same indicators (e.g., a different age range), or the donor for your program may have different requirements for indicators. Variations of the indicators are acceptable for the purpose of using this tool and selecting appropriate nutrition interventions.

The essential indicators found in the Quantitative Data Collection Tables in the Workbook are divided into five sections:

Table A: Nutritional status (anthropometry)

Table B: Infant and young child feeding

Table C: Maternal nutrition

Table D: Micronutrient status of children

Table E: Underlying disease burden

### Sources of Quantitative Data

Data can be collected from several different sources. Keep in mind that if disaggregated data are available, they will provide a better understanding of who is most affected based on factors such as age, sex, socioeconomic status, or geographic location. It is also helpful to look at changes over time to better understand trends in nutritional status and program effectiveness. To record disaggregated data use the Quantitative Data Collection Tables and add additional columns as necessary. An easy to manipulate Excel version of the Quantitative Data Collection Tables are available at <http://coregroup.org/NPDA2015>.

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<sup>29</sup> Developed for use by USAID-funded child survival projects, the KPC includes most of the Rapid Catch indicators. All of the Rapid Catch indicators should be included in the baseline survey for programs funded by the USAID Child Survival and Health Grants Program. For Food for Peace development food assistance projects and/or proposals to other donors, there may be some variation in required indicators. The team should select the indicators most appropriate for their project and funding source.

### **Demographic and Health Surveys**

In many countries, a DHS is conducted every five years and the data are disaggregated by geographic regions and other factors. Although this information should not be used as a substitute for a baseline survey or future evaluation of program impact, it can provide information that is useful for analyzing and interpreting the health and nutrition situation in a target area during the program design phase. DHS survey reports can be found at [www.measuredhs.com](http://www.measuredhs.com).

### **Multiple Indicator Cluster Survey**

The MICS, developed by UNICEF, can provide useful information at a national and regional level of the country. MICS were previously done every five years, but now UNICEF provides support to countries every three years. MICS data can be found at [www.childinfo.org](http://www.childinfo.org).

### **Knowledge, Practice, and Coverage Survey**

Good quality local information will come from a KPC if one has been recently done in the target area. Unfortunately, a KPC may not be available to you in the early program design stage since it is generally conducted following the award of a grant. Excellent resources for conducting a KPC with information on sampling, indicators, tabulation, and survey tools can be found at <http://www.mchip.net/node/788>.

### **Ministry of Health National Health Management Information System**

Local Ministry of Health data can be useful, but interpretation must take into account that some health facilities may not regularly provide reports and/or that data come from only those children and women who actually use available health services and may not include more vulnerable women and children with barriers to access. Ministry of Health data provides information on health service delivery, but does not provide a complete picture of the health and nutrition situation for all women and children (both users and non-users). In addition, Ministry of Health systems rarely gather important data on maternal and child feeding practices, which is critical for designing any nutrition approach.

### **Other Local Surveys**

There may be other surveys that have been conducted in the local target area by UNICEF (or other United Nations agencies), national campaigns, NGOs, research institutions, and/or donor agencies.

## STEP 1

## PART II

# GATHERING QUALITATIVE INFORMATION

*Step 1, Part II begins on page 15 of the Workbook*

Qualitative data will further your understanding of the implications of the quantitative data and is key to understanding local practices, beliefs, and cultural norms. Information gathered at this stage for identifying appropriate interventions will help to tailor the program to the local context and to develop implementation strategies. However, programs will likely need to gather more detailed qualitative data during program implementation.

The Food Consumption Summary Table in Step 1, Part II of the Workbook helps to summarize the qualitative food consumption information that the team gathers. NPDA users are encouraged to modify this table, using the Excel file available at <http://coregroup.org/NPDA2015>, or you may use other formats. Program planners should also keep a separate notebook to document additional qualitative data that they collect during interviews and research and use the workbook provided as a summary document for their information (described on the next page).

### Qualitative Data to Collect

Qualitative data will assist the program in better understanding the quantitative data and can also be helpful in thinking through the Theory of Change. The list here summarizes broad categories of qualitative data that can help in nutrition program development. Much of the information will be used in Step 1, Part 3 (where qualitative data may support the synthesis of quantitative data) and Step 3, where indicated. The team should include and note other pertinent qualitative data as appropriate in a separate notebook and include a summary of that information in Step 3 where appropriate.

Categories of qualitative information include:<sup>30</sup>

- **Food consumption practices:** Indicates which food groups are consumed by various target groups, their availability in the market, and their accessibility to people of low socioeconomic status. There is a Food Consumption Summary Table on pages 16–17 of the Workbook to record data.
- **National policies and strategies:** Key elements of nutrition-related policies/strategies that the government has established (e.g., national nutrition policy, community health policy, guidelines on management of SAM, IYCF policy, nutrition and HIV guidelines, and micronutrient supplementation guidelines). This information will be needed in Workbook Step 3.

<sup>30</sup> Many of these categories were drawn from WHO and UNICEF. 1999. *Nutrition Essentials: A Guide for Health Managers*. Geneva: WHO; and Schoonmaker-Freudenberger, K. 1999. *Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA): A Manual for CRS Field Workers and Partners*. Baltimore, MD: Catholic Relief Services.

- **Health programs/services:** Available programs/services; who is implementing them; access, coverage, demand, quality, and strengths and weakness of the programs/services (e.g., staffing, community perceptions of the health services, distance to services, etc.); and protocols associated with the services. This information will be needed in Workbook Step 3.
- **Description of communities:** Social structure of communities and families; infrastructure, including existence of and access to water and sanitation facilities; government (committees, councils, leadership); community buildings; markets; agricultural activities; and information on community decision-making process.
- **Cultural beliefs and practices:** Can cover a range of topics, including child care, IYCF, maternal nutrition, women and men’s roles in family and community, health and health care, education/schooling, etc. The trials of improved practices approach allows mothers to test practices that are new to them through the lens of gaining an understanding of current feeding practices as well as behaviors and barriers to optimal IYCF.
- **Livelihood sources and patterns:** How people provide for themselves and their families; where people access food (home production, purchase, or food assistance); and seasonality of income and food access.
- **Vulnerable groups:** In many communities, there are often groups of people who are more vulnerable than others because of ethnic discrimination, socioeconomic status, geographic location, sex or age of household head, illness, sex, age, or education level. It will be important to find out who are the most vulnerable in any given community and make sure the program is able to meet their needs.
- **External context:** Relative political stability, conflict, and/or natural disaster risk profile.
- **Water, sanitation, and hygiene facilities and practices:** This includes information about access to clean water and adequate sanitation as well as key hygiene behaviors that promote good health and nutrition, including improved handwashing; safe storage and treatment of household drinking water; improved food preparation, serving, and storage; and safe disposal of human and animal feces, among others.

## Sources of Qualitative Data

You may have some recent and good-quality qualitative data to draw upon that has already been collected and summarized, which will save time and resources. Extensive qualitative research resources exist and should be consulted. In many cases, however, programmers will need to conduct their own field-based qualitative data collection, using sample sizes appropriate to qualitative research. Qualitative data may come from the following sources, among others (see Annex 3 for links to qualitative resources).

### Published Reports

Food consumption data, such as that in the Food Consumption Summary Table in the Workbook, can be challenging to find and collect. Information can be obtained from

various sources, including regional and national academic and research institutes, private voluntary organizations/NGOs, and other local surveys and reports (such as information from formative research, trials of improved practices, and barrier analysis reports of IYCF or maternal nutrition practices). DHS occasionally conducts country-level qualitative research to complement quantitative research and the reports may be useful in program design. However, local information is useful in tailoring to your population, and understanding the reasons behind why mothers are feeding children certain foods or beliefs around feeding practices. NPDA users can also refer to market reports to gain qualitative information related to food availability and the diet.

### **Focus Group Discussions**

Focus group discussions provide an opportunity for a structured discussion in a small group to obtain information about perceptions of common practices, beliefs, concerns, and social or group norms. The program design team often conducts their own focus groups with community members and/or obtains information from other sources (such as existing qualitative data collected by other NGOs). Potential focus group participants also include other NGOs active in the area and staff at community health facilities. It is important to have individuals experienced in qualitative methods involved in developing, leading, and analyzing the focus group discussions.

### **In-Depth Interviews**

In-depth interviews allow the researcher to have a detailed, one-on-one discussion with individual members of the target population (e.g., mothers of children under 2 years). The one-on-one interview format may provide a sense of security to the mother, encouraging her to share information that she may be reluctant to share with other mothers present in a focus group. In addition, the in-depth nature of the conversation may provide richer, more detailed information that may be used to complement or provide context to other data.

### **Key Informant Interviews**

Key informant interviews, which are a type of in-depth interview, provide an opportunity to talk in depth with specific individuals knowledgeable about the target group(s) and program areas. Key informant interviews often involve interviews with “community experts” who can provide insight on the nature of the problems in the community and give recommendations for solutions. While focus groups often give the opportunity to gain information on social norms, key informant interviews provide information on individual experiences, practices, and motivations. Your team may wish to conduct their own key informant interviews or obtain information from other sources. Potential key informants include staff of other NGOs active in the area, community leaders, community members, and staff at community-level health facilities.

### **Observations**

Direct observations allow the observer to assess whether knowledge (e.g., the importance of washing hands before eating) is actually practiced. Observations can confirm or contradict what people say; people are often unaware of everything they are actually

doing and therefore are not able to verbalize practices that may become evident through careful, respectful observation.

### **Rapid Rural Appraisals (RRA) and Participatory Rapid Appraisal (PRA)**

RRA and PRA techniques can be useful tools for engaging communities in dialogue to better understand the local situation. A manual on these approaches by Catholic Relief Services defines them as follows.

RRA refers “to a discrete study (or series of studies) in one or more communities. These RRA studies typically last from four to eight days. During this period a multidisciplinary team of researchers looks at a set of issues that are clearly defined by the study objectives. The team works in close collaboration with community members, involving them in all aspects of the collection and analysis of information. Information is collected using a diverse set of tools and techniques that facilitate the participation of community members. The focus is generally on gathering information and ensuring that the information is as rich and as accurate as possible. An RRA generally results in a report that summarizes the research findings. This information can then be used in a variety of ways including program design, improvement of an ongoing program, revision of national policies, etc.”

PRA refers “to a more extended process that involves not only the collection of information but also its eventual use by the community as it plans further activities. The emphasis in PRA is often not so much on the information as it is on the process and seeking ways to involve the community in planning and decision making. If an RRA is a discrete study, a PRA is an extended process that can last for months or years as communities develop their own skills needed to address issues, analyze options, and carry out activities.”<sup>31</sup>

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<sup>31</sup> Schoonmaker-Freudenberger, K. 1999. *Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA): A Manual for CRS Field Workers and Partners*. Baltimore, MD: Catholic Relief Services. p. 9.

## STEP 1

# SYNTHESIZING DATA

## PART III

*Step 1, Part III begins on page 18 of the Workbook*

In Step 1, Part III, the team will review and synthesize the quantitative and qualitative data gathered. First, record the pertinent quantitative and qualitative data from Parts I and II into Tables A–E in Part III of the Workbook. Once you have done so, review the data synthesis guidance for Sections A–E in Part III of this Reference Guide (below). Discuss the implications with your team and determine priorities based on the level of public health significance. It is important to remember that these are not straightforward decisions. Discuss the interpretation of the data as a team before making final decisions. Base your decisions on the data, and debate the appropriate interpretation of that data for the program site.

### Section A. Synthesizing Data on Nutritional Status (Anthropometry)

Prevention of undernutrition should be a program priority. In addition, children who are malnourished require treatment to prevent illness, death, and other negative consequences of undernutrition. In this section, you will discuss the anthropometric data gathered on stunting, underweight, MAM, and SAM, and determine whether the program will focus on prevention only (with referral to health services for children needing treatment) or add recuperative approaches.

#### Guidance for Data Synthesis

WHO provides a categorization of the public health significance of anthropometric indicators. Consider the cutoffs below along with the answers to the questions in the Synthesis of Data section of Section A to determine if prevention interventions and approaches are called for and whether recuperative interventions are needed to complement preventive interventions.

## WHO Categorization of the Public Health Significance of Undernutrition Indicators<sup>32</sup>

Indicator	Level of Public Health Significance <sup>33</sup>			
	Low	Medium	High	Very High
<b>A1.</b> % stunted (height-for-age < -2 z-scores)	< 20	20–29	30–39	≥ 40
<b>A2.</b> % underweight (weight-for-age < -2 z-scores)	< 10	10–19	20–29	≥ 30
<b>A3.</b> % of children ____ to ____ months of age that are moderately wasted (weight-for-height < -2 and ≥ -3 z-scores) <sup>34</sup> <b>Alternate indicator:</b> % of children 6–59 months with mid-upper arm circumference (MUAC) < 125 mm and ≥ 115 mm	< 5	5–9	10–14	≥ 15
<b>A4.</b> % of children __ - __ months of age with SAM (weight-for-height < -3 z-scores, bilateral pitting edema, or MUAC < 115 mm) <sup>35</sup>	–	> 0.5%	≥ 1%	–



If you have determined that a preventive or preventive + recuperative community-based nutrition program is necessary, record your answer and rationale in the Conclusion and Summary Box in Section A of the Workbook and proceed to Section B. Infant and Young Child Feeding Practices. If you have determined that a community-based nutrition program is not necessary, then the team may stop here and look at other priority areas for improving child health.

<sup>32</sup> These are based on the National Center for Health Statistics (NCHS) Standards.

<sup>33</sup> WHO Expert Committee. 1995. *Physical Status: The Use and Interpretation of Anthropometry*. Technical Series Report No. 854. Geneva: WHO.

<sup>34</sup> The reference for public health concern is for weight-for-height < -2 z-scores and not just moderate wasting, so please also add the prevalence from A4 to obtain the public health significance level. The reference is also not reflective of mid-upper arm circumference (MUAC) as there are currently no public health significance cut-offs for MUAC.

<sup>35</sup> Severe wasting is often used to determine population-level prevalence of SAM because wasting data is more likely to be available at the population level than MUAC or bilateral pitting edema. The SAM cut-offs listed here are not internationally established. They are a programmatic guideline to indicate that if there is a significant number of cases, or indication that cases might increase, organizations should consider taking action to support the health system to handle the caseload. The age range for measuring MUAC in children is 6 months and older.

## Section B. Synthesizing Data on Infant and Young Child Feeding Practices

At this point the team should discuss the data gathered on IYCF practices in Part I of the Workbook to determine whether IYCF is a priority intervention area. Prioritization within the subcategories of IYCF (breastfeeding, young child feeding, and feeding of sick children as outlined in the ENA) will influence other aspects of program design.

### Guidance for Data Synthesis

In practice, programs seek to achieve targets of at least 80% or more of the target population practicing a recommended behavior. **Any recommended behavior (e.g., exclusive breastfeeding) practiced below an 80% cutoff is generally considered to be a nutrition priority. Any negative behavior (e.g., pre-lacteal feeding) would be considered to be a nutrition priority if practiced by more than a 20% cutoff.**<sup>36</sup> When several behaviors are classified as nutrition priorities and the program does not have the resources to address all of them, design teams will prioritize them relative to each other, considering which behaviors will have the largest impact on children's health and nutrition and are most feasible to change, and focus on those higher priorities during program design. Discuss as a group whether to designate behaviors as low, medium, high, or very high public health significance.

The following tables are examples of data synthesis, based on DHS data, for Section B. The comments, level of public health significance, and subsequent synthesis of data provide a model for the level of information and agreement that should come out of your group discussion.

In addition, teams should review the qualitative information available to them to better explain and understand of the issues underlying the quantitative data. This understanding should be woven into the synthesis of data to present the most accurate description of the situation possible.

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<sup>36</sup> ENA approach aims to achieve at least 80% coverage at national or sub-national scale (Acharya, K. et al. 2004. *Using ENA to Accelerate Coverage with Nutrition Interventions in High Mortality Settings*. Washington, DC: BASICS II Project).



## Example of Prioritizing Indicators of IYCF Practices

### EXAMPLE OF ANALYZING DATA ON IYCF

INDICATOR	DATA	COMMENTS ON DATA	LEVEL OF PUBLIC HEALTH SIGNIFICANCE
<b>B1.</b> % of children born in the last 24 months who were put to the breast within one hour of birth	35.1%	<i>Most were to the breast within 24 hours</i>	HIGH
<b>B2.</b> % of children 0–23 months of age who received a pre-lacteal feeding	67.5%	<i>Strong local beliefs and practice of giving herbal tea</i>	HIGH
<b>B3.</b> % of infants 0–5 months of age who are fed exclusively with breast milk	60.1%	<i>Plain water is the most common item consumed in addition</i>	MEDIUM/HIGH
<b>B4.</b> % of children 12–15 months of age who are fed breast milk	<i>not available</i>	<i>Median duration: 21 months</i>	<i>Unknown at this time—will need to conduct further investigation as part of formative research</i>
<b>B5.</b> % of infants 6–8 months of age who receive solid, semi-solid, or soft foods	<i>not available</i>	<i>Introduction of foods is often delayed, according to key informants</i>	<i>Unknown—will need to do further investigation as part of formative research</i>
<b>B6.</b> % 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) a minimum number of times or more (two times for breastfed infants 6–8 months, three times for breastfed children 9–23 months, and four times for non-breastfed children 6–23 months)	39.2%	<i>6–11 months: 28% 12–27 months: 43% 18–23 months: 47%</i>	HIGH
<b>B7.</b> % of children 6–23 months of age who receive foods from four or more of seven food groups (grains, roots, and tubers; legumes and nuts; dairy products; meat, fish, and poultry; eggs; vitamin-A rich fruits and vegetables; and other fruits and vegetables).	48.7%	<i>Majority of diet is staple food</i>	HIGH
<b>B8.</b> % of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk). The indicator is a composite of minimum dietary diversity and minimum meal frequency.	32%		HIGH
<b>B9.</b> % of sick children 0–23 months of age who received increased fluids and continued feeding during diarrhea in the two weeks prior to the survey (note: fluid is breast milk only in children under 6 months)	32.3%		HIGH
<b>B10.</b> % of children 6–23 months of age with diarrhea in the last two weeks who were offered the same amount or more food during the illness	<i>not available</i>		<i>Unknown, but based on the small number offered more fluids, this practice may be a problem</i>

## EXAMPLE OF SYNTHESIS OF DATA ON INFANT AND YOUNG CHILD FEEDING

**Are there any patterns among the indicators? Are you aware of any other considerations, such as seasonal variations in food security, trends over time, aggravating factors (e.g., conflict, weather, disease outbreaks), or the potential for increased risk in the immediate future?**

*The data collected above indicates that poor IYCF practices are likely contributors to undernutrition. Trend data indicate that poor IYCF practices such as low levels of immediate breastfeeding after birth and the provision of pre-lacteals (tea and water) have not changed in decades, most likely indicating strong cultural beliefs in those practices. Formative research will be needed to understand how to best address those longstanding suboptimal practices. In addition, food consumption data indicates that poor dietary diversity may be due in part to seasonal variations in food security, with fewer nutrient-rich foods available during the winter. Different programming may therefore be needed during the winter months to address the lack of nutrient-rich food access.*

**Do any of the indicators or practices concern you more than others? If so, which and why? (Qualitative information may be useful here as well)**

*All of the indicator results in the table above fall significantly below the 80% cutoff and highlight that poor IYCF is a cause for concern and a likely contributor to high levels of undernutrition in the area.*

- **Among recommended breastfeeding practices?** *The very important practices of early initiation and exclusive breastfeeding are definitely suboptimal. While we do not know how many children 12–15 months of age are still fed breast milk, we do know that median duration is 21 months, so it looks like many women continue breastfeeding.*
- **Among recommended complementary feeding practices? (Note: any available information on quality and consistency/texture/thickness of complementary foods would be useful here, too)** *The age of introduction of complementary foods is unknown, but key informant data indicate that complementary foods are introduced later than 6 months of age and published in-depth interview reports indicated that mothers felt children were not ready for semi-solid foods, which was reinforced by the views of the grandmother.*
- **Among recommended practices for feeding of the sick child?** *Practices regarding feeding of sick children seem to be lacking overall and there is opportunity to improve these practices. Formative research will be important to further understand the barriers to optimal practices in this area.*

**Looking at the detailed Quantitative Data Collection Table and the qualitative data you gathered in Parts 1 and 2, is there any additional information to take into consideration when understanding the nutrition situation related to infant and young child feeding?**

*The sex-disaggregated data show little difference between boys and girls. However, in the DHS report there are geographic differences, with the southern districts having much lower rates of exclusive breastfeeding and higher rates of pre-lacteal feeds than the eastern districts. Cultural differences may explain this, as the districts are of different ethnic groups, and further formative research should be done to explore this topic. Additionally, the southern area is more urban, and according to qualitative data, mothers routinely leave their children in the care of older siblings while they work outside the home. Finally, practices do vary a bit by socioeconomic group, with poorer mothers much less likely to provide the minimum number of solid or semi-solid foods than wealthier mothers. Formative research will need to focus on better understanding these differences.*

**Are there any marginalized or vulnerable groups that might need extra attention or specific strategies to reach them? If so, describe who they are and why they are vulnerable.**

*In the aftermath of the war, there are many households that are female-headed or youth-headed that have less access to resources than those headed by an adult male. Women, in general, have fewer rights than men and are frequent victims of violence. Qualitative interviews with women indicated reduced access to land that they farmed while their husbands were alive, with in-laws now farming the land and sharing resources in a limited way with the women and their children.*

**How do community or household gender issues and cultural or religious factors affect the overall nutrition situation related to infant and young child feeding?**

*Drawing from qualitative data collected by our data team, we have learned that women are vulnerable and tend to have little voice, and as mentioned above have fewer legal rights than men and are subject to frequent violence. In households, women have many responsibilities, yet need permission (from the male head or other designated male family leader) to take their children to health services or attend the market. The program will need to be sensitive to these challenges.*

**How do other factors (if present) such as alcoholism, maternal depression, domestic violence, etc. affect the overall nutrition situation related to infant and young child feeding?**

*Recent DHS data indicate that domestic violence against women continues to be a large problem. A recent article on intimate partner violence and child undernutrition indicates that maternal exposure to violence is related to child underweight and stunting. Due to the high levels of domestic violence, formative research will be needed to better understand how maternal exposure to violence may influence child care and feeding practices and children’s nutritional status.*

**Other thoughts?**

*In terms of early initiation, most babies were at the breast within 24 hours, so there is hope to improve this practice to have them feeding sooner (closer to one hour). The two geographic areas are a bit different and the strategy will need to be tailored.*

**EXAMPLE OF CONCLUSION ON THE SYNTHESIS OF DATA ON INFANT AND YOUNG CHILD FEEDING**

**Are interventions in IYCF indicated? Check all areas that apply:**

**Breastfeeding:**  Immediate initiation  Preventing use of pre-lacteals  
 Exclusive breastfeeding  Continued breastfeeding

**Complementary feeding:**  Timely introduction  Diversity  Frequency

**Feeding of sick children:**  Offered more fluids during illness  
 Offered same or more food during illness  Offered more after illness

**Notes on other considerations/additional info needed?**

*Qualitative data collected by our data team indicates that diet quality may also be an issue, with a large number of children eating several servings of sugary foods throughout the day instead of more nutritious snack options. The program will need to address diet quality among young children.*

## EXAMPLE OF SUMMARY RATIONALE FOR THE CONCLUSION ON THE SYNTHESIS OF DATA ON INFANT AND YOUNG CHILD FEEDING

*At a glance, the information in this table indicates that suboptimal infant and young child feeding practices are a serious issue and that the program's design should include interventions and approaches to improve these practices. More in-depth formative research will follow in the program.*

*All of the IYCF indicators in the table above are significant. Although exclusive breastfeeding in children 0–5 months of age is relatively higher at 60.1%, it is such an important and life-saving practice for child nutrition that the team gave this a medium/high level of priority for emphasis. As it appears that the ENA of providing sick children with increased fluid during illness is very low (32%) feeding practices during illness should be looked at very carefully when formative research is being carried out in the program. Because feeding of sick children is problematic, we reviewed data on key childhood illnesses and found high rates of diarrhea in both districts, meaning that optimal feeding of the sick child, in addition to preventing diarrhea, will be crucial to improving children's nutritional status.*

*DHS survey results indicated that in the eastern districts, exclusive breastfeeding and pre-lacteal feeds will be of higher priority than they are in the south, and the program, in general, must reach those who influence and support women's decisions on how to feed their children. In researching barriers to optimal feeding, we will need to carefully examine socioeconomic status and see how this affects feeding decisions.*

*Because there does not seem to be one key practice of concern to focus on, but rather many, it looks like a comprehensive IYCF strategy focused on multiple behaviors at multiple contact points may be developed for this program. However, to truly achieve behavior change, the program will focus on key priority behaviors in which improvements are achievable, including: exclusive breastfeeding, avoidance of pre-lacteal feeds, quality and quantity of complementary foods, and feeding of sick children.*



After recording your rationale in the Workbook in Section B, proceed to Section C. Maternal Nutrition.

## Section C. Synthesizing Data on Maternal Nutrition

At this point, the team will discuss the data gathered on the nutritional status of newborns and women and determine whether this is a priority intervention area. Use the following guidance to determine the public health significance of maternal nutrition in your program area. Then, answer the questions in the Workbook for Section C to determine if (and what) interventions are most appropriate related to maternal nutrition.

### Guidance for Data Synthesis

#### WHO Classification of Public Health Significance of Low Birth Weight<sup>37</sup>

Indicator: Anthropometry	Public Health Significance IF PREVALENCE IS...
<b>C1.</b> % of newborns with low birth weight (< 2,500 grams) <b>Alternate Indicator:</b> % of newborns with low birth weight (mother’s report of baby being “very small at birth”)	≥ 15%

**Note:** Data on the prevalence of low birth weight may be difficult to interpret because it often represents only those children born in local health facilities. If available, complement with the percent of hospital-based deliveries. DHS also asks mothers interviewed to retrospectively categorize the size of their last born as being “very small,” “smaller than average,” or “average or larger.” If possible, program planners should look at information from both indicators.

#### WHO Classification of Public Health Significance of Low Body Mass Index (BMI) and Stunting<sup>38</sup>

Indicator: Anthropometry	Level of Public Health Significance			
	Low	Medium	High	Very High
<b>C2.</b> % of non-pregnant women of reproductive age (15–49 years) with low BMI (< 18.5)	5–9.9%	10–19.9%	20–39.9%	≥ 40%
<b>C3.</b> % children stunted (height-for-age < -2 Z-scores)	< 20%	20–29%	30–39%	≥ 40%

**Note:** the above is based on BMI in adult population and is applied here to women.

#### WHO Classification of Public Health Significance of Vitamin A Deficiency<sup>39</sup>

Indicator: Vitamin A	Level of Public Health Significance			
	Normal	Low	Medium	High
<b>C4.</b> % of women of reproductive age (15–49 years) with vitamin A deficiency (serum retinol values ≤ .70µmol/l)	< 2%	2.0–9.9%	10.0–19.9%	≥ 20%

<sup>37</sup> WHO Expert Committee. 1995. *Physical Status: The Use and Interpretation of Anthropometry*. WHO Technical Report Series #854. Geneva: WHO.

<sup>38</sup> Ibid.

<sup>39</sup> WHO. 2009. *Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995–2005*. WHO Global Database on Vitamin A Deficiency. Geneva: WHO.

## Classification of Public Health Significance of Severe Vitamin A Deficiency and Program Coverage

Indicator: Vitamin A	Public Health Significance
<b>C4. Alternate Indicator:</b> % of mothers of children 0–23 months with night blindness during last pregnancy <sup>40</sup>	≥ 5%
<b>C4. Alternative Indicator:</b> % of pregnant women with night blindness	≥ 5%
<b>C5.</b> % of mothers of children 6–59 months of age who received high-dose vitamin A supplement within 8 weeks postpartum (6 weeks if not exclusively breastfeeding) <sup>41</sup>	< 80% is generally a priority. Discuss high, medium, and low designations as a group.

## WHO Classification of Public Health Significance of Anemia<sup>42</sup>

Indicator: Iron	Level of Public Health Significance			
	Normal	Low	Medium	High
<b>C6.</b> % of women of reproductive age (15–49 years) with anemia (Hb < 11 g/dl for pregnant women; < 12 g/dl for non-pregnant women)	≤4.9%	5.0-19.9%	20.0-39.9%	≥ 40%

**Note:** The above is based on anemia in the overall population, and is applied here to women.

## Classification of Public Health Significance of Women’s Access to Iron-Folic Acid Supplementation and Use of Iodized Salt

Indicator: Iron	Public Health Significance
<b>C7.</b> % of women 15–49 years of age with a birth in the 5 years preceding the survey who took iron tablets/syrup for 90 or more days during pregnancy for most recent birth or iron/folic acid during pregnancy for the most recent birth <sup>43</sup>	< 80%
<b>Indicator: Iodine<sup>44</sup></b>	
<b>C8.</b> % of households consuming adequately iodized salt (20–40 ppm)	< 90%
<b>C9.</b> Median urinary iodine concentration for pregnant women	> 150 ug/l
<b>C10.</b> Median urinary iodine concentration of children under 2 years, women, and lactating women	< 100 ug/l

<sup>40</sup> WHO. 2011. *Guideline: Vitamin A Supplementation in Pregnant Women*. Geneva: WHO.

<sup>41</sup> According to 2011 World Health Organization guidelines, “Vitamin A Supplementation in Postpartum Women,” vitamin A supplementation in postpartum women is not recommended as a public health intervention for the prevention of maternal and infant morbidity and mortality, but adequate dietary intake of vitamin A-rich foods should be promoted in the postpartum period. However, as some countries still do postpartum supplementation, it will be important to check the country guidelines to see if they have adopted the 2011 guidelines.

<sup>42</sup> WHO. 2008. *Worldwide Prevalence of Anaemia 1993–2005: WHO Global Database on Anaemia*. Geneva: WHO.

<sup>43</sup> In practice, projects seek to achieve targets of at least 80% coverage or more. Coverage below this 80% cutoff indicates that the program is not having a public health impact and is a nutrition program priority for further attention/action.

<sup>44</sup> WHO; UNICEF; and ICCIDD. 2007. *Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination: A Guide for Program Managers. Third Edition*. Geneva: WHO.

## Minimum Dietary Diversity – Women (MDD-W)<sup>45</sup>

Indicator: MDD-W	Public Health Significance
<p><b>C11.</b> MDD-W captures the proportion of women of reproductive age in a specific geographic area who are consuming minimum dietary diversity. A woman of reproductive age is considered to consume minimum dietary diversity if she consumed at least 5 of 10 specific food groups in the previous 24 hours. Food groups include: 1) all starchy staple foods, 2) beans and peas, 3) nuts and seeds, 4) dairy, 5) flesh foods, 6) eggs, 7) vitamin A-rich dark green leafy vegetables, 8) other vitamin A-rich vegetables and fruits, 9) other vegetables, and 10) other fruits.</p>	<p>This indicator reflects consumption of at least 5 of 10 food groups; women consuming foods from 5 or more of the food groups listed have a greater likelihood of meeting their micronutrient needs than women consuming foods from fewer food groups.</p>



After recording your rationale in the Workbook in Section C, proceed to Section D. Micronutrient Status of Children

## Section D. Synthesizing Data on Micronutrient Status of Children

At this point, the team should discuss the data gathered on micronutrient status in children and determine whether micronutrients are a priority intervention area.

### Guidance for Data Synthesis

The following is guidance from WHO, UNICEF, and the Micronutrient Forum on interpreting the prevalence of micronutrient deficiencies and ranking their level of public health significance.

### Classification of Public Health Significance of Vitamin A Deficiency

Indicator: Vitamin A	Level of Public Health Significance			
	Normal	Low	Medium	High
<b>D1.</b> % of children 6–59 months of age with vitamin A deficiency (serum retinol values $\leq 0.70 \mu\text{mol/l}$ ) <sup>46</sup>	< 2%	$\geq 2$ –9.9%	$\geq 10$ –19.9%	$\geq 20\%$
<b>D1. Alternate Indicator:</b> % of children 24–71 months of age with night blindness <sup>47</sup>	–	$\leq 1\%$	$\geq 1.1$ –4.9%	$\geq 5\%$

<sup>45</sup> MDD-W is a new version of the Women’s Dietary Diversity Score (WDDS). There are two main differences between the MDD-W and the WDDS: 1) the MDD-W is a dichotomous indicator whereas the WDDS indicator is a quasi-continuous score, and 2) the food groups used to calculate MDD-W are slightly different from that used to calculate WDDS. MDD-W uses 10 food groups, while WDDS uses 9.

<http://www.fantaproject.org/sites/default/files/resources/Introduce-MDD-W-indicator-brief-Sep2014.pdf>

<sup>46</sup> WHO. 1996. *Indicators for Assessing Vitamin A Deficiency and Their Application in Monitoring and Evaluating Intervention Programmes*. Geneva: WHO.

<sup>47</sup> WHO. 2009. *Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995–2005*. WHO Global Database on Vitamin A Deficiency. Geneva: WHO.

### Classification of Public Health Significance of Access to Vitamin A Supplementation

Indicator: Vitamin A	Public Health Significance
D2. % of children 6–59 months of age who have received vitamin A supplementation in previous 6 months <sup>48</sup>	< 80%

**Note:** 2011 WHO guidelines, “Neonatal Vitamin A Supplementation” and “Vitamin A Supplementation in Infants 1–5 Months of Age,” do not recommend that either groups receive vitamin A supplementation to reduce infant morbidity or mortality.

### Classification of Public Health Significance of Anemia

Indicator: Iron	Level of Public Health Significance			
	Normal	Low	Medium	High
D3. % of anemia in the population <sup>49</sup>	≤ 4.9%	5.0–19.9%	20.0–39.9%	≥ 40%

**Note:** Although the guidance in the table refers to the percentage of anemia in the general population instead of specifically for children 6–59 months, please use this table to rate the public health significance related to children, which is the indicator used in Step 1 of the workbook.

### Classification of Public Health Significance of Access to Iron and Iodine

Indicator: Iron <sup>50</sup>	Public Health Significance
D4. % of children 6–23 months of age receiving iron supplements or micronutrient powders yesterday	< 80%
D5. % of children 12–59 months receiving deworming medication in the previous 6 months	< 80%
<b>Indicator: Iodine<sup>51</sup></b>	
D6. % of households consuming adequately iodized salt (20–40 ppm)	< 90%
D7. Median urinary iodine concentration in children 0–59 months years of age (µg/l)	< 100 µg/l



After recording your rationale in the Workbook in Section D, proceed to Section E. Underlying Disease Burden.

<sup>48</sup> Coverage of 80% for delivery of several micronutrient interventions were selected based on the idea that the ENA approach aims to achieve at least 80% coverage at the national or sub-national scale (Acharya, K. et al. 2004. *Using ENA to Accelerate Coverage with Nutrition Interventions in High Mortality Settings*. Washington, DC: BASICS II.)

<sup>49</sup> WHO. 2000. *The Management of Nutrition in Major Emergencies*. Geneva: WHO.

<sup>50</sup> Coverage of 80% for delivery of several micronutrient interventions were selected based on the idea that the ENA approach aims to achieve at least 80% coverage at the national or sub-national scale (Acharya, K. et al. 2004. *Using ENA to Accelerate Coverage with Nutrition Interventions in High Mortality Settings*. Washington, DC: BASICS II.)

<sup>51</sup> WHO; UNICEF; and ICCIDD. 2007. *Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination: A Guide for Program Managers. Third Edition*. Geneva: WHO.

## Section E. Synthesizing Data on the Underlying Disease Burden

At this point, the team should discuss the data on underlying disease burden and determine whether to prioritize any of these intervention areas. As noted earlier, there are numerous underlying factors that can influence the nutritional status of women and children. While the NPDA does not include analysis sections for additional factors aside from the underlying disease burden, users are encouraged to keep in mind other potential influencers (see Key Concepts for more information on nutrition-sensitive sectors and programs).

The underlying disease burden, reflected in rates of diarrhea, acute respiratory infections, malaria, vaccine-preventable diseases, tuberculosis, and/or HIV can severely impact nutritional status. And, undernutrition can exacerbate the underlying disease burden. Data related to the underlying disease burden helps program staff determine the need for program approaches specific to disease in addition to inadequate dietary intake and feeding practices.

Although infection with parasitic worms contributes to the underlying disease burden, the NPDA discusses provision of deworming medicines under the micronutrient section because of its impact on iron absorption.

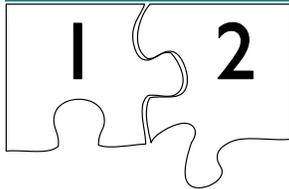
### Guidance for Data Synthesis

No international standards exist to determine at what level of prevalence public health nutrition programming should be adapted for or include interventions to address illnesses such as diarrhea, acute respiratory infections, malaria, or HIV. Your program planning team, through examination of quantitative and qualitative data and discussions with local experts will need to determine the level of public health significance and whether the underlying disease burden in the program area warrants consideration in program design.



After recording your rationale in the Workbook in Section E, proceed to Step 2. Determine Initial Program Goal, Purpose, and Sub-Purpose(s)

## STEP 2



# Determine Initial Program Goal, Purpose, and Sub-Purpose(s)

*Step 2 begins on page 41 of the Workbook*

In Step 2, you will be drafting the initial program goal, purpose, and sub-purposes based on data interpretation and synthesis in Step 1. The initial goal, purpose, and sub-purposes will be revisited and input into a LogFrame template in Step 6, after collecting and reviewing additional information in Steps 3–5.

There are many ways to think through and present the key elements of program design. This is often a flexible and iterative process. Here we present information on how to think through and design a program using both a Theory of Change and a Logical Framework (LogFrame), which may be required when submitting program proposals to USAID. The NPDA does not take users through all of the steps to develop a Theory of Change, but the data collected (both qualitative and quantitative) and the synthesis of those data can help NPDA users to create a Theory of Change.

## THEORY OF CHANGE

A Theory of Change maps out how a program design team thinks outputs from their activities will interact with other concurrent activities and contextual conditions to stimulate or enable a series of outcomes that ultimately lead the achievement of desired objectives. It includes a set of hypotheses, outcomes, assumptions, and indicators that make up the causal pathways of change required to bring about a desired, long-term goal. In mapping out the pathway to the goal, the Theory of Change also can identify where external action is needed to address activities that are not within a program’s scope and explain how the program will help ensure that other actors undertake these actions in the required timeframe. For example, many food security programs include a health component where they aspire to improve the health of pregnant women and children under 2 years of age, but they do not directly work with health systems. However, improved health systems might be included in the Theory of Change, because that is a required component if one is to achieve sustained improved health in this population, even if it is not part of the program’s mandate.<sup>52</sup>

As the context and environment within which programs work is constantly changing, ongoing discussion and analysis of the Theory of Change should take place to support program design, implementation, and evaluation.

<sup>52</sup> Fornoff, M. and Starr, L. 2014. *Theory of Change Facilitator’s Guide (December 2014 Edition)*. Washington, DC: TANGO International and The TOPS Program.

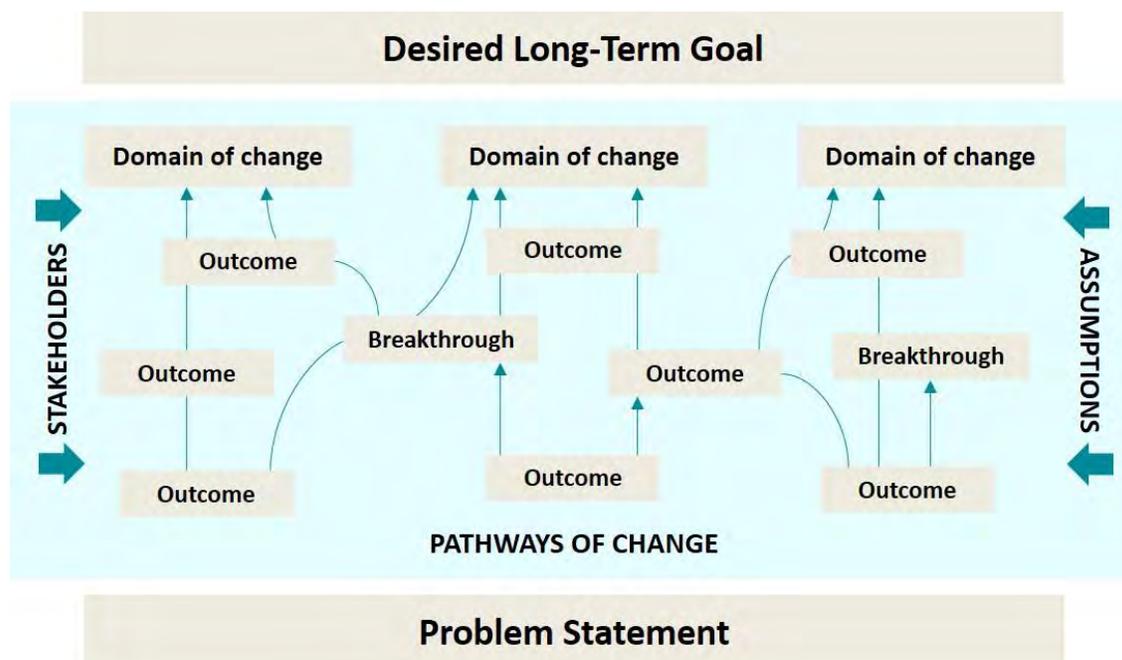
A Theory of Change usually includes the following elements:

- A problem statement
- A desired long-term goal
- Domains of change (key leverage points, purpose, sub-purposes)
- Pathways of change, which include breakthroughs and incremental outcomes
- Assumptions and risks
- Interventions for each incremental outcome
- Indicators for each incremental outcome
- Defined stakeholders and roles
- Diagram and narrative summary

The Theory of Change should graphically show the domains and pathways of change and include the goal, problem, outcomes, and other key pieces. It should be simple, easy to follow, and appealing to the eye (see the conceptual model below).<sup>53</sup> Steps 2 and 3 of the NPDA workbook provide space to think through some of the key elements of the Theory of Change.



#### EXAMPLE THEORY OF CHANGE CONCEPTUAL MODEL



<sup>53</sup> Adapted from *ibid.*

## LOGICAL FRAMEWORK

A LogFrame is a management tool used to design, monitor, and evaluate a program. It is usually represented in a table format and is a set of interlocking concepts that summarizes and structures the main elements of a program and highlights the logical linkages between intended inputs, planned activities, and expected results. A good LogFrame will show a chain of results that clearly identifies how and why a program is effecting change within a specified population toward achieving program goals and objectives. Program planners should demonstrate the causal links in the LogFrame so that the final approaches selected lead to the immediate outcome, which contributes to achieving the sub-purpose and program purpose which, in turn, all contribute to achieving the greater program goal (see the sample LogFrame template below). Causal thinking should not be confused with sequential thinking. To ensure that the LogFrame follows causal logic, ask “how” as you read down the chain or “why” as you read up the chain. The successive box should answer the question. If it doesn’t, there may be a flaw in the causal logic. The causal logic should be routinely tested, refined, and adapted based on monitoring results and learning based on that monitoring.<sup>54,55</sup>

Step 2 in the Workbook provides space to develop the goal and determine the program purpose and sub-purposes. These will be modified and input in to the LogFrame Excel template during Step 6. Step 6 also includes space in the Workbook to synthesize and input the rest of the components of the LogFrame—immediate outcomes (if necessary), outputs, and inputs before entering them into the Excel template.



### SAMPLE LOGFRAME TEMPLATE

Level	Narrative Summary	Indicators	Data Sources	Assumptions
Goal				
Program Purpose				
Sub-Purpose				
<i>Immediate Outcome</i>				
Output				
Input				

The following are definitions for the various components of a LogFrame based on USAID’s Technical Note: The Logical Framework and draft Technical References for Food for Peace Development Food Assistance Projects.

<sup>54</sup> USAID. 2012. “The Logical Framework.” Technical Note Number 2, Version 1.0.

<sup>55</sup> Örtengren, K. 2004. *The Logical Framework Approach*. Sida.

## Narrative Summary, Indicators, Data Sources, and Assumptions

A LogFrame has four columns starting with a **narrative summary**, which describes the project's objectives for the goal, purpose, sub-purpose, immediate outcome, output, and inputs (it is not meant to be a full descriptive narrative). The **indicators** column describes programs outputs and outcomes in operationally measureable terms and specifies the performance standard to be reached in order to achieve the goal, purpose, sub-purpose, immediate outcomes, or output.<sup>56</sup> The **data sources** column is where the design team will specify exactly where the indicator data will come from (e.g., population-based survey, food distribution form, growth monitoring and promotion form, etc.), and when it will be collected. The **assumptions** column is where the design team should reflect on external factors and conditions that could influence (positively or negatively) the process described in the narrative column. The list of assumptions should include factors that potentially impact program success. Major assumptions, risks, and contingencies should be assessed with program feasibility in mind.

### Goal

**Definition:** *Big picture, long-term, ultimate ambitions.*

Goals are high level and are not typically measured in the program context as they may go beyond what a single program can achieve (e.g., reducing mortality or improving the quality of life in the general population). While the fulfillment of a goal may not be possible or verifiable within the lifespan of the program, the achievement of the program's more specific objectives should contribute to the realization of the goal.

### Program Purpose

**Definition:** *A statement of what the program plans to achieve during the life of the program; why the program is needed.*

Program purpose is the key result(s) to be achieved that justify the program. This achievement is the highest-level result that a program can materially affect with its efforts within given restraints (e.g., time and funding). Results are stated in terms of changes in the condition of targeted beneficiaries or changes in conditions that affect them. Results statements should describe the desired end condition, not the activities that are going to be implemented. An example would be "nutritional status of women of reproductive age and children under 5 years improved."

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<sup>56</sup> For USAID/Food for Peace, only selected key indicators (one or two indicators per result) are to be included in the LogFrame.

## Sub-Purpose

**Definition:** A discrete result or **outcome** necessary to achieve a program purpose.

A sub-purpose is a lower-level result that contributes to achieving the program purpose. They are longer-term results resulting from behavioral and systematic changes. Not all programs have sub-purposes. They are used when the causal leap from immediate outcomes to program purpose(s) may be too great and can be added depending on the scope and complexity of the program. An example would be “increased utilization of health and nutrition services for women of reproductive age and children under 5 years.”

## Immediate Outcomes<sup>57</sup>

**Definition:** The immediate consequences of outputs.

Immediate outcomes include changes in practices, attitudes, and systems as a result of the application or use of outputs produced by program activities.

## Outputs

**Definition:** Direct results of the activities that are implemented within the framework of the program that are needed to achieve the purpose; what are produced as the result of inputs.

Outputs are tangible, immediate, and intended products of an activity within the program’s control or influence. Examples include numbers of people trained, food rations distributed, and counseling groups formed.

## Inputs

**Definition:** The resources that a program expends to carry out activities to achieve outputs.

Inputs include financial resources, commodities, technical expertise, and organizational strength.

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<sup>57</sup> Not all LogFrames include immediate outcomes but USAID/Food for Peace does utilize them in their LogFrame.



## ILLUSTRATIVE LOGFRAME

Note this is not an exhaustive LogFrame, but simply an example to display what is needed to be inputted at each level of a LogFrame. NPDA users should create a LogFrame that details all the inputs, outputs, immediate outcomes, and sub-purposes necessary to achieve the program purpose (which the program is accountable for).

<b>Goal</b>	Child mortality reduced			
<b>Program Purpose</b>	Improved nutritional status of children under 5 years	Percent of children 0–59 months that are stunted (height-for-age < -2 z-scores)	Population-based survey Frequency: start and end of the project	<ul style="list-style-type: none"> <li>Political and socioeconomic situation remains stable</li> <li>Absence of epidemic during the project implementation period</li> <li>Environmental disasters do not exceed normal levels</li> </ul>
<b>Sub-Purpose 1.1</b>	Improved child feeding practices	Percent of children 6–23 months who receive a minimum acceptable diet (apart from breast milk)	Population-based survey Frequency: start and end of the project	<ul style="list-style-type: none"> <li>Price of food groups are stable to allow continued purchase of diversified diet</li> </ul>
<b>Immediate Outcome 1.1.1</b>	Improved knowledge of optimal health and nutrition practices	Percent of women who committed to practicing at least one ENA for 3 months	Program records Frequency: annually	<ul style="list-style-type: none"> <li>Training conducted is of high quality</li> </ul>
<b>Output 1.1.1.1</b>	20,000 beneficiaries participating in ENA counseling sessions	Number of beneficiaries participating in ENA counseling sessions	Programs records Frequency: quarterly	<ul style="list-style-type: none"> <li>Beneficiaries are able and willing to participate in program</li> <li>Program funding continues at expected level</li> </ul>
<b>Input 1.1.1.1.1.</b>	<ul style="list-style-type: none"> <li>ENA session materials</li> <li>Job aids</li> <li>Facilitator training</li> </ul>			
<b>Immediate Outcome 1.1.2</b>	Increased access to diversified foods	Number of households having homestead food production	Programs records Frequency: quarterly	<ul style="list-style-type: none"> <li>Weather conditions support the expected growth of household crops</li> <li>Households have access to farmable land</li> <li>Women have the time to plan and manage a home garden</li> </ul>
<b>Output 1.1.2.1</b>	10,000 women are trained on household food production (home gardens) and counseled on improved dietary diversity	Number of women trained on household food production (home garden) and the importance of dietary diversity	Programs records Frequency: quarterly	<ul style="list-style-type: none"> <li>Program funding continues at expected level</li> <li>Women have the time and desire to attend training</li> </ul>

<b>Input</b> 1.1.2.1.1	<ul style="list-style-type: none"> <li>• Training on household garden development and management and dietary diversity</li> <li>• Job aids</li> <li>• Startup seeds or vouchers for seeds</li> <li>• Facilitator training</li> </ul>			
<b>Sub-Purpose</b> 1.2	Increased utilization of health and nutrition services for women of reproductive age and children under 5 years	Percent of women receiving home visits from community-based health volunteers	Population-based survey Frequency: start and end of the project	<ul style="list-style-type: none"> <li>• Women are willing to receive home visits</li> <li>• Health staff are available to provide services</li> </ul>
<b>Immediate Outcome</b> 1.2.1	Increased access to quality community health services	Proportion of communities with trained health worker	Program records Frequency: quarterly	<ul style="list-style-type: none"> <li>• Health volunteers have been recruited and trained in accordance with national guidelines</li> </ul>
<b>Output</b> 1.2.1.1	2, 000 community health volunteers trained	Number of community health volunteers trained	Program records Frequency: quarterly	<ul style="list-style-type: none"> <li>• Program funding continues at expected level</li> </ul>
<b>Input</b> 1.2.1.1.1.	<ul style="list-style-type: none"> <li>• Training package</li> <li>• Facilitator Training</li> <li>• Supplies for health volunteers (e.g., iron and folic acid tablets, oral rehydration solution, and zinc)</li> </ul>			

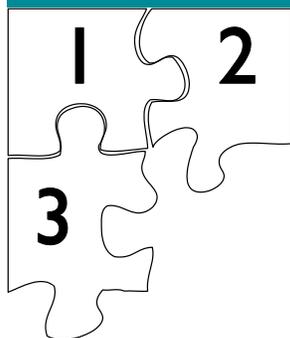
## HOW DO THE THEORY OF CHANGE AND LOGFRAME WORK TOGETHER?

A Theory of Change helps program designers think through how the successful implementation of their activities will lead to positive change, including identifying activities that are outside of the control of the program. A LogFrame highlights only the components for which the program is directly responsible. A LogFrame summarizes the Theory of Change and provides a standard format to present the program design and monitor its progress. Used in this manner, the development of a Theory of Change helps program designers think through the larger environment and context in which to achieve their goal, while the LogFrame helps to specify the program's specific responsibilities and outcomes expected. See Annex 3 for more information on Theory of Change and LogFrames.



After recording your program's goal, purpose, and initial sub-purposes in the Workbook, proceed to Step 3. Review Health and Nutrition Services.

## STEP 3



# Review Health and Nutrition Services

*Step 3 begins on page 47 of the Workbook*

Mapping existing health and nutrition policies, programs, and activities is an important part of program design. This information will help your team in considering which activities can be strengthened or built upon, the local capacity for response, and the best use of limited available resources.

The mapping information gathered in Step 3 of the Workbook will be used throughout the rest of this tool for making programmatic decisions. The information requested in the Workbook is a minimum set to facilitate discussion and program planning and does not replace a comprehensive health facility assessment or gap analysis, which can be conducted as part of subsequent program design or implementation. In addition, NDPA users should also map opportunities to coordinate and integrate with other sectors beyond health (such as agriculture, microenterprise, and food security).

The review of health and nutrition services in the Workbook seeks information on the following:

- National policies and strategies
- Programs and services (implementation, availability, access, demand, coverage, and protocols)
- Quality of programs or services (strengths, weaknesses, and barriers)
- Availability of materials and equipment (including behavior change communication materials)

## GATHERING DATA ON HEALTH AND NUTRITION SERVICES

### National Policies and Strategies for Nutrition Programming

Gather information on existing national policies and strategies for health and nutrition services and advocacy activities. Existing policies or plans to update policies may affect the program design or the overall effort required by a program to implement a nutrition approach. Provide brief summaries of key elements of the policies/strategies that are likely to influence a nutrition program and consider if there is a particular policy barrier that will limit the program. Information on policies/strategies should be available from the national Ministry of Health.

## Programs/Services

Document existing nutrition activities carried out at both the national and local levels by either local health programs/services or other agencies. Note if there is an associated protocol, and if there is whether it is up to date and accessible. Consider what services are available, who provides it, and what is the coverage and demand. Coverage could include distance to health services, number of women/children seen individually per month, and frequency of outreach visits. Program design teams may find this information from DHS Service Provision Assessment surveys, the national Ministry of Health, local and district health services, community leaders, donor agencies, and NGOs.

## Quality of Services

Consider the strengths and weaknesses of the programs/services, as well as barriers to quality service provision and/or use. This may be done through exit interviews, focus groups, group interviews, or key informant interviews conducted with both health providers and clients. There may also be country reports available on the quality of specific health care services. At the program design phase, the key is to understand the general strengths and weaknesses regarding the quality of the health services to inform program design. In-depth quality assessments can be conducted once the program is awarded.

## Health and Nutrition Behavior Change Communication Materials

Identify the availability of materials and equipment (such as scales and length boards), as well as materials used for health and nutrition behavior change from the Ministry of Health, United Nations agencies, technical assistance providers, potential partner organizations, or others. Determine if the communication materials are being used, if there are multiple materials that need to be harmonized, whether they are endorsed by the government, and if they are up to date and accurate.

## OTHER RESOURCES

As noted previously, Step 3 is a simple review to identify key strengths and weaknesses that will factor into selection of nutrition program approaches, rather than an in-depth assessment. For guidance on more comprehensive health facility assessments, capacity assessments, or gap analyses, consider the following resources.

### Health Facility Assessments

Health facility assessments involve additional questions and observations of the quality of service provision. USAID's Maternal and Child Health Integrated Program offers a [Rapid Health Facility Appraisal](#) tool with a minimum list of indicators, including some focused on nutrition services.

### ENA Capacity Assessment

If the program plans to direct significant efforts to strengthening nutrition services at health facilities, USAID's BASICS project offers a comprehensive health facility assessment

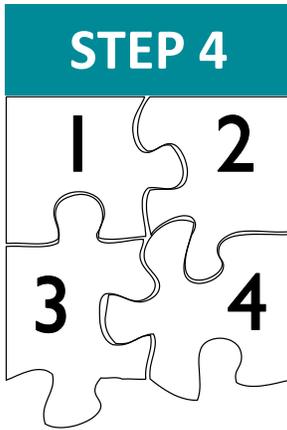
tool, [Program Review of Essential Nutrition Actions: Checklist for District Health Services](#), to determine capacity for the ENA.

## Gap Analysis

Tools and matrices exist to help organizations and institutions conduct gap analyses to determine what nutrition services and inputs are in place and where there are areas (or gaps) that could be improved. Examples of important factors to consider are found in [Nutrition Essentials: A Guide for Health Managers](#) by WHO, BASICS, and UNICEF. This document includes guidelines and examples of needs assessments and gap analyses in nutrition programs (note, however, that a number of the nutrition service protocols cited in the 1999 document may be outdated). Another resource is WHO's [Landscape Analysis on Countries' Readiness to Accelerate Action in Nutrition: Country Assessment Tools](#).



After recording data collected on national policies, programs and services, and materials and equipment, proceed to Step 4. Preliminary Program Design: Prevention.



## Preliminary Program Design: Prevention

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*Step 4 begins on page 54 of the Workbook. Annex 1 in the Workbook provides a summary of the approaches included in step 4 for easy reference when you fill out Step 4 in the Workbook.*

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You have already determined that high levels of stunting and/or underweight in children are of public health significance in your program area and that a preventive nutrition program is necessary. In addition, you have identified priority intervention areas. Next, you will start thinking about the best ways to deliver the priority interventions. This step provides guidance on considering potential preventive program approaches, with a focus on addressing stunting and underweight. However, if acute malnutrition is also an issue, then both a preventative and recuperative program will be necessary. Step 5 will guide you through potential recuperative approaches, if necessary. Step 6 will guide you through narrowing down the options you develop in Steps 4 and 5.

Programs to prevent undernutrition will likely require a combination of interventions outlined in the ENA as well as dealing with improving IYCF, maternal nutrition, micronutrient intake, and the underlying disease burden. The combination of interventions will be determined based on the priority areas the team has identified (Step 1), the program goal and purposes (Step 2), and mapping of services (Step 3). It is anticipated that the program approaches chosen to deliver these interventions will be community-based, include components that link to health services (and other sectors if appropriate/feasible), and include an SBC approach.

The following categories of preventive approaches to reduce undernutrition are discussed in Step 4:

- Section A: Cross-cutting approaches to improve nutritional status
- Section B: Infant and young child feeding
- Section C: Maternal nutrition
- Section D: Micronutrient status of children
- Section E: Underlying disease burden

## STEP 4

### SECTION A

# CROSS-CUTTING APPROACHES TO IMPROVE NUTRITIONAL STATUS

*Step 4, Section A begins on page 55 of the Workbook*

There are a number of cross-cutting approaches that have been proven effective in support of nutrition programs. Four are described here and will be referred to often in the intervention-specific sections (Sections B–E):

- Social and behavior change approaches (including community mobilization)
- Food-based approaches
- Growth monitoring and promotion (GMP)
- Linking to health services

## Social and Behavior Change Approaches

SBC approaches are critical to increasing the adoption and use of the nutrition interventions covered in this tool. Many of the nutrition outcomes are related to individual practices of caregivers in household and community contexts. SBC should be integrated into all community-based nutrition programs.

This section provides guidance on SBC that applies to all of the intervention areas. Its purpose is to help program planners envision what will be necessary to include in a comprehensive SBC approach during the program design phase so that appropriate plans can be made for staffing and budgeting for all aspects of SBC implementation, including formative research, design and production of materials, and training and support of staff and community volunteers. A more detailed SBC strategy would need to be developed during the initial phases of program implementation.

This section covers only a few pointers and approaches related to SBC to support decision making about overall program design. Many tools exist to guide program staff in conducting formative research and developing effective messages and SBC strategies, some of which are listed among the Resources in Annex 3.

In general, NGOs can work with partners and other stakeholders to develop harmonized SBC strategies, messages, and materials that:

- Ensure that key nutrition messages are incorporated into all counseling and counseling materials at key contact points
- Provide nutrition education and counseling to caregivers and women of reproductive age
- Train and provide supportive supervision to counselors, community health workers, and health care providers
- Promote health and nutrition behaviors through multiple channels (community sources of information) and contact points (including contact with traditional birth attendants)

- Mobilize women, caregivers, and communities to access the services provided
- Establish a supportive household and community environment that facilitates behavior change
- Address the challenges and barriers that caregivers face

When developing a comprehensive SBC approach, program planners should discuss these four key questions:<sup>58</sup>

- **Whose behavior needs to change to bring about the desired health outcomes?** Who are the audiences (e.g., parents, neighbors, health workers)?
- **What do you want to help them do?** Is it technically correct? Is it feasible (can they do it)? Is it an effective practice?
- **Why are they not doing it now?** What barriers exist to people adopting an improved behavior? Consider both internal and external barriers. What incentives and factors (in the broadest sense) exist that would help motivate people to change their behavior? Why are some people currently doing it and others not? What makes the difference? How can you best influence and support desired behaviors?
- **What activities can you include in your program that would help you address those factors that you've identified as most influential in changing the behavior?** (See description of SBC approaches below.) Do you need materials or trainings to support those approaches?

### Potential SBC Approaches

There are many potential SBC approaches and a good program will incorporate a combination of these. A general rule related to behavior change is that there should be a limited number of messages transmitted through multiple channels.

Community mobilization should be considered an essential aspect of all effective, sustainable child nutrition programs, as it involves engaging a wide range of community members, interest groups, social networks, and institutions in a process of identifying local concerns and supporting shifts in norms and health practices through their active participation.

There are a variety of different activities and channels through which communities can be mobilized and SBC strategies implemented, using interpersonal communication (both individual and group) and media (including print, broadcast, and other forms). Some examples are:

- Counseling at key contact points
- Home visits
- Support groups
- Care groups

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<sup>58</sup> Child Survival Technical Support Plus Project/USAID. 2007. "Technical Reference Materials on Behavior Change Interventions."

- “Edutainment,” e.g., drama and community theatre
- Mass media including “mid” and “small”-size media

The following tables summarize these approaches and provide resources for more information. In addition to the approaches listed here, consider any other approaches or contact points that have been successful in the program area.

<b>Community Mobilization<sup>59</sup></b>	
<b>Brief Summary Description</b>	A process, which includes capacity building, through which community members, groups, or organizations identify, plan, carry out, and monitor and evaluate activities on a participatory and sustained basis to improve their health and other conditions, either on their own initiative or stimulated by others.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Build greater community participation, commitment, and capacity for sustainably improving child nutrition</li> <li>• Strengthen civil society</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>• Everyone in the community</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Community members most affected by and interested in child nutrition are involved from the very beginning and throughout the process</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Builds on social networks to spread support, commitment, and changes in social norms and behaviors</li> <li>• Builds local capacity to identify and address community needs</li> <li>• Helps to shift the balance of power so that disenfranchised populations have a voice in decision making and increased access to information and services while addressing many of the underlying social causes of poor nutrition and health</li> <li>• Motivates communities to advocate for policy changes to respond better to their real needs</li> <li>• Plays a key role in linking communities to health services, helping to define, improve on, and monitor quality of care, thereby improving the availability of, access to, and satisfaction with health and nutrition services</li> <li>• Uses a variety of communication channels including community performances, interest group meetings, special events, print media, video, and other forms</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Staff training in community mobilization techniques</li> <li>• Organizational and political commitment and support</li> <li>• Adequate time—it will generally take 2–3 years to begin to see improvements in nutrition and several more years to strengthen community capacity to sustain improvements</li> <li>• Community participation, ownership, and collective action</li> <li>• Organizational values and principles that support empowering people to develop and implement their own solutions to health and other challenges</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Demystifying Community Mobilization -- An Effective Strategy to Improve Maternal and Newborn Health</a> (ACCESS Program Community Mobilization Working Group 2007)</li> <li>• <a href="#">How to Mobilize Communities for Health and Social Change</a> (Health Communication Partnership)</li> <li>• <a href="#">Overview of the Approach for Mobilizing Families and Communities in Ethiopia to Adopt Seven Feeding Actions</a> (Alive &amp; Thrive 2014)</li> </ul>

<sup>59</sup> Adapted from ACCESS Program Community Mobilization Working Group. 2007. *Demystifying Community Mobilization: An Effective Strategy to Improve Maternal and Newborn Health*.

### Counseling at Key Contact Points (Facility Based)

<b>Brief Summary Description</b>	<p>Counseling is provided by a health care provider to a caregiver during the delivery of health services. Counseling messages should be personalized to the needs of the client. ENA guidance emphasizes the promotion of “small, doable actions” with negotiation techniques to support trial and adoption of behaviors, and the use of visual aids such as counseling cards to engage clients. To be effective, counselors need to have both good technical information and strong interpersonal communication skills. Client uptake of practices recommended during counseling will increase if this approach is combined with other communication channels. Contact points for counseling include the following facility-based services:</p> <ul style="list-style-type: none"> <li>• Clinics for prevention of mother-to-child transmission of HIV</li> <li>• Antenatal or prenatal and postpartum care visits</li> <li>• Baby delivery (potentially via traditional birth attendants)</li> <li>• Integrated management of childhood illnesses or sick-child visits</li> <li>• Well-child visits and immunizations</li> <li>• GMP sessions</li> <li>• Child health days</li> <li>• Recuperative feeding sessions</li> <li>• Mobile clinics</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Improve care and feeding practices for pregnant and lactating women and children under 2 years of age</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Pregnant and lactating women</li> <li>• Mothers/caregivers of children 0–23 months or up through 59 months</li> <li>• Influencers of caregivers of children under 5 years of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Time available for counseling</li> <li>• Adequate coverage: community where women access services at the health facility</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Messages targeted to the child’s developmental stage when the mother/caregiver seeks the service</li> <li>• Individually-tailored guidance</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Training on counseling and negotiation skills</li> <li>• Counseling materials developed through formative research, appropriate for a low-literate population, if necessary</li> <li>• Time and space available for counseling</li> <li>• Continuous supportive supervision of counselors</li> <li>• Follow up in home setting by volunteers</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#"><i>Training Manual for Health and Social Workers in Sub-Saharan Africa: Implementation of Essential Nutrition Actions</i></a> (BASICS and SARA projects)</li> <li>• <a href="#"><i>ENA Health Worker Training Guide</i></a> and <a href="#"><i>ENA Health Worker Handouts</i></a> (CORE Group 2011)</li> </ul>

<b>Home and Community-Based Visits</b>	
<b>Summary</b>	<p>Home visits conducted by community health workers (including volunteers), auxiliary nurses, or specialized community nutrition volunteers provide an opportunity for one-on-one, personalized counseling, outreach, follow up, and support to pregnant women, lactating women, caregivers of children, and their families. Visits may include checking on the health of a baby, counseling caregivers, or following up with a child who has experienced growth faltering, acute malnutrition, and/or illness.</p> <p>Community-based opportunities for education and support to groups provide opportunities for nutrition education as well as the potential for one-on-one counseling if appropriate. Examples of such opportunities are:</p> <ul style="list-style-type: none"> <li>• School or community meetings for mother and father involvement</li> <li>• Local gathering places such as shops, wells, and marketplaces</li> <li>• Adult education venues such as literacy classes and agricultural training programs</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Ensure child’s health or growth is improving</li> <li>• Improve care and feeding practices</li> <li>• Help overcome barriers to change</li> <li>• Support family</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Pregnant and lactating women</li> <li>• Mothers/caregivers of children 0–23 months or up through 59 months</li> <li>• Caregivers of children under 5 years of age</li> <li>• Influencers of caregivers of children under 5 years of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Willing, available, and trained volunteers</li> <li>• Community where homes are located a short distance from each other</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Opportunity to observe household context and behaviors</li> <li>• Opportunity to tailor messages to individual needs and to engage in dialogue to negotiate change</li> <li>• Community members provide support and counseling</li> <li>• Individually tailored guidance and support</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Counseling materials developed through formative research, appropriate for a low-literate population, if necessary</li> <li>• Training on counseling and negotiation skills</li> <li>• Continuous supportive supervision of counselors</li> <li>• Incentives</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Training Guide for Community Volunteers</a> (CORE Group 2011, currently being updated)</li> <li>• <a href="#">ENA Health Worker Training Guide</a> and <a href="#">ENA Health Worker Handouts</a> (CORE Group 2011)</li> <li>• <a href="#">Community-Based Infant and Young Child Feeding Counseling Packet</a> (UNICEF 2013)</li> </ul>

## Support Groups

<b>Brief Summary Description</b>	Support groups provide comfortable, respectful environments where peers can learn from and support each other to practice optimal child care and feeding practices. Support groups may build on existing groups within the community or be organized for specific purposes. Common support groups include breastfeeding support groups, women’s groups, and grandmother’s groups. Support groups may be facilitated by a member of the group and may include nutrition education sessions led by a health care provider or other community member.
<b>Objective</b>	<ul style="list-style-type: none"> <li>• Promote optimal child care and feeding behaviors</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Mothers of young children (under 2, 3, or 5 years of age)</li> <li>• Pregnant women</li> <li>• First-time mothers</li> <li>• Adolescent mothers</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Group members willing and able to meet and share with each other</li> <li>• Community mobilized</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Groups are composed of peers</li> <li>• Safe environment for mothers to learn and share</li> <li>• Research shows the level of influence of peers on behavior change is strong<sup>60</sup></li> <li>• Requires minimal outside resources</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Formative research to identify motivating themes and messages</li> <li>• Group leader must have strong facilitation skills</li> <li>• Training may be necessary</li> <li>• Variation in methodology from very interactive to presentation of topic followed by group discussion</li> <li>• Can link to the non-health sector</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Training of Trainers for Mother-to-Mother Support Groups</a> (LINKAGES Project 2003)</li> <li>• <a href="#">Freedom from Hunger</a> (Freedom from Hunger integrates microfinance with health and life skills services to equip very poor families to improve their incomes, safeguard their health, and achieve lasting food security through a range of group-based models.)</li> <li>• <a href="#">Peer Counselor Programs</a> (La Leche League)</li> <li>• <a href="#">Resources of IYCF Support Groups</a> (Alive &amp; Thrive 2014)</li> <li>• <a href="#">Grandmother Project</a></li> </ul>

<sup>60</sup> WHO. 2003. *Community-Based Strategies for Breastfeeding Promotion and Support in Developing Countries*. Geneva: WHO.

## Care Groups

<b>Brief Summary Description</b>	Care groups are an approach for organizing community health volunteers. It is a community-based strategy for improving coverage and behavior change through building teams of women who each represent, serve, and promote health and nutrition among women in 10–15 households in their community. Volunteers (often referred to as “leader mothers”) meet weekly or bi-weekly with a paid facilitator to learn a new health message, report on the incidence of disease, and support each other. Care group members visit the women for whom they are responsible, offering support, guidance, and education to promote behavior change.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Improve coverage of health programs</li> <li>• Sustainable behavior change</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>• Mothers of children 0–59 months of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Community with houses close enough together so that volunteers can walk between them and to meetings</li> <li>• Sufficient volunteer pool</li> <li>• Training program</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Paid promoter trains and mentors through monthly meetings</li> <li>• Trained leader mother volunteers provide support to other mothers</li> <li>• Small number of paid staff reach large population (through leader mothers)</li> <li>• Peer support</li> <li>• Can support multiple health initiatives</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Time available—leader mothers must have 5 hours per week to volunteer</li> <li>• Comprehensive and ongoing training of leader mothers</li> <li>• Long start-up time (due to training); program should be of 4–5 year duration</li> <li>• Supervisor-to-promoter ratio should be 1:5</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">A Guide to Mobilizing Community-Based Volunteer Health Educators: The Care Group Difference</a> (CORE Group)</li> <li>• <a href="#">Care Groups Info</a> (CORE Group)</li> <li>• <a href="#">Care Groups: A Training Manual for Program Design and Implementation</a> (Food Security and Nutrition Network Social and Behavioral Change Task Force 2014)</li> </ul>

<b>Mass Media</b>	
<b>Brief Summary Description</b>	Mass media refers to various means of communication designed to reach a wide, general audience, including broadcast forms such as radio and TV, print media such as newspapers and comics, and large scale outdoor media like billboards and bus advertising. Mass media can transmit messages to a wide audience and educate and entertain them. Since it is sometimes an expensive strategy, if needed, a program may consider collaborating with others conducting mass media efforts to align messages for greater repetition and support.
<b>Objective</b>	<ul style="list-style-type: none"> <li>To create awareness of specific behaviors or draw attention to ongoing activities or health issues</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>Communities in the area—can target all members with broad messages</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>People need access to the media being used</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>Simple messages; can generate discussion</li> <li>High inputs at beginning and then message carried by advertising channel</li> <li>Can reach many people in little time</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>Formative research to identify motivating themes</li> <li>Careful selection of appropriate messages</li> <li>Pre-testing and refinement of the message</li> <li>Creativity and social marketing expertise</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li><a href="#">Alive &amp; Thrive</a></li> </ul>

<b>“Edutainment” and Community Activities</b>	
<b>Brief Summary Description</b>	Edutainment uses popular forms of entertainment such as music and drama to communicate nutrition messages. Other forms of community-based communications that achieve similar aims include festivals, community events, fashion shows, cooking demonstrations, and contests.
<b>Objective</b>	<ul style="list-style-type: none"> <li>Reach a broad, general audience (particularly people who would not be reached through other channels) with messages</li> <li>Increase appeal and audience engagement</li> <li>Stimulate awareness and conversation in community about key topics</li> <li>Create value by having popular/admired figures associate with health messages</li> <li>Build positive attitudes and support for behavior change</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>General population in community</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>Available channels to reach the community</li> <li>Audience engagement</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>Learning via entertainment channels</li> <li>Opportunity to reach large audiences</li> <li>Can support multiple health initiatives</li> <li>Community based</li> <li>Simple messages to spark conversations among audience members</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>Formative research to identify motivating themes and appropriate messaging</li> <li>Popular entertainment format that lends itself to incorporating public health content</li> <li>Talented, creative people working in teams</li> <li>Performance venue, group meeting, or special event to work through</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li><a href="#">Soul City</a></li> </ul>

## Food-Based Approaches

Food-based approaches are a combination of approaches to improve dietary quality and dietary diversity. Most community-based nutrition programs include some food-based approaches. The most common approaches can be organized around those that will increase: a) production and availability of and access to a variety of micronutrient-rich foods; b) consumption of micronutrient-rich foods; and c) bioavailability of micronutrients (ability of the body to absorb micronutrients). Food-based approaches are considered sustainable and comprehensive approaches because the focus is on the diet as a main way to improve nutrition. The decisions and actions to improve dietary quality, production, and consumption practices take place at the community, household, and individual levels. A brief summary of food-based approaches follows.<sup>61</sup>

Ways to **increase production, availability, and access to a variety of micronutrient-rich foods** can include locally appropriate needs-based food security and agriculture programs and policies. Examples of these are programs to promote home production of fruits and vegetables and/or small livestock production and aquaculture; biofortification using traditional breeding to enhance the micronutrient content of staple foods; use of preservation methods like solar drying to extend the availability of seasonal fruits and vegetables; and fortifying staple foods to improve the micronutrient content of the diet for the general population (see box on Food Fortification on the next page). In food-insecure environments, food supplementation may be included as part of a program strategy. Programmers may also consider approaches that improve household access to foods, including supporting village-based savings groups; linking to microenterprise services and/or conditional cash transfers; and programs providing improved seeds, fertilizers, and training for growing staple crops.

Programs to **increase consumption of micronutrient-rich foods** can include SBC and nutrition education approaches (discussed previously). This includes SBC approaches targeted to specific groups, such as promoting appropriate diets for women during pregnancy, promoting breastfeeding, and the consumption of fortified complementary foods to young children.

### Provision of Food

One means to increase the availability of food in food-insecure locations and/or in contexts of high poverty is through providing supplementary foods. Ideally the food supplement will also increase the diversity of foods and nutrients that would be consumed in the local diet. Food supplementation should always include well-designed SBC and nutrition education activities. There are several different models that can be used. More information is provided in Step 5 and resources are provided in Annex 3.

<sup>61</sup> Much of this section on food-based strategies draws from Ruel, M.T. and Levin, C. 2000. *Assessing the Potential for Food-Based Strategies to Reduce Vitamin A and Iron Deficiencies: A Review of Recent Evidence*. FCND Discussion Paper No. 92. IFPRI; and WHO. 2011. *Guideline: Use of Multiple Micronutrient Powders for Home Fortification of Foods Consumed by Pregnant Women*. Geneva: WHO.

## Food Fortification

Food fortification is one approach to improve the micronutrient content of food. Fortification of commonly consumed food staples and condiments, such as flour, sugar, oils, and salt, is an effective approach to reduce micronutrient deficiencies in populations, particularly in urban areas where people have access to these foods. Guidelines for mass production of centrally processed fortified foods are not covered in the NPDA. Many countries have a policy that requires mandatory and regulated food fortification; others have voluntary food fortification with the private sector monitoring itself. In some countries, foods targeted at special groups (e.g., children 6–23 months) are fortified or micronutrient powders are available for home fortification of complementary foods. If fortified foods or in-home fortificants are available, your team may consider:

- Promoting the consumption of vitamin A-, iron-, or multiple micronutrient-fortified foods within a larger behavior change approach.
- Promoting the use of home-based fortification methods and products, such as micronutrient powders, that permit the fortification of local foods in the home for children 6–23 months to increase the content of multiple micronutrients, including iron, folic acid, zinc, vitamin A, and vitamin C. Home-based fortification methods are most appropriate in contexts where centrally fortified foods are not available to the target population or do not meet their nutritional needs (e.g., for young children).

If fortified foods are not available, consider:

- Advocating to the specific country's government to promote food fortification with needed nutrients.
- Partnering with the private sector to promote food fortification. The private sector could be an important partner either for marketing fortified foods or for increasing the availability of fortified foods in the marketplace. Fortification can be done at a large or medium scale. Setting up community facilities may also be possible.
- Establishing food fortification, with mass production of a quality-controlled fortified product; this requires a high level of specialized skill.

Iodine deficiency can be addressed through a fortification strategy. Universal salt iodization is recommended and salt iodization is the major approach to reduce iodine deficiency disorders. If iodized salt is available:

- Promote consumption of iodized salt and (if possible) seafood by the entire household within a larger behavior change approach.
- During monitoring and evaluation activities, consider simple tools to test the level of iodization in household salt. This is useful when complemented with other activities for the advocacy of reliable salt iodization.

If iodized salt is not available, consider partnering with other organizations to conduct advocacy efforts.

Programs to **increase the bioavailability and mitigate the destruction of micronutrients** to improve the quality of the diet includes approaches such as improving home processing methods (e.g., fermentation, germination, and malting to improve iron bioavailability; and drying fruits and vegetables in the shade to preserve vitamin A content) and use of dietary food combinations that promote absorption/increase the bioavailability of certain micronutrients (e.g., adding a small amount of animal source foods or consuming vitamin C-rich foods). Using iron as an example, animal source foods are among the best source of heme iron, which is the most absorbable form of iron. Non-heme iron, which is found most often in plant sources, is absorbed better when consumed with vitamin C-rich foods and meat and its absorption is reduced by consuming tea, coffee, and possibly calcium supplements or calcium in food. Programmers should research the available/common and affordable sources of heme iron in the community and look for ways to incorporate more of these foods into the diet in combinations that enhance absorption.

### Growth Monitoring and Promotion

GMP is a preventive strategy focused on improving child growth that incorporates elements of community mobilization, SBC, IYCF, micronutrient supplementation, addressing underlying disease burden, and links to health services. GMP has a mixed evidence base and was not listed among the effective approaches in the 2008 *Lancet* series on maternal and child undernutrition. However, growth monitoring, in various forms, is conducted in a number of national nutrition programs and thus has potential as a useful contact point for nutrition counseling messages focused on the improved growth of the child.<sup>62</sup> While GMP has mainly focused on monitoring the weight of children, there is now increased interest in measuring linear growth. Currently evidence to support linear growth monitoring is scarce, however NPDA users should be aware of ongoing efforts to investigate the feasibility of measuring linear growth. GMP can be conducted at facilities and/or in communities, however, the NPDA focuses on community-based GMP.

#### Community-Based Growth Monitoring and Promotion

<b>Brief Summary Description</b>	Approach implemented at the community level to prevent undernutrition and improve child growth through monthly monitoring of child weight gain, (although there is growing consensus that monitoring height/length gain may be more critical), one-on-one counseling and negotiation for behavior change, home visits, and integration with other health services. Action is taken based on whether a child has gained adequate weight, not by a nutritional status cutoff point, and then identifying and addressing growth problems before the child becomes malnourished. A major benefit of high-quality programs includes that caregivers witness their child's weight gain and thereby receive reinforcement for improving their practices. Additionally, community-based growth monitoring and promotion provides an opportunity for advocacy with community leaders and other persons of influence to become involved in seeking local solutions to the problem of growth faltering and undernutrition.
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<sup>62</sup> Ashworth, A. et al. 2008. "Growth Monitoring and Promotion: Review of Evidence and Impact." *Maternal and Child Nutrition*. Vol. 4, pp. 86–117.

<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Improve child growth</li> <li>• Prevent undernutrition</li> <li>• Early detection of growth faltering and undernutrition</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>• Children 0–23 months</li> </ul>
<b>Criteria (when to use this approach)</b>	<ul style="list-style-type: none"> <li>• Best used in communities with high prevalence of mild or moderate underweight or stunting</li> <li>• Requires careful training of volunteers in growth charting, interpreting charts, and counseling caregivers</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Creates community motivation/sensitization to reduce underweight</li> <li>• Uses trained community-selected volunteers</li> <li>• Uses “inadequate weight gain” as early indicator of growth faltering</li> <li>• Referral and counter-referral system with health posts/centers</li> <li>• Uses counseling and negotiation specific to the individual child</li> <li>• Home visits</li> <li>• Active community involvement in problem solving and planning</li> <li>• Potential contact for measuring mid-upper arm circumference, edema screening, and referral for SAM</li> <li>• Addresses many causes of poor growth, not just the symptoms, and is closely tied to promoting evidence-based interventions</li> </ul>
<b>Needed Elements for Quality Programming by Implementers</b>	<p>For the individual child:</p> <ul style="list-style-type: none"> <li>• Routine monthly assessment of growth status</li> <li>• Feedback on growth and assessment of health and feeding</li> <li>• Individualized counseling on feeding and child care practices and negotiating adoption of improved practices</li> <li>• Follow-up and referral following program standards</li> </ul> <p>Across the whole program:</p> <ul style="list-style-type: none"> <li>• Quality counseling</li> <li>• Analysis of causes of inadequate growth with guidelines for taking actions</li> <li>• A large network of community-based workers or volunteers (2–3 community workers per 20 children) to be effective</li> <li>• Supportive and quality monitoring and supervision</li> <li>• Community participation in planning</li> <li>• Caretaker involvement in monitoring the child’s weight gain</li> <li>• A central location within a reasonable walk for most community members</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Promoting the Growth of Children: What Works. Rationale and Guidance for Programs</a> (The World Bank 1996)</li> <li>• <a href="#">A Cost Analysis of the Honduras Community-Based Integrated Child Care Program</a> (World Bank HNP Discussion Paper 2003)</li> <li>• <a href="#">Growth Monitoring and Promotion: A Review of the Evidence</a> (<i>Maternal and Child Nutrition</i> 2008, Vol. 4, Issue Supplement s1)</li> </ul>

The following provides considerations that should be reviewed in deciding whether to include or leverage a GMP component in your program.

- **Participation:** If there is adequate access but low participation (less than 80% of the target population participating regularly in the program), an NGO can work to mobilize the community to increase participation or link with another program that provides services on at least a monthly basis.

- **Consistency of service:** The standard frequency for community-based GMP is monthly sessions, although it is done less frequently in some locations. Community-based GMP should be done consistently, and NGOs can work with stakeholders to increase the frequency and quality of sessions, as necessary.
- **Materials:** NGOs can assist governments by ensuring that the appropriate scales, growth charts, registers, and counseling materials are available in both facility- and community-based services.
- **Quality of measuring/weighing:** If the quality of anthropometric measurements or recording needs improvement, NGOs can assist governments to provide good quality training for staff and volunteers in weighing and measuring children and keeping correct records.
- **Counseling and negotiation:** This is a key area where NGOs can improve the quality of programs and build capacity for good quality counseling through creating appropriate counseling guides, strengthening nutrition counseling skills of health facility staff and volunteers, and/or improving their capacity to negotiate adoption of improved practices among mothers and caregivers.
- **Growth faltering:** If current services fail to address the needs of children as their growth begins to falter, NGOs can improve counseling and negotiation skills and advocate with the government to ensure that counseling protocols address the needs of children before they become malnourished.
- **Community ownership of data:** NGOs can create visual charts to enable the community to understand the prevalence of undernutrition and trends in the community, and mobilize the community to decide on community- and individual-based actions to improve childhood nutritional status.
- **Follow-up and referral:** Follow-up and referral is often a weak link in the system and one where NGOs can strengthen existing services to better serve children. There should be a good system in place to refer children who need additional care to a health facility and to provide follow-up and home visits with caregivers on their child's status.
- **Complementary services for children and women:** NGOs can help the government connect GMP sessions with other services for children, such as immunization, community-integrated management of childhood illness, vitamin supplementation, and deworming, and link into community health programs for women. These health services links can serve as another contact point for consistent message delivery.

If there is no GMP program currently operating, carefully consider whether the program you are designing would have the financial and technical resources needed to implement a program that would meet the quality standards summarized in the table on community-based GMP and the implications for sustainability when the program finishes. If there is not a GMP platform to build upon, consider focusing on program approaches to increase the quality and coverage of age-appropriate nutrition counseling at all child health

contacts (well-child and sick-child visits) and during home visits from community health workers and volunteers.<sup>63</sup>

## Linking to Health Services

To expand the potential coverage and impact of the program interventions, program designers should look for all possible ways to integrate and link community-based nutrition activities and messages into existing health services. The ENA Framework recommends integrating the essential nutrition actions into the health services sector, in particular at six commonly found contact points: antenatal care, delivery care, postpartum care of mother and child, immunization, sick-child visits, and well-baby visits (including counseling and GMP). These health sector contact points occur at the facility and community levels. Within the SBC strategy, it is recommended to integrate nutrition counseling into all possible contact points.

An element of linking and integrating community-based programs effectively into existing health services is through development, maintenance, and refinement of strong referral and counter-referral mechanisms. When a child becomes sick and/or malnourished, early detection in households and communities and timely referral and treatment are critical elements of program design, even within prevention programs. Functional referral and counter-referral coordination between community and facility levels is essential, and NGO programs can provide guidance, training, and tools to health and nutrition providers (e.g., traditional birth attendants, counselors, and community health workers) on when and where to refer women and children for specific services.

Program development should include a solid review and understanding of the strengths and weaknesses of the health system in which a program is operating and opportunities to leverage contact points for nutrition. A plan or strategy to work with and strengthen that health system is an important development objective and will help the program to achieve its goals. Although changing the entire health system is beyond the scope of a community-based program, the NGO can influence and improve the health system through policy advocacy; improving financial and physical access to health services through community-based programming that is linked with the public health system; supporting training and other capacity-building initiatives at local or district health facilities; providing guidance on supervision; helping to develop guidelines and protocols to support the establishment or improvement of systems for referral, supervision, training and tracking; and managing health and nutrition information.

Integration of nutrition within the health sector and across other sectors is encouraged. Nutrition is an expansive and multi-sectoral field, and NPDA users are encouraged to link nutrition activities and messages to delivery platforms in other sectors, as feasible and appropriate, including food security, agriculture, education, emergency, water and sanitation, and/or livelihoods programs, among others.

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<sup>63</sup> Ashworth, A. et al. 2008. "Growth Monitoring and Promotion: Review of Evidence and Impact." *Maternal and Child Nutrition*. Vol. 4, pp. 86–117.



Keep these cross-cutting approaches in mind as you move through Sections B-E of Step 4, in which you will indicate in the workbook which program approaches, including cross-cutting approaches, you are considering. Remember, a much more thoughtful and complete SBC strategy will be developed during the initial phases of program implementation.

## STEP 4

## INFANT AND YOUNG CHILD FEEDING

### SECTION B

*Step 4, Section B begins on page 59 of the Workbook*

Use this section if your data show that prevalence of some or all of the IYCF indicators are at less than 80% (or greater than 20% for negative behaviors) and need to be addressed to improve childhood nutritional status.

IYCF approaches are specifically targeted to the age range of 0–24 months and are composed of the ENA of immediate, exclusive, and continued breastfeeding, and a number of child feeding practices for well and sick children. Improving IYCF practices contributes to reduced child morbidity, stunting, and mortality. Breastfeeding is recognized as the most effective of the preventive public health interventions for child survival and has the potential to reduce child mortality by 11.6%.<sup>64</sup> Where children are undernourished, one or more aspects of IYCF practices will most likely be suboptimal and a contributing factor to undernutrition.

After reviewing your answers to the questions in Steps 1–4 in the Workbook, discuss the options in this section with your team. Record your conclusions in the Workbook in Step 4, Section B. The approaches addressed in this section are:

- Training health providers
- Social and behavior change
  - Influencing caregiver practices
  - Strengthening family and community support
  - Organizing peer support groups
  - Building IYCF messages into other programs
- Increasing the nutritional adequacy (quantity and quality) of complementary foods
- Addressing water and hygiene issues
- Resource transfer
- Advocacy and policy environment

### Training Health Providers

Health care providers at the facility and community level provide a valuable source of counseling and advice to caregivers. Consider the potential contact points for pregnant

<sup>64</sup> Black, R.E. et al. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *The Lancet*. Vol. 382, No. 9890, pp. 427–451.

women and caregivers and how training and provision of counseling cards can help providers deliver and reinforce the same message across various contact points. Essential IYCF messages can be delivered through a variety of providers and specific providers can be trained as IYCF counselors. For more information, please refer to the table on counseling at key contact points within Step 4, Section A, Cross-Cutting Approaches, Social and Behavior Change.

Health providers at both the facility and community levels are also critical allies in addressing issues related to the feeding and care of sick children. Programmers should ensure that the following services for sick children are available and accessible:

- Promoting recommended feeding practices during illness, including continued breastfeeding (see Annex 2. Key Messages Associated with Each ENA)
- Oral rehydration solution and zinc treatment for diarrhea
- Antibiotics for pneumonia
- Antimalarials for malaria
- Vitamin A treatment for measles

## Social and Behavior Change

Many of the practices to improve IYCF rely on SBC approaches. SBC is covered in more detail in Step 4, Section A, but several relevant approaches are mentioned here.

### Influencing Caregiver Practices

According to the 2003 WHO/UNICEF *Global Strategy for Infant and Young Child Feeding*, caregivers have a right to have “access to objective, consistent, and complete information, free from commercial influence. Specifically, they need to know about the recommended period of exclusive and continued breastfeeding, timing of introduction of complementary foods, what types of food to give, how much and how often, and how to feed these foods safely” (p. 12). One important step in influencing caregiver knowledge and practices is conducting good formative research to gain a better understanding of the barriers to successful nutrition practices in program implementation. Several potential approaches to formative research include Trials of Improved Practices, Positive Deviance Inquiries, Doer/Non-Doer Analysis, and Barrier Analysis.<sup>65</sup> Sample questions to consider in designing appropriate messages include:

- When, how, and what do people normally feed their children?
- What are examples of positive local feeding practices?
- How are foods prepared for infants and young children?
- What do other family members eat that infants do not?
- How are infant feeding practices today different from what grandmothers practiced?

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<sup>65</sup> For more information, see USAID. 2007. “Child Survival and Health Grants Program, Technical Reference Materials: Nutrition.”

Step 4, Section A, Cross-Cutting Approaches includes more information on influencing caregiver knowledge and practices.

### **Strengthening Family and Community Support**

Families and communities provide a critical support system for pregnant and breastfeeding mothers and mothers of young children. The cultural norms and expectations of fathers, grandmothers, and mothers-in-law (for example) influence the practices of mothers. Any SBC approach to change cultural norms or influence caregivers needs to take into consideration these key influencers. Since a common barrier to breastfeeding is the inability to breastfeed while working, the family and community are key advocates who can help negotiate changes in practices and norms. Community mobilization approaches are extremely important in engaging the community for change. For more information, please refer to the box on community mobilization in Step 4, Section A, Cross-Cutting Approaches.

### **Organizing Peer Support Groups**

Especially in the case of breastfeeding, peer support groups have been an effective approach in providing social support and helping mothers overcome some of the barriers to breastfeeding. For more information, please refer to the table on support groups in Step 4, Section A, Cross-Cutting Approaches.

### **Building IYCF Messages into Other Programs**

Many of the approaches covered in the NPDA lend themselves to the incorporation of IYCF messages. IYCF messages can be incorporated as appropriate into efforts such as Positive Deviance (PD)/Hearth sessions, community-based GMP, community-integrated management of childhood illness, care groups, and child health weeks.

### **Increasing the Nutritional Adequacy of Complementary Foods**

Global guidelines recommend feeding a variety of foods daily to young children to ensure adequate nutrient intake, including animal products, fortified foods, and vitamin A-rich vegetables and fruits. Increasing the nutrient content and adequacy of foods fed to infants and young children cuts across all of the intervention areas covered in the NPDA, including SBC, food-based approaches, IYCF, micronutrient approaches, maternal nutrition, and treatment of the sick child.

## Programs to Improve Child Feeding Practices: Lessons Learned

Applying lessons learned in the field leads to more effective programs and helps researchers identify the key issues that need to be addressed during consultative research and program planning. The following points summarize conclusions drawn from reviews of efforts to improve child feeding practices in Africa and other parts of the world.

1. Formative research has shown that age-specific feeding problems are similar in most countries, despite individual and regional variation in foods given. Being aware of the particular problem for an age group helps to focus the formative research and the program actions.
2. Programs should emphasize improving child feeding practices rather than only the foods consumed by young children.
3. Feeding a child who is sick or anorexic is a major problem that requires different solutions for improved feeding of the child. Do not omit this aspect.
4. Motivations for feeding practices must be understood before behavior can be changed. In most cultures feeding has meanings and purposes beyond simply nourishing the body: practices may be related to social organization, religious beliefs, and family dynamics. Promoting improved practices should reference the important motivations reported by families with young children.
5. Common constraints that may limit willingness or ability to change behavior must be addressed. Programs must be realistic about what can be accomplished if, for example, economic constraints are great or mothers feel they have no time to do more.
6. The influence of family members and knowledgeable community members on child feeding practices should be assessed. These individuals should be considered in the formative research and the program.
7. Methods of counseling and communication are as important as the messages conveyed, so attention must be paid to facilitating the development of counseling skills and providing the time to apply them. Formative research also needs to assess the knowledge, motivations, and constraints of service providers.

Source: Dickin, K.; Griffiths, M.; and Piwoz, E. 1997. *Designing by Dialogue: A Program Planners' Guide to Consultative Research for Improving Young Child Feeding*. The Sara Project.

## Addressing Water, Sanitation, and Hygiene Issues

Nutrition programs can integrate key water, sanitation, and hygiene improvement initiatives, and work with water, sanitation, and hygiene programs to address issues of access to improved water and sanitation. For example, if there are such programs operating in the same area, consider how you can work together to promote access to safe water and appropriate sanitation, as well as promote use of treated water; handwashing with soap; improved food preparation, serving, and storage; and safe disposal of human and animal feces. Poor water, sanitation, and hygiene, including food hygiene, are the cause of a significant proportion of diarrhea cases in young children, and emerging evidence on environmental enteropathy as an important cause of stunting indicate the importance of water, sanitation, and hygiene for improved nutritional status. For more information, refer to Step 4, Section E, Underlying Disease Burden and Water, Hygiene, and Sanitation information under Key Concepts.

## Resource Transfer

If food availability and access are limited in the program area, SBC alone may not be sufficient to achieve impact. It may be appropriate to consider additional resource transfers within the program through actions such as adding food supplementation (see table below) or conditional cash transfers to the behavior change approach.<sup>66,67</sup> These approaches work to improve IYCF by conditionally transferring and ensuring resources to households with children under 2 years of age, providing short-term support to protect and ensure adequate consumption, and requiring participation in essential health and nutrition activities that will improve nutrition in the long-term. The conditions may include participation in SBC programs, accessing essential health and nutrition services, or other activities deemed essential to improving nutrition.

No child under 6 months of age should be the direct recipient of targeted food assistance. Rather, programs should take actions to support and promote immediate and exclusive breastfeeding and, when appropriate, provide pregnant and lactating mothers with food assistance until the child is 6 months of age. In food insecure contexts, programmers can consider assisting children 6–23 months of age and their vulnerable households with food supplementation/food assistance. Guidelines are provided in the following table.

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<sup>66</sup> Gentilini, U. 2007 *Cash and Food Transfers: A Primer*. Rome, Italy: World Food Programme.

<sup>67</sup> Both food supplementation and conditional cash transfer programs with nutrition education are identified as interventions with sufficient evidence to implement in specific situational contexts in Bhutta, Z. et al. 2008. "What Works? Interventions for Maternal and Child Undernutrition and Survival." *The Lancet*. Vol. 371 (9610), pp. 417–40.

<b>Food Supplementation/Food Assistance: Prevention</b>	
<b>Brief Summary Description</b>	In food-insecure environments, programs may choose to supplement the diets of women, children, and/or households to help them meet their macro and micronutrient needs. Food supplements may be in the form of international food aid (including fortified-blended foods and vitamin A-fortified oil) or locally or regionally purchased foods. The food rations are generally distributed on a monthly basis. To be most effective, food supplementation should be accompanied by essential health and nutrition services and SBC programming. One food supplementation approach, the preventing malnutrition in children under 2 approach (PM2A) is a specific, tested package of actions aimed at preventing undernutrition. Although PM2A has been found to be more effective in reducing chronic malnutrition than recuperative programs, it may not be appropriate in all program contexts. There is also a great deal of experience with the use of food supplementation to meet gaps in the diet in emergency situations; some lessons are applicable in developing contexts.
<b>Objective</b>	<ul style="list-style-type: none"> <li>• Reduce prevalence of chronic malnutrition</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• All children 6–23 months of age</li> <li>• Pregnant women</li> <li>• Lactating women from delivery until the child is 6 months of age</li> <li>• Households of the participant women and children</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Food-insecure environment</li> <li>• Evidence that the area can absorb the quantity of food supplementation needed and that the food supplementation will not displace local food production (Bellmon Estimation Studies for Title II is a resource)</li> <li>• Logistical capacity for transport, storage, and management of food commodity</li> <li>• Health services available (or ability to work to strengthen health services)</li> <li>• Child stunting and/or underweight should be high (&gt; 30% or 20%, respectively)</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Food is provided to vulnerable people who could not otherwise access it</li> <li>• Opportunity to link with agriculture and livelihood sectors and improve food access while also improving utilization</li> <li>• Food supplementation may also be targeted on a seasonal basis, based on local context and preferences</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Provision of or access to basic essential health services</li> <li>• Complementary SBC programming focused on maternal nutrition, IYCF, hygiene, and health-seeking behaviors</li> <li>• Close coordination with health, nutrition, and food security programs and services</li> <li>• Formative research to adapt program to local conditions, including a seasonal calendar of when food needs are greatest</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">USAID Office of Food for Peace</a></li> <li>• <a href="#">Impact and Cost-Effectiveness of the Preventing Malnutrition in Children under 2 Approach</a> (FANTA)</li> <li>• <a href="#">World Food Programme</a></li> </ul>

<b>Conditional Cash Transfers<sup>68</sup></b>	
<b>Brief Summary Description</b>	Conditional cash transfer programs provide cash payments to poor households that fulfill program-mandated requirements, such as participation in certain nutrition programs (e.g., behavior change communication, GMP, supplementation, and attending health services). These programs aim to alleviate poverty in the short and long term through simultaneous cash transfers and investments in health, education, social services, and women's empowerment. The cash payment given to the household encourages participation in health and nutrition programs, reduces resource constraints/improves purchasing power, and encourages long-term investment in human capital. Program evaluations have found that conditional cash transfer programs have improved nutritional status in children (stunting) and school enrollment, and have reduced illness. The programs tend to be large scale and government-run. Results are very dependent on the quality of program implementation and targeting. Administering and monitoring conditional cash transfers can be costly.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Break the intergenerational cycle of poverty</li> <li>• Provide incentive to participate in essential health and nutrition services</li> <li>• Promote behavior change</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Poor households with children under 2 years of age</li> <li>• Women are generally the recipients of the cash because they are more likely to invest it in the well-being of their family</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Nutrition and health services/programs that beneficiaries must participate in are in place, accessible, and of good quality</li> <li>• Government/community support of the program</li> <li>• Program takes place in areas where families are unlikely or unable to invest their own resources in children's long-term human capital (e.g., health services are available and of good quality, but underutilized)</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Resource transfer is cash</li> <li>• There are conditions for receiving the cash</li> <li>• Comprehensive program addressing resource constraints, poverty, health-seeking behaviors, and behavior change</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Close monitoring of program operations, targeting, and conditionality</li> <li>• Strong administrative supervision</li> <li>• Links between all related sectors (health, education, social services)</li> <li>• Formative research to understand reasons why people do or do not participate in health and nutrition services</li> <li>• Health system strengthening to support increased demand from conditional cash transfers</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#"><i>Can Conditional Cash Transfer Programs Play a Greater Role in Reducing Child Undernutrition?</i></a> (The World Bank 2008)</li> <li>• <a href="#"><i>Conditional Cash Transfer Programs: An Effective Tool for Poverty Alleviation?</i></a> (Asian Development Bank 2008)</li> <li>• <a href="#"><i>Nuts and Bolts of the Bolsa Familia Program: Implementing CCTs in a Decentralized Context</i></a> (World Bank 2007)</li> </ul>

<sup>68</sup> Bassett, L. 2008. *Can Conditional Cash Transfer Programs Play a Greater Role in Reducing Child Undernutrition?* SP Discussion Paper No. 0835, Social Protection and Labor. Washington, DC: The World Bank.

## Advocacy and Policy Environment

If there are significant policy barriers to implementing the approaches mentioned, it may be necessary to get involved in advocacy efforts. An example of a policy barrier is the promotion of infant formula in hospitals and mass media, which can negatively influence a mother's breastfeeding practices. A program may need to advocate for a policy that bans formula promotion in hospitals in order to create a positive enabling environment for optimal breastfeeding practices. In Step 3 of the workbook, you determined if the country signed the International Code for the Marketing of Breast-milk Substitutes and if it has Baby-Friendly Hospitals. If the answer to any of these questions is no, consider partnering with other organizations working to influence key decision makers.



Which approaches will you use? Complete the boxes in Step 4, Section B of the Workbook.

### STEP 4

## MATERNAL NUTRITION

### SECTION C

*Step 4, Section C begins on page 61 of the Workbook*

Use this section if you have determined that the maternal health and nutrition indicators are at a level of public health significance and need to be addressed to improve maternal, newborn, and child nutritional status. Step 1 focused on both maternal and newborn indicators in the target area to determine their importance in an approach to address childhood nutrition. This section is focused on the following potential approaches for maternal nutrition that support infant and childhood nutrition:

- SBC related to maternal nutrition
- Food-based approaches to improve the diet
- Micronutrient supplementation of women
- Complementary maternal health services for anemia prevention
- Referral systems

Users should also refer to Step 4, Section A for cross-cutting approaches. After reviewing your answers to the questions in Steps 1–4 in the Workbook, discuss the options in this section with your team. Record your conclusions in the Workbook in Step 4, Section C.

### Social and Behavior Change Related to Maternal Nutrition

SBC to support women and families in practicing optimal nutrition behaviors is essential to achieving improved maternal nutritional status. Step 4, Section A provides guidance on potential SBC approaches and contact points, including community mobilization, care groups, mass media, support groups, home visits, counseling, and community edutainment. Some key topics that may be incorporated into an SBC strategy to improve maternal nutrition status include:

- Increasing calorie and protein consumption for pregnant and lactating women based on national recommendations

- Promoting dietary diversity:
  - Nutrition education to promote consumption of local, nutrient-rich food sources, especially those high in vitamin A, iron, and iodine
  - Promoting consumption of foods that enhance absorption of iron such as citrus fruits or other foods with vitamin C
- Promoting consumption of fortified foods:
  - Advocate for increased availability of and access to these foods at the community level
  - Work with the community to create demand for fortified foods (identify what the barriers to consumption might be)
- Promoting uptake of key maternal nutrition services, including:
  - Antenatal care
  - Nutrition counseling
  - Micronutrient supplementation
  - Malaria prevention and treatment
  - Prevention and treatment of parasitic worm infections
- Promoting other community/household support for pregnant/lactating women, including:
  - Reduced workload
  - Care seeking

### Food-Based Approaches to Improve the Diet

A key strategy to improve maternal nutritional status is to improve the quality of women's diets by improving access to and consumption of protein and micronutrient-rich foods. These include approaches to increase production and seasonal availability of nutrient-rich foods, to promote consumption of nutrient-rich foods (including fortified foods), and to improve the bioavailability of nutrients in foods consumed. Details on these approaches were discussed in Step 4, Section A, Cross-Cutting Approaches, Food-Based Approaches.

### Micronutrient Supplementation for Women

**Vitamin A:** Many countries have policies and/or programs for large-scale, preventive, high-dose vitamin A supplementation of postpartum women (within 6 weeks of delivery). However, according to 2011 WHO guidelines, vitamin A supplementation in postpartum women is not recommended as a public health intervention for the prevention of maternal and infant morbidity and mortality, but women should increase their intake of vitamin A-rich foods in the postpartum period.<sup>69</sup> Additionally, vitamin A supplementation is only recommended for pregnant women when vitamin A deficiency is a severe public health problem in order to prevent night blindness. Some women may also need therapeutic treatment for xerophthalmia or Bitot's spots.

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<sup>69</sup> WHO. 2011. *Guideline: Vitamin A Supplementation in Postpartum Women*. Geneva: WHO.

**Iron:** As part of a minimum package of maternal care during pregnancy, most countries have protocols in place for the provision of iron/folic acid supplements to pregnant and postpartum women (especially in settings where anemia prevalence  $\geq 40\%$ ). The standard daily recommendations are to give women one tablet per day with 60 mg of iron and 400  $\mu\text{g}$  of folic acid for 6 months during pregnancy (180 iron/folic acid supplements) and for 3 months after delivery or abortion when anemia prevalence is  $\geq 40\%$  or the 6 months of iron/folic acid supplementation during pregnancy is not achieved; with amounts doubling for women with anemia.<sup>70,71</sup> In areas where the anemia prevalence of pregnant women is less than 20%, it is recommended to have a weekly supplement where 1 tablet = 120 mg of iron and 2,800  $\mu\text{g}$  of folic acid.<sup>72</sup>

If your country of operation has a micronutrient supplementation policy in place, consider including some or all of the following activities:

- Community organization and awareness promotion to increase participation
- Logistical support and transportation for outreach from health facilities
- Support to address any micronutrient supply issues

Activities may be also needed to strengthen therapeutic supplementation of iron for women with severe anemia. This treatment is complicated and requires access and referral to skilled technical assistance and/or clinical care.

If there is not a micronutrient supplementation policy in effect, consider partnering with other organizations to conduct advocacy efforts.

### Complementary Maternal Health Services for Anemia Prevention

In some locations, recurring bouts of malaria or a high prevalence of hookworm infection may be key causes of maternal anemia.<sup>73</sup> In these areas, programs should look at approaches for the prevention and treatment of malaria and hookworm infection to reduce the prevalence of anemia. Governments often have policies or programs in place regarding:

- Intermittent preventive treatment of malaria during pregnancy (at every antenatal care visit after the first trimester) in endemic areas
- Providing access to long-lasting insecticide treated nets
- Deworming after the first trimester of pregnancy
- Promoting healthy and timely spacing of births (at least 2 year intervals) using modern methods of family planning including the lactational amenorrhea method.

<sup>70</sup> WHO may recommend new dosing regimens in the near future.

<sup>71</sup> WHO; United Nations Population Fund; UNICEF; and The World Bank. 2006. *Pregnancy, Childbirth, Postpartum and Newborn Care: A Guide for Essential Practice*. Geneva: WHO.

<sup>72</sup> WHO. 2012. *Guideline: Intermittent Iron and Folic Acid Supplementation in Non-Anaemic Pregnant Women*. Geneva: WHO.

<sup>73</sup> Galloway, R. 2003. *Anemia Prevention and Control: What Works? Part 1 and Part 2*. USAID, World Bank, PAHO/WHO, Micronutrient Initiative, FAO, and UNICEF.

If there are policies in place, consider:

- Promoting the services
- Providing training to health service staff
- Community mobilization and awareness campaigns
- Supporting health facilities to address supply issues

## Referral Systems

Even with preventive activities in place, some women will require treatment for nutritional deficiencies. NGO programs can provide guidance and training to traditional birth attendants, counselors, and community health workers on when and where to refer women for specific services. More detailed guidance on linking with health systems is provided in Step 4, Section A, Cross-Cutting Approaches, Linking with Health Systems.



Which approaches will you use? Complete the boxes in Step 4, Section C of the Workbook.

## STEP 4

### SECTION D

## MICRONUTRIENT STATUS OF CHILDREN

*Step 4, Section D begins on page 63 of the Workbook*

Use this section if you determined that micronutrient status of children may be a priority issue in the program area and you are considering incorporating micronutrient approaches. After reviewing your answers to the questions in Steps 1–4 in the Workbook, discuss the options in this section with your team. Record your conclusions in the Workbook in Step 4, Section D.

Much like the detailed approaches covered in other sections, there are several child micronutrient approaches to be considered:

- Social and behavior change related to child micronutrients
- Food-based approaches for children
- Micronutrient supplementation for children
- Delayed cord clamping

### Social and Behavior Change Related to Child Micronutrients

SBC efforts to promote consumption of locally available and accessible micronutrient-rich food sources should be part of a comprehensive nutrition behavior change strategy for long-term and sustainable improvements.

#### Vitamin A

If vitamin A-rich foods are available, consider:

- Working with communities to develop a food calendar of locally available foods rich in vitamin A

- Promoting consumption of the foods within the overall SBC approach, with special targeting to change behaviors of vulnerable groups. Specifically, promote:
  - Consumption of vitamin A animal source foods and beta-carotene-rich foods (which is the precursor in plants to vitamin A), especially for children 6–23 months of age as part of complementary feeding messages for behavior change and behavior change messages for pregnant and lactating women
  - Consumption of diets and recipes that include foods that are dark green, yellow, and orange

If vitamin A-rich foods are not available, consider food-based approaches (discussed earlier) within an SBC strategy such as promoting vitamin A-rich food production in home gardens or consumption of vitamin A-rich fortified foods such as oil or sugar (if available), with a focus on consumption at the household level.

### Iron

If iron-rich animal source foods are not available, consider:

- Working with communities to develop a food calendar of locally available foods rich in iron and vitamin C
- Promoting increased production of livestock for home consumption and promoting the consumption of these foods by children 6–23 months<sup>74</sup>
- Promoting the consumption of foods high in iron in such a way to maximize absorption within a larger behavior change approach
- Promoting the consumption of foods with vitamin C along with foods high in iron, which promotes absorption
- Promoting hot beverage options other than tea and coffee, the ingestion of which inhibits absorption, or consuming tea and coffee between meals

### Zinc

Animal products are the best source of zinc. Inhibitors, such as foods with high-phytate content, including grains, limit zinc absorption. Consider adding food-based approaches such as cooking, fermentation, and sprouting to improve the bioavailability of zinc (and reduce phytic acid) within the SBC strategy.

## Food-Based Approaches for Children

Food-based approaches are made up of a combination of approaches to improve dietary quality and dietary diversity, a common measure of dietary quality. The most common approaches can be organized around those that will increase the production and availability of micronutrient-rich foods; increase dietary intake of micronutrient-rich foods, including the promotion and support of breastfeeding, recommended IYCF practices, and consumption of iodized salt; and increase bioavailability of micronutrients (the ability of the body to absorb micronutrients). For more information on food-based approaches, see Step 4, Section A, Cross-Cutting Approaches, Food-Based Approaches.

<sup>74</sup> Care should be taken to ensure children's exposure to animal feces is minimized.

## Micronutrient Supplementation for Children

### Vitamin A

Many countries where child mortality rates are high (> 70 deaths/1,000 live births) have policies for twice-yearly vitamin A supplementation of children 6–59 months of age. Multi-site studies have shown that successful implementation with high coverage of 80% or more, results in an average 23% reduction in child mortality. Large-scale supplementation is often combined with outreach efforts for immunization with periodic campaigns conducted by all health services. This approach may be called the “Child Health Day” or “Child Health Week.”

Child Health Weeks/Days	
<b>Brief Summary Description</b>	These should occur every 6 months to deliver vitamin A supplements and other preventive health services to children at the community level. In addition to vitamin A, services have included: catch-up immunization, providing iron/folic acid to pregnant women, deworming, iodized salt testing, distribution of long lasting insecticide-treated nets, screening for malnutrition, and promotion of infant and young child nutrition.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Increase coverage of vitamin A supplementation</li> <li>• Increase coverage of other nutrition approaches</li> <li>• Provide deworming</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>• Children 0–59 months of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Vitamin A program in the country</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• High coverage rates</li> <li>• Feasible in diverse settings</li> <li>• Community census and social mobilization</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Best suited for areas with high prevalence of vitamin A deficiency</li> <li>• Requires coordination with district health plan and staff</li> <li>• Need to assure adequate supply</li> <li>• Volunteers and supervisors need to be trained</li> <li>• Substantial social mobilization</li> <li>• Follow-up/record-keeping important</li> <li>• Part of a larger nutrition strategy</li> </ul>

If the country has a micronutrient supplementation policy in place, only a modest level of effort will be needed to provide support for the policy. Consider providing:

- Community organization and awareness promotion to increase participation
- Logistic support, including the coordination of transportation for outreach from health facilities
- Support and advocacy to address any micronutrient supply issues

If there is no policy in effect, consider partnering with other organizations to conduct advocacy efforts in micronutrient supplementation.

Even with the above approaches, some children will need therapeutic treatment for potentially complicated illnesses, such as xerophthalmia or Bitot’s spots. Additionally,

therapeutic vitamin A supplementation is also provided to address measles and other severe infections. Activities may be needed to strengthen clinical care use of therapeutic supplementation. This treatment is complicated and requires access to skilled technical assistance and/or clinical care.

## Iron

Iron requirements are highest in children under 2 years of age. In their first 6 months, children rely on their iron stores at birth; delaying cord clamping for 1–3 minutes will maximize these stores. While breast milk has low amounts of iron, promoting exclusive breastfeeding is a strategy to protect iron stores in children by preventing diarrhea and other infections. Children under 6 months of age who are preterm or have low birth weight need additional iron and folic acid, which can be provided through supplements. Children 6–23 months also generally need additional iron and folic acid through supplements (12.5 mg daily where prevalence of anemia in that age group is greater than 40%),<sup>75</sup> animal source foods, or foods that are fortified to meet their iron requirements.

Around 50% of anemia is caused by iron deficiency.<sup>76</sup> Other causes of anemia are helminth infestation, infections (such as malaria), other nutritional deficiencies (especially folate and vitamins B12, A, and C), and genetic conditions. Thus addressing more than just iron deficiency is critical to preventing and addressing anemia in most countries. In all areas, even where malaria is endemic, studies have shown that iron supplementation benefits iron-deficient children 6–23 months by reducing serious morbidity and preventing cognitive damage. When giving iron supplements routinely to children 6–23 months and children under 6 months who are preterm or have low birth weight in malaria endemic areas, it is important to implement complementary programs to prevent, treat, and monitor malaria and other infections.<sup>77</sup> In areas where these programs and services are lacking, there is an increased risk of adverse effects when giving iron, but it is still recommended that children receive iron supplements when they are diagnosed with anemia or are at risk of iron deficiency.<sup>78</sup> Giving children 1–5 years of age routine, twice-yearly deworming treatment improves nutritional status for a number of micronutrients, including iron; improves child development; and reduces undernutrition.

If the country has an iron supplementation policy in place, only a modest level of effort will be needed to provide support for the policy. Consider providing:

- Community organization and awareness promotion to increase participation

<sup>75</sup> Stoltzfus, R. and Dreyfuss, M. 1998. *Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anaemia*. Washington, DC: ILSI Press.

<sup>76</sup> Stoltzfus, R.; Mullany, L.; and Black, R.E. 2004. "Iron Deficiency Anaemia." In *Comparative Quantification of Health Risks: Global and regional burden of disease attributable to selected major risk factors*. Vol. 1. Ezzati, M.; Lopez, A.D.; Rodgers, A.; and Murray, C.J.L. (eds.). Geneva: WHO. pp. 163–209.

<sup>77</sup> Ojukwu, J.U.; Okebe, J.U.; Yahav, D.; and Paul, M. 2009. "Oral Iron Supplementation for Preventing or Treating Anaemia among Children in Malaria-Endemic Areas." *Cochrane Database of Systematic Reviews*. Issue 3.

<sup>78</sup> WHO. 2006. "Iron Supplementation of Young Children in Regions Where Malaria Transmission is Intense and Infectious Disease is Highly Prevalent." Geneva: WHO.

- Individual counseling to mothers of children receiving iron supplements to ensure children receive the entire course of supplementation and manage any side effects
- Logistical support for outreach from health facilities
- Support to address any micronutrient supply issues
- Support to ensure training and job aids are available to assist health workers with correctly screening for and identifying anemia

If there is not a policy in effect, consider partnering with other organizations to conduct advocacy efforts.

### Zinc

The 2008 *Lancet* series on maternal and child undernutrition has reported that there is sufficient evidence for recommending large-scale supplementation of zinc for infants and children. Check for recent policy developments with relevant ministries before pursuing any efforts. Note that up-to-date data are not routinely gathered on zinc status and the use of preventive zinc supplementation. The [Micronutrient Initiative](#) tracks progress and posts recent developments on its website. The use of zinc to address diarrhea is included in Step 4, Section E, Underlying Disease Burden. [The Countdown to 2015: Maternal, Newborn & Child Survival](#) reports track policy adoption of zinc protocols for the management of diarrhea.

### Iodine

In countries with iodine deficiency disorder, supplements (iodized oil capsules) may be targeted to children 7–24 months of age, especially where iodized salt is not available. Check national policies.

### Delayed Cord Clamping

Delaying cord clamping during childbirth, which is part of the Active Management of the Third Stage of Labor, has been found to build birth iron stores and help prevent infant anemia. The impact of delayed cord clamping is greatest in children of mothers with iron deficiency and children with low birth weight. If you are working with birth attendants, consider incorporating training on the proper cord clamping procedure. The correct technique is to wait to clamp the cord until the pulsing has stopped and the maximum amount of blood (and therefore iron) has passed to the newborn—typically 1–3 minutes. It is a safe and cost-effective way to reduce iron deficiency and is recommended for use in all countries, even where HIV prevalence is high.



Which approaches will you use? Complete the boxes provided in Step 4, Section D of the Workbook.

## STEP 4

# UNDERLYING DISEASE BURDEN

## SECTION E

*Step 4, Section E begins on page 65 of the Workbook*

Use this section if you have determined that the levels of illness such as diarrhea, acute respiratory infections, malaria, and HIV are at a level indicating that there must be a focus on prevention and treatment of underlying disease to address childhood undernutrition rates. After reviewing your answers to the questions in Steps 1–4, discuss the options in this section with your team. Record your conclusions in the Workbook in Step 4, Section E.

In general, programs should consider incorporating the following approaches to address the underlying disease burden:

- Linking nutrition programming with existing health programming to ensure that nutrition aspects of the underlying disease burden are addressed
- Implementing community-based health programs, such as community-integrated management of childhood illness or community case management, to address the underlying disease burden
- Providing training to community- and facility-based health workers on prevention and treatment of common illnesses and nutrition management of common illnesses
- Incorporating SBC approaches to promote healthy practices and health-seeking behavior within both nutrition and health services activities
- Promoting timely identification of danger signs for childhood illnesses and when and where to seek treatment
- Water and sanitation improvements to prevent diarrhea
- Promotion of zinc to treat and prevent subsequent cases of diarrhea
- Referring for treatment
- Advocacy if there are clear policy barriers to implementing priority interventions

The following hygiene practices should be promoted in nutrition programs to address underlying disease burden:

- Safe storage and treatment of water at the point-of-use
- Optimal handwashing techniques
- Optimal food hygiene practices based on the local context
- Sanitary disposal of human feces in sanitation facilities appropriate for the local context, including basic low-cost latrines and, where feasible, more complex systems
- Sanitary disposal of human feces in basic, low-cost sanitation facilities
- Creation of sanitary place for children to play (away from where animals live)

In populations with a high prevalence of HIV, the ENA still apply but the messages need to be modified to focus on the needs of HIV-infected individuals. Programs should follow national HIV and IYCF guidelines and consult the most recent WHO guidance.<sup>79</sup>

The following tables provide a summary of two approaches to addressing the underlying disease burden: community-integrated management of childhood illness and community case management.

<b>Community-Integrated Management of Childhood Illness</b>	
<b>Brief Summary Description</b>	Community-based program to address diarrhea, malaria, undernutrition, measles and pneumonia. Four key elements are: facility/community linkages; care and information at the community level; promotion of 16 key family practices; and coordination with other sectors.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Reduce morbidity and mortality of children under 5 years of age</li> <li>• Address diarrhea, malaria, undernutrition, measles, and pneumonia</li> <li>• Improve access to curative services</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Children 0–59 months of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• National integrated management of childhood illnesses policies and protocols</li> <li>• Collaborating health facility implementing integrated management of childhood illnesses for patient referral</li> <li>• Cadre of available community health workers or volunteers</li> <li>• High prevalence of common childhood illnesses: undernutrition, diarrhea, malaria, pneumonia, and/or measles</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Integrated approach focuses on whole child, not individual diseases</li> <li>• Community-level prevention and treatment</li> <li>• Linked with health facilities</li> <li>• Evidence-based protocols for prevention and treatment</li> <li>• Addresses interrelationships among illnesses</li> <li>• All ENA messages are part of integrated management of childhood illnesses key family practices</li> <li>• Mostly applied to children who present at health facilities or to community health workers with illness</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Involvement and commitment of the health sector</li> <li>• Training of health staff</li> <li>• Refresher courses</li> <li>• Supplies</li> <li>• Supervision</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Household and Community IMCI</a> (CORE Group)</li> </ul>

<sup>79</sup> WHO. 2009. *HIV and Infant Feeding: Revised Principles and Recommendations*. Geneva: WHO.

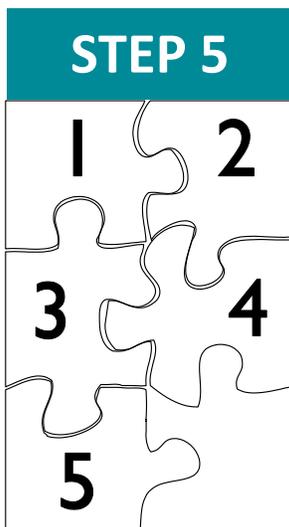
## Community Case Management

<b>Brief Summary Description</b>	An approach to deliver community-based, life-saving curative interventions for common, serious childhood infections including: pneumonia, diarrhea, malaria, and newborn sepsis. It relies on trained, supervised community members to provide health services. The interventions are: antibiotics for pneumonia, dysentery, and newborn sepsis; oral rehydration therapy; antimalarials; zinc; and vitamin A.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Reduce mortality from common childhood illnesses among children 0–59 months of age</li> <li>• Improve access to curative services</li> <li>• Address pneumonia, diarrhea, newborn sepsis, and malaria</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Children 0–59 months of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• High mortality from illnesses treated by community case management</li> <li>• Lack of continual access to curative interventions</li> <li>• Low use of health facilities</li> <li>• Policy environment supports community case management (e.g., community health workers able to administer medications)</li> <li>• Treatment protocols available</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Uses trained, supervised community members to deliver the services</li> <li>• Designed to respond to local needs; is seldom a national program</li> <li>• Focus on areas with limited access to health facilities</li> <li>• Used to improve access, quality, and demand of treatment at the community level</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Requires sound training and supervision</li> <li>• Strong links with functional health facilities for training, supervision, and referral</li> <li>• Requires access to supply of curative products: medicines, oral rehydration therapy, vitamin A, and zinc</li> <li>• Promotion of timely care-seeking and improved feeding during illness</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Community Case Management Essentials</a> (CORE Group 2010)</li> </ul>

More information on programming approaches to diarrhea, acute respiratory infections, malaria, HIV, and water and sanitation is available in the Resources listed in Annex 3.



Which approaches will you use? Complete the boxes provided in Step 4, Section E of the Workbook.



## STEP 5

# Preliminary Program Design: Recuperation

*Step 5 begins on page 67 of the Workbook. Annex 2 in the Workbook provides a summary of the approaches included in this step for easy reference when you fill out Step 5 in the Workbook.*

You have already determined that high levels of underweight and/or acute malnutrition (MAM or SAM) are of public health significance and that your community-based nutrition program will incorporate both preventive and recuperative approaches (since you have already determined that a preventive program is necessary due to the high levels of stunting/underweight). In a development setting, recuperative programs should be integrated into the overall preventive program, where possible, as opposed to being implemented as separate, parallel interventions. The exception to this is government-run services to treat acute malnutrition, which are generally based in a health center. In these cases, community-based nutrition programs should focus on strengthening the linkages with these services, e.g., through developing and/or strengthening screening and referral systems. Screening for acute malnutrition at the community level and referral between preventive and recuperative programs are essential to ensure that children who become acutely malnourished receive treatment, and to ensure that children who recover from acute malnutrition receive services to prevent them from relapse. Recuperation programs in this section focus on addressing MAM, SAM, and/or underweight.

After reviewing your answers to the questions in Steps 1–3 in the Workbook, discuss the options in this section with your team. Record your conclusions in the Workbook in Step 5.

### Recuperation: SAM and MAM

If the prevalence of SAM and/or MAM is of public health significance, a program to manage SAM and MAM is needed in addition to a program that focuses on preventive approaches. Children and adults with SAM are at an increased risk of death and require specific treatments that are generally delivered through the health system. Community-based nutrition programs should strengthen and/or establish links with these treatment programs to increase their effectiveness and improve the chances that the patients will complete the full course of treatment.

Many governments have adopted the **community-based management of acute malnutrition (CMAM)** approach to manage SAM and MAM. The CMAM approach generally includes the following services:

- Community outreach for screening of low mid-upper arm circumference (MUAC), bilateral pitting edema, and other signs of acute malnutrition; referral for those found to be acutely malnourished and follow-up at the community level

- Initial evaluation for diagnosis of medical complications, danger signs, and assessment of appetite
- Treatment of SAM and MAM according to national protocols
- Outpatient care for patients with SAM and no medical complications using ready-to-use therapeutic food (RUTF)
- Inpatient care for patients with SAM and with medical complications using therapeutic milk and RUTF
- Outpatient care for patients with MAM and no medical complications using ready-to-use supplementary food, fortified-blended flour, or other supplemental products<sup>80</sup>
- Nutrition education and counseling
- Psychosocial stimulation
- Linkages with other nutrition, health, or food security initiatives

In places where the government has not adopted the CMAM approach, patients with SAM are likely treated through inpatient services using therapeutic milk. It should be noted that infants under 6 months with SAM require specialized treatment; national treatment protocols should be followed.

Children with MAM have different nutritional requirements than both non-malnourished children and children with SAM. Children with MAM should receive diets that promote weight gain of at least 5 g/kg/day.<sup>81</sup> Normative international guidance (such as from WHO) on the management of MAM does not exist at this time; however much has been learned and discussed regarding MAM management in the recent past. WHO published a technical note on supplementary foods for the management of MAM in 2012, which provides considerations on appropriate management.<sup>82</sup> In addition, the CMAM Forum published a technical brief in 2014 on knowledge and practices related to MAM that provides a good overview of considerations for policymakers and programmers.<sup>83</sup>

The two most established approaches for the management of MAM have been: supplementary feeding programs (either integrated into CMAM services or as a separate program), and nutrition counseling and education.<sup>84</sup>

- **Targeted supplementary feeding programs** are used to manage MAM through the provision of specialized nutrition products (e.g., ready-to-use supplementary food, complementary food supplements, and fortified blended foods) that the beneficiary should consume in addition to traditional family meals, along with routine medical

<sup>80</sup> WHO. 2012. *Technical Note: Supplementary Foods for the Management of Moderate Acute Malnutrition in Infants and Children 6–59 Months of Age*. Geneva: WHO.

<sup>81</sup> Golden, M.H. 2009. "Proposed Recommended Nutrient Densities for Moderately Malnourished Children." *Food and Nutrition Bulletin*. Vol. 30, Suppl. 3, pp. S267–344.

<sup>82</sup> WHO. 2012. *Technical Note: Supplementary Foods for the Management of Moderate Acute Malnutrition in Infants and Children 6–59 Months of Age*. Geneva: WHO.

<sup>83</sup> Annan, R.A.; Webb, P.; and Brown, R. 2014. *Management of Moderate Acute Malnutrition (MAM): Current Knowledge and Practice*. CMAM Forum.

<sup>84</sup> Ibid.

treatment when indicated. Supplementary feeding programs usually target children, pregnant and lactating women, and other vulnerable groups, and are indicated when the prevalence of SAM and MAM, together, is > 10% (or > 5% in aggravating circumstances).<sup>85</sup> The program has been used in food insecure situations, including emergencies, where the target population does not have access to affordable food that can meet their nutrient requirements.

- **Nutrition counseling and education** has been used to manage MAM in food secure situations where it is believed that an improvement in knowledge on nutrition-related practices can lead to an improvement in nutritional status. A 2009 review of nutrition counseling for the management of MAM found that the approach has the potential to be effective, but it is often weak or ineffective, e.g., the messages are too vague.<sup>86</sup> Community-based nutrition programs that choose to implement counseling and education for MAM management are encouraged to research effective implementation methods prior to establishing the program.

Whatever the government services for the management of SAM and MAM, community-based nutrition programs should 1) establish links with these services where possible, particularly for the screening, referral, and follow up of cases, and 2) focus on nutrition counseling and education. It is not recommended, nor is it likely feasible, that stand-alone, NGO-led CMAM services be established in development settings unless the government has approved the establishment of NGO-led CMAM services. A targeted supplementary feeding program for the management of MAM could be established in collaboration with government services and protocols, if this type of program is deemed the best approach to manage MAM.

### Recuperation: Underweight

If the prevalence of underweight is of public health significance, you will need a program that incorporates the following elements:

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<sup>85</sup> Global Nutrition Cluster. 2014. *Moderate Acute Malnutrition: A Decision Tool for Emergencies*; and UN Standing Committee on Nutrition. 2009. *Harmonised Training Package, Module 12 Technical Notes, Management of Moderate Acute Malnutrition*.

<sup>86</sup> Ashworth, A, and Ferguson, E. 2009. Dietary Counselling in the Management of Moderate Malnourishment in Children. *Food and Nutrition Bulletin*. Vol. 30, pp. S406–33.

- Community outreach for screening of children using MUAC, edema, and other signs of acute malnutrition in accordance with national protocols, and screening to measure the height of children identified as underweight to determine if the underweight is a result of stunting, wasting, or both (see text box)
- Referral of children with acute malnutrition to therapeutic services according to the national protocol
- A mechanism for monitoring weight gain and follow-up to ensure continued weight gain to improve the chances that children will complete the full course of treatment
- Medical referral and treatment to address underlying disease burden, deworm children, provide micronutrient supplementation, and address children who are not gaining appropriate weight or are losing weight in recuperative services
- If the child is participating in a PD/Hearth program (see table on the following pages), a daily supplemental meal with a minimum of 600–800 kcal/beneficiary/day and 25–27g of protein for 2 weeks or until the child has gained 400 g and is continuing to gain weight<sup>87</sup>
- Behavior change and nutrition counseling to improve feeding and care practices

There is recognition by nutrition practitioners that a wasted child participating in a recuperative nutrition program is more likely to recover than a stunted child participating in the same program (see Annex 1. Terminology for the two definitions), and this is an important consideration for resource allocation and motivation of caregivers. The evidence for programmatic solutions for the recuperation of stunted children is extremely weak at this time. Hence, it is recommended that programmers identify and track in program monitoring plans not only underweight prevalence as a part of program enrollment but stunting and wasting prevalence (low weight-for-height or low MUAC) as is feasible. Having this information will enable programmers, researchers, and policymakers to better understand program trends and more effectively allocate resources.

### In Summary: Options for Recuperative Services

**If appropriate recuperative services for SAM and MAM are available and accessible in your area (see Workbook, Step 3, Programs and Services Related to Maternal and Child Nutrition):**

- Focus your efforts on strengthening existing services through partnerships where needed
- Focus on nutrition counseling and education for caretakers of children that are malnourished and/or at risk of malnutrition, as well as those who influence and support nutrition practices in the household
- Ensure that the nutritional status of children is regularly monitored

<sup>87</sup> McNulty, J. and CORE Group. 2005. *Positive Deviance/Hearth Essential Elements: A Resource Guide for Sustainably Rehabilitating Malnourished Children (Addendum)*. Washington, DC: CORE Group.

- Refer malnourished children to available recuperative services, and ensure a medical evaluation for diagnosis and treatment
- Ensure that a mechanism is in place that provides for follow-up and family support, such as home visits, if necessary

**If services are not available:**

- Focus program efforts on advocacy and capacity strengthening to ensure that services and supplies will be available in the future
- Focus on nutrition counseling and education for caretakers of children that are malnourished and/or at risk of malnutrition, as well as those who influence and support nutrition practices in the household
- Consider implementing targeted supplementary feeding if the approach is supported by the government and if it is deemed within the capacity of the project
- Consider implementing PD/Hearth if the conditions are appropriate (see table below)

<b>PD/Hearth</b>	
<b>Brief Summary Description</b>	PD/Hearth is an approach to rehabilitate underweight children. Positive Deviance Inquiries identify successful practices and strategies of poor local families that have healthy children. In a 2-week intensive behavior change initiative (hearth sessions), volunteers and caregivers prepare and feed a recuperative meal of locally available foods and learn and practice affordable, acceptable, effective, and sustainable PD care practices. The meal ingredients are provided by participating families so that they learn that they can afford the foods, where to acquire them, and how to use them. Families are followed up with home visits after graduating from the hearth session to ensure continued growth.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Rehabilitate moderately underweight children<sup>88</sup></li> <li>• Enable families to maintain child’s improved nutritional status</li> <li>• Prevent undernutrition among other children born in the family</li> <li>• Improve care and feeding practices</li> <li>• Avoid community dependence on supplemental food programs</li> </ul>
<b>Target Group</b>	<ul style="list-style-type: none"> <li>• Children 6–36 months of age with moderate underweight (weight-for-age &lt; -2 z-scores)</li> <li>• Note: Children under 6 months of age should be exclusively breastfed and if malnourished, need to be referred to a health center</li> </ul>
<b>Criteria</b>	<p>Consider PD/Hearth if you can answer yes to the following questions:</p> <ul style="list-style-type: none"> <li>• Are at least 30% of children 6–36 months moderately or severely underweight (weight-for-age &lt; -2 z-scores)?</li> <li>• Is nutrient-rich food available and affordable?</li> <li>• Are homes located within a short distance of each other?</li> <li>• Is there is a community commitment to overcome undernutrition?</li> <li>• Is there access to basic complementary health services such as deworming, immunizations, malaria treatment, micronutrient supplementation, and referrals?</li> </ul>

<sup>88</sup> Evidence indicates that PD/Hearth is most effective in rehabilitation where underweight is reflecting wasting rather than stunting.

	<ul style="list-style-type: none"> <li>• Is there a system (or can a system be created) for identifying and tracking malnourished children?</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Caregivers contribute local foods</li> <li>• Community-level rehabilitation</li> <li>• Uses locally available foods and feasible practices</li> <li>• Engages community in addressing undernutrition</li> <li>• Recuperation and prevention of future undernutrition</li> <li>• Follow-up home visits</li> <li>• Intensive behavior change</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Positive Deviance Inquiries done in every community</li> <li>• Growth monitoring or screening mechanism to identify malnourished children</li> <li>• SBC strategies for hearth participants and larger community</li> <li>• Health services to address common childhood diseases</li> <li>• Community mobilization</li> <li>• Qualitative skill sets to engage community in conducting and analyzing Positive Deviance Inquiries</li> <li>• Skills in anthropometric measurement</li> <li>• Ability to identify children with SAM for referral</li> <li>• Ability to identify children who are stunted only, who are less likely to benefit from the program, and screen them out</li> <li>• Technical assistance from someone skilled in the PD/Hearth approach</li> <li>• Good supervision skills</li> <li>• Access to basic complementary health services (immunization, deworming, and micronutrients)</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#"><i>Positive Deviance/Hearth Essential Elements: A Resource Guide for Sustainably Rehabilitating Malnourished Children</i></a> (CORE Group 2005)</li> </ul>

## Community-Based Management of Acute Malnutrition (CMAM)

<b>Brief Summary Description</b>	Community-based approach for managing SAM cases, which includes outpatient care for SAM without medical complications, inpatient care for SAM with medical complications and infants under 6 months, and community outreach. Community workers are trained to use MUAC and assess edema to actively seek and refer SAM cases to the CMAM program. Based on a medical evaluation and using routine medication and RUTF, CMAM treats the majority of SAM cases at home. SAM cases with medical complications are referred to inpatient care for stabilization before being released to outpatient care for full recovery. CMAM programs may also include a component to manage MAM with routine medications and supplementary feeding, often with fortified-blended foods or ready-to-use supplemental foods.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Treat acute malnutrition</li> <li>• Reduce morbidity and mortality of children with acute malnutrition</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Children 6–59 months of age with SAM (MUAC &lt; 115 mm, weight-for-height &lt; -3 z-scores, and/or bilateral pitting edema)</li> <li>• Children 6–59 months of age with MAM (MUAC &lt; 125 but &gt; 115 mm, weight-for-height &lt; -2 z-scores but &gt; -3 z-scores) and children under 6 months with MAM may be included in the national program protocols</li> <li>• Children under 6 months of age with SAM</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Availability of national protocols for the management of acute malnutrition</li> <li>• Availability of RUTF, therapeutic milk (F75/F100), and routine medication</li> <li>• Availability of trained staff</li> <li>• Prevalence of SAM in children under 5 exceeds 1% of population of children 6–59 months</li> <li>• Communities with &gt; 10% wasting among children 6–59 months</li> <li>• May be considered for use in post-emergency communities or with frequent periodic emergencies in addition to development contexts</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Community-based approach for treating acute malnutrition on an outpatient basis</li> <li>• Use of RUTF instead of milk-based formulas for cases of SAM with no medical complications and children over 6 months of age</li> <li>• Community outreach for active case-finding and referral to catch children with SAM or MAM as early as possible</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Active community case-finding using MUAC and assessment of edema</li> <li>• SBC strategies for sustainable prevention</li> <li>• Health services to address common childhood diseases</li> <li>• Trained community members who can identify cases of acute malnutrition for referral</li> <li>• Resources (financial, in-kind) for a supply of RUTF and medications</li> <li>• Trained clinical staff to conduct anthropometric measurements, classify nutritional status, conduct medical evaluation, identify medical complications, refer cases, and treat cases</li> <li>• Inpatient services available</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">The CMAM Forum</a> (a central repository for information on CMAM)</li> <li>• <a href="#">Training Guide for Community-Based Management of Acute Malnutrition</a> (FANTA, Concern Worldwide, UNICEF, and Valid International 2008)</li> </ul>

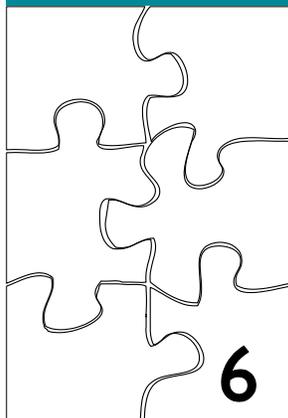
## Food Supplementation/Food Assistance: Recuperation

<b>Brief Summary Description</b>	In a recuperative food supplementation program, children (usually 6–59 months of age, but target ages vary) with MAM receive a supplementary food ration along with health services and behavior change communication for a set period of time or until recovery. Supplementary feeding programs are often established in emergencies to fill dietary gaps, protect lives, and protect nutritional status of women and children.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Manage MAM</li> <li>• Manage moderate underweight</li> </ul>
<b>Target Groups</b>	<ul style="list-style-type: none"> <li>• Children 6–59 months of age with MAM</li> <li>• Lactating mothers of malnourished children under 6 months of age</li> </ul>
<b>Criteria</b>	<ul style="list-style-type: none"> <li>• Food-insecure environment</li> <li>• Evidence that food supplementation will not displace local production</li> <li>• Logistical capacity for transport, storage, and management of food commodity</li> <li>• High prevalence of MAM and SAM, together (&gt; 10% or &gt; 5% with aggravating factors)</li> </ul>
<b>Defining Characteristics</b>	<ul style="list-style-type: none"> <li>• Opportunity to link with agriculture and livelihood sectors and improve food access while also improving utilization</li> <li>• Food supplementation may also be targeted on a seasonal basis, when food needs are greatest</li> <li>• Food is provided to children 6–59 months of age with MAM</li> </ul>
<b>Needed Elements for Quality Programming</b>	<ul style="list-style-type: none"> <li>• Provision of or access to basic essential health services (and treatment of SAM if appropriate)</li> <li>• Complementary preventive SBC programming focused on maternal nutrition, IYCF, hygiene, and health-seeking behaviors</li> <li>• Close programmatic coordination with health, nutrition, and food security programs and services</li> <li>• Formative research to adapt program to local conditions, including seasonal calendar of when food needs are greatest</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">USAID Office of Food for Peace</a></li> <li>• <a href="#">World Food Programme</a></li> </ul>



What approach will you use? Complete the boxes provided in Step 5 of the Workbook.

## STEP 6



# Putting It All Together

*Step 6 begins on page 70 of the Workbook*

Congratulations! You have arrived at this step after collecting and analyzing information on the nutrition situation and resources, determining priority intervention areas, and exploring the potential approaches. You should have a list of options identified in the Workbook.

At this point, based on your team discussions from Steps 1–5, you will put the various options together to prioritize and decide on the best combination of approaches to implement in the program area. Use Step 6 in the Workbook and LogFrame Excel template at <http://coregroup.org/NPDA2015> for final analysis and decision making on your potential program.

## COSTING OUT THE NUTRITION PROGRAMMING PLAN

There are a number of elements that must be taken into account when making rough estimates of cost. The following text box provides considerations to assist with developing program cost estimates and filling in the inputs section of your LogFrame.

### Costing Considerations

#### Staffing needs:

- What tasks and responsibilities will program staff have? Consider needs for SBC, nutrition, monitoring and evaluation, and community mobilization.
- What number and skill sets of staff are needed to implement the program effectively?
- What tasks and responsibilities will community health workers or volunteers have? How many hours per week or month are needed? How many volunteers or workers are needed?
- What are the supervisory needs?
- How are volunteers or community workers currently compensated or incentivized?
- Do staff need capacity building in the skills needed to implement the program approach?

#### Technical assistance needs:

- Will external technical assistance be needed? Consider needs for SBC, monitoring and evaluation, community mobilization, formative research, and documentation.
- Can technical assistance be secured from home/regional office?
- Can technical assistance be secured from local or international consultants?
- Does the health system (national or local) or other organization or partners have individuals with strong skills that can contribute to training others in specific nutrition approaches?

Direct program implementation needs:

- What activities will you carry out (e.g., trainings, support groups, SBC strategy, advocacy, and health days)?
- Where will they take place? What vehicle or fuel costs will be needed to support outreach and program efforts?
- How many communities will be involved?
- How many people will be involved in activities?

Program supply needs:

- What inputs and materials will need to be purchased and distributed?
- Does the Ministry of Health or other organization or partner have appropriate nutrition educational materials which can be used or modified?
- Will you need:
  - Scales and measuring boards
  - MUAC tapes
  - Child growth cards
  - SBC materials
  - Food supplements
  - Medications
  - Micronutrient supplements
  - Record-keeping/monitoring materials
  - Office equipment

## Conclusion

Congratulations on completing the Nutrition Program Design Assistant. We hope this tool has been useful to you in planning an effective nutrition program for the target area and that your programs are successful in improving childhood nutrition status.

The CORE Nutrition Working Group would be interested in learning about your experiences and lessons learned. If you have any advice based on your experience for improving guidance in this tool, please send your thoughts to [Contact@coregroupdc.org](mailto:Contact@coregroupdc.org)

***Congratulations and Best of Luck!***

# Annex 1. Terminology

## ANTHROPOMETRIC MEASUREMENT

Anthropometry is the measurement of the human body and is used to assess nutritional status of individuals and population groups. Common nutrition-related anthropometric measures are height, weight, and mid-upper arm circumference (MUAC). Training and quality control for consistently accurate measurement is an implementation challenge for most field programs.

Anthropometric measures are compared against a reference or standard population to determine how well an individual or population is meeting established growth and development patterns. From the 1970s to 2006, the National Center for Health Statistics/U.S. Centers for Disease Control and Prevention (NCHS/CDC) growth reference was used internationally for determining nutritional progress. Analyses conducted in the 1990s revealed that the growth patterns of healthy breastfed children differ from patterns seen in the NCHS/CDC reference population. In response, the World Health Organization (WHO) conducted a comprehensive study across multiple countries to better document how children *should* grow in environments where healthy children are exposed to improved nutrition and health practices, including breastfeeding.<sup>89</sup> Results from the WHO study led to the global introduction and roll out of the 2006 WHO Child Growth Standards as the recommended standard against which to compare anthropometric data. A comparison of child growth patterns in over 50 countries, using the 2006 WHO Child Growth Standards, found that growth faltering in early childhood is even more serious than indicated by earlier analyses using the NCHS/CDC reference, and affirm the importance of scaling up proven prenatal and infant and young child interventions during the development window of opportunity.<sup>90</sup>

## ANTHROPOMETRIC MEASURES

Data on a child's age, weight, and/or height are combined to form indices, which are compared to international standards.<sup>91</sup> The most commonly used anthropometric measures are:

**Low weight-for-height (WFH) (wasting/acute malnutrition):** Low WFH (or length)<sup>92</sup> identifies children who are “wasted” (i.e., thinner than a healthy, well-nourished child of the same height) because they have failed to gain adequate weight or have lost weight. It

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<sup>89</sup> De Onis, M.; Garza, C.; Onyango, A.W.; and Martorell, R. 2006. “WHO Child Growth Standards.” *Acta Paediatrica Supplement*. Vol. 450, pp. 5–101.

<sup>90</sup> Victora, C. et al. 2010. “Worldwide Timing of Growth Faltering: Revisiting Implications for Interventions.” *Pediatrics*. Vol. 125, pp. e473–e480.

<sup>91</sup> Standards include WHO Child Growth Standards 2006 or NCHS/CDC 1977 Growth References, depending on whether the country has adopted the new WHO Child Growth Standards.

<sup>92</sup> Length is used to describe children under 2 years of age who are measured lying down. Height is used to describe children 2 years of age and over who are measured standing up. Henceforth this document uses height to refer to either height or length.

reflects recent, short-term or acute malnutrition or illness. The amount of wasting present in an area may vary by the season and is affected by periods of food insecurity and seasonal illness. Wasting is addressed through recuperative and preventive approaches. Severe wasting is often used to determine population-level prevalence of severe acute malnutrition (SAM), because wasting data is more likely to be available at the population level than MUAC or bilateral pitting edema. Wasting data alone may underestimate SAM because it has partial overlap with MUAC data (approximately 40%) and does not reflect bilateral pitting edema.

**Low height-for-age (HFA) (stunting/chronic malnutrition):** Low HFA identifies children who are “stunted” (i.e., shorter in stature than a healthy child of the same age) because they have not grown adequately in height. It reflects past growth failure, chronic undernutrition over time, and/or poor health. HFA does not vary by seasons of the year. Stunting is best addressed through preventive approaches and interventions that address chronic food insecurity.

**Low weight-for-age (WFA) (underweight):** Low WFA identifies children who are “underweight” (i.e., they weigh less than a healthy, well-nourished child of the same age). This may be because the child has not grown adequately in height, weight, or both, or that he or she has recently lost weight. Underweight reflects both stunting and wasting, but cannot distinguish between the two. Underweight is addressed through preventive approaches and may be addressed through recuperative approaches as well.

**Bilateral pitting edema:** Also known as nutritional edema, kwashiorkor, or edematous malnutrition, bilateral pitting edema is a sign of SAM. It is identified when thumb pressure applied to the tops of both feet for three seconds leaves an indentation in the foot after the thumb is lifted. It is considered mild when it is only in both feet (can include ankles) (Grade +); moderate when it is in both feet, lower legs, hands, or lower arms (Grade ++); and severe when it is in both feet, legs, hands, arms, and face (Grade +++).

**Body mass index (BMI):** Calculation of BMI (weight in kg divided by height in meters-squared) is most often used to assess adult nutritional status and identifies body thinness as a result of weight loss or failure to gain weight. A value below 18.5 kg/m<sup>2</sup> indicates chronic energy deficiency or thinness. Low pre-pregnancy BMI and inadequate weight gain during pregnancy increases the risk of low birth weight. A BMI between 18.5 and 25 is considered normal, a BMI of 25 to 30 is considered overweight and a BMI > 30 is classified as obese. Obesity, a chronic disease, is becoming more prevalent in the developing world and may be a community nutrition issue. Obesity programs are not addressed in this tool.

**Low birth weight:** Low birth weight is when an infant weighs less than 2,500 g (5.5 pounds) at birth. Low birth weight is an outcome of intrauterine growth retardation and/or premature birth. It is estimated that four million deaths, or 38% of all child deaths, occur during the first 28 days of life. Sixty to eighty percent of children who die in the neonatal period have low birth weight, and 28% of neonatal deaths are directly

attributable to low birth weight.<sup>93</sup> Low birth weight is not only closely associated with fetal and neonatal mortality and morbidity, but also with inhibited growth and cognitive development, and chronic diseases later in life.<sup>94</sup>

**Mid-upper arm circumference (MUAC):** An indicator for wasting that is used for children 6–59 months of age. MUAC < 115 mm indicates severe wasting or SAM. MUAC ≥ 115 mm and < 125 mm indicates moderate wasting or moderate acute malnutrition (MAM).

## COMMONLY USED INDICATORS

**Global acute malnutrition (GAM):** An indicator referring to overall acute malnutrition in the population. GAM includes both SAM and MAM and is defined by presence of bilateral pitting edema or wasting (WFH < -2 z-scores). GAM = SAM + MAM.

**Moderate acute malnutrition (MAM):** MAM is indicated by moderate wasting: WFH ≥ -3 z-scores and < -2 z-scores, or MUAC ≥ 115 and < 125 mm. Children with MAM have a higher risk of death than well-nourished and at-risk children and need nutrition support.

**Severe acute malnutrition (SAM):** SAM is indicated by bilateral pitting edema or severe wasting: WFH < -3 z-scores or MUAC < 115 mm (MUAC used only on children over 6 months of age). Children with SAM are highly vulnerable and have a high mortality risk. These children need immediate medical and nutrition intervention.

## OTHER KEY ANTHROPOMETRIC TERMS

**Growth faltering:** Growth faltering occurs when a child fails to gain adequate weight compared to the amount of weight he or she would be expected to gain during a specified time period, based on international references. Growth faltering is measured by weighing children at regular intervals and comparing their weight gain to adequate weight gain tables or growth curves. The purpose of identifying growth faltering is to recognize a child's vulnerability before he or she becomes malnourished. The faltering is then addressed through counseling and appropriate interventions, which may include treatment for illness, preventive behavior change approaches, or recuperative programs to help the child regain lost weight.

**z-scores:** A z-score is a commonly-used statistical measurement to determine how far and in what direction an anthropometric measure deviates from the reference median, measured in standard deviations. Cutoffs for classifying categories of undernutrition (mild, moderate, or severe) are based on negative z-scores:

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<sup>93</sup> Lawn, J.E.; Cousens, S.; and Zupan, J. 2005. "4 Million Neonatal Deaths: When, Where? Why?" *The Lancet: Neonatal Survival Series*.

<sup>94</sup> UNICEF and WHO. 2004. *Low Birthweight: Country, Regional and Global Estimates*. New York, New York: UNICEF.

## Classifications of Undernutrition for Individuals<sup>95</sup>

Cutoff	Undernutrition Classification
< -1 to ≥ -2 z-scores	Mild
< -2 to ≥ -3 z-scores	Moderate
< -3 z-scores	Severe

## Anthropometry Summary

Measure	Type of Undernutrition Detected	Indicator <sup>96</sup>
Height-for-age (HFA)	<p><i>Stunting/Chronic Malnutrition</i></p> <ul style="list-style-type: none"> <li>• Failure to grow adequately in height or length</li> <li>• Reflects chronic, long-term undernutrition or poor health</li> </ul>	% of children 0–59 months with HFA < -2 z-scores
Weight-for-height (WFH)	<p><i>Wasting/Moderate Acute Malnutrition (MAM)</i></p> <ul style="list-style-type: none"> <li>• Failure to gain sufficient weight relative to height or length, or weight loss</li> <li>• Reflects more recent undernutrition or weight loss</li> </ul>	% of children 0–59 months with WFH < -2 z-scores
Weight-for-age (WFA)	<p><i>Underweight</i></p> <ul style="list-style-type: none"> <li>• Failure to gain sufficient weight relative to age, or weight loss</li> <li>• Reflects stunting, wasting, or both but does not distinguish between the two</li> </ul>	% of children 0–59 months with WFA < -2 z-scores
Body mass index (BMI)	<p><i>Body Thinness/Chronic Energy Deficiency</i></p> <ul style="list-style-type: none"> <li>• Failure to gain sufficient weight, or weight loss</li> <li>• Associated with body fat and protein stores</li> </ul>	% of women 15–49 years with BMI < 18.5
Mid-upper arm circumference (MUAC)	<p><i>Acute Malnutrition</i></p> <ul style="list-style-type: none"> <li>• Failure to gain sufficient weight, or weight loss</li> <li>• Reflects wasting</li> </ul>	<p>GAM: % of children 6–59 months with MUAC &lt; 125 mm</p> <p>MAM: % of children 6–59 months with MUAC &lt; 125 mm and ≥ 115 mm</p> <p>SAM: % of children 6–59 months with MUAC &lt; 115 mm</p>

<sup>95</sup> Cogill, B. 2003. *Anthropometric Indicators Measurement Guide*. Washington, DC: Food and Nutrition Technical Assistance Project.

<sup>96</sup> Age ranges for which data are available can and will vary.

## COMMON MICRONUTRIENT TERMS

**Anemia:** A condition in which the hemoglobin (Hb) concentration in the blood is below a defined level,<sup>97</sup> resulting in reduced oxygen-carrying capacity of red blood cells. About half of the two billion cases of anemia worldwide can be attributed to iron deficiency, which occurs when there are low iron reserves in the body because of low dietary intake, poor absorption of iron, or blood loss. Other causes include malaria, hookworm, and high fertility. Pregnant women, infants, and young children are particularly vulnerable to anemia. Anemia of all severities increases risks of maternal and perinatal mortality, preterm birth and low birth weight, impaired cognitive development in children, and reduced adult work productivity.<sup>98</sup>

**Vitamin A deficiency:** Vitamin A is critical to the body's immune system, necessary for healthy growth and development and essential to the health of the eye and the ability to see in low light. Approximately 127 million children under 5 years of age are vitamin A deficient and approximately 647,000 children die each year from infections which would survive if they were vitamin A replete. In addition, vitamin A deficiency is the leading cause of preventable blindness worldwide.<sup>99</sup>

**Iodine deficiency:** Iodine plays an important role in the development and function of the brain and nervous system. Iodine deficiency most seriously affects infants, children, adolescents, and pregnant or lactating women. Iodine deficiency in pregnancy can result in stillbirth and irreversible brain and central nervous system damage in the infant. It is the single largest determinant of preventable brain damage, mental retardation, and loss of IQ points in the world. During pregnancy and infancy, iodine deficiency contributes to child mortality. Children who are iodine deficient have a reduced learning capacity and lower school performance and adults with iodine deficiency are less productive.<sup>100</sup>

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<sup>97</sup> Anemia cutoffs: non-pregnant women of reproductive age: < 12 g/dl; pregnant women: < 11 g/dl; children 0–59 months: < 11g/dl.

<sup>98</sup> WHO. "Anemia." Available at <http://www.who.int/topics/anaemia/en/>; and FANTA. 2006. "Maternal Anemia: A Preventable Killer." Washington, DC: FANTA.

<sup>99</sup> USAID. 2007. "Child Survival and Health Grants Program Technical Reference Materials, Nutrition."

<sup>100</sup> Ibid.

# Annex 2. Key Messages Associated with the Essential Nutrition Actions

The Essential Nutrition Actions (ENA) are a set of seven actions to promote optimal nutrition. Within each action are a multitude of supporting behaviors and messages. Below are examples of some of the most common key messages associated with each action. However, any program promoting ENA should conduct formative research to identify the key behaviors that should be targeted in their program area and specific context. More information can be found in the [ENA Framework](#) on the CORE Group website.

## 1. Promotion of optimal nutrition for women

- Consume more food during pregnancy and lactation and eat a variety of foods
  - Pregnancy: 1 extra meal/day in the second trimester; 1.5 extra meals/day in the third trimester<sup>101</sup>
  - Lactation: 500 extra kcal/day (1–2 additional small meals each day)
- Increase protein intake during pregnancy and lactation (e.g., beans, lentils, legumes, animal source foods, and oilseeds)
- Provide iron/folic acid supplementation for all pregnant women, according to World Health Organization (WHO) or country protocol<sup>102</sup>
- Prevent and treat malaria, including intermittent preventive treatment
- Deworm during pregnancy (after first trimester) in areas where parasitic worms are a common cause of anemia
- Supplement pregnant and lactating women with iodized oil capsules when iodized salt is not available, according to WHO recommended doses<sup>103</sup>
- Promote healthy timing and spacing of births (at least 2 year intervals) by using modern methods of contraception including the lactational amenorrhea method in the first 6 months

## 2. Promotion of optimal breastfeeding during the first 6 months

- Promote early initiation of breastfeeding (i.e., within 1 hour of birth); do not give pre-lacteal feeds<sup>104</sup> and ensure the baby is receiving colostrum
- Promote exclusive breastfeeding for the first 6 months of life (i.e., no other liquids or foods except oral rehydration solution and medicines)

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<sup>101</sup> Panel on Micronutrients, Institute of Medicine. 2002. "Report on Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty acids, Cholesterol, Protein and Amino Acids." Washington, DC: Institute of Medicine.

<sup>102</sup> WHO, UNICEF, United Nations University. 2001. *Iron Deficiency Anaemia: Assessment, Prevention and Control*. Geneva: WHO. p. 58.

<sup>103</sup> Ibid.

<sup>104</sup> Pre-lacteal feeds include any food or liquid other than breast milk given to a child in the first 3 days of life.

- Promote breastfeeding on demand, day and night (i.e., usually 8–12 times per day) until each breast is soft; offer the second breast after infant releases the first
- Tell mothers of newborns how to tell if their babies are getting enough breast milk—at least two wet diapers or urinations per day in the first couple of days and at least six per day after that
- Tell mothers that if the newborn is sleeping more than 3 hours, the baby should be woken up and offered the breast
- Practice correct positioning and attachment of infant at the breast
- Promote good breast health care
- Inform mothers and family members about how to increase breast milk production by feeding longer and more frequently from each breast
- Inform mothers that even during hot weather, breast milk will satisfy the baby’s thirst during the first 6 months

### 3. Promotion of optimal complementary feeding starting at 6 months with continued breastfeeding to 2 years of age and beyond<sup>105</sup>

- Continue frequent, on-demand breastfeeding through 24 months of age and beyond
- Introduce complementary foods at 6 months of age and continue to breastfeed as much as before<sup>106</sup>
- Prepare and store all complementary foods safely and hygienically
- Increase food quantity as child gets older
  - 6–8 months: 200 kcal/day from complementary foods
  - 9–11 months: 300 kcal/day from complementary foods
  - 12–23 months: 550 kcal/day from complementary foods
- Increase frequency of feeding complementary foods as child gets older
  - 6–8 months: 2–3 meals per day
  - 9–23 months: 3–4 meals per day, 1–2 snacks per day (as desired)
- Never give a thin, watery porridge and instead feed small amounts of thicker porridge with a variety of ground-up or chopped foods to increase nutrient-density and variety of the child’s diet; increase thickness and variety gradually as child gets older
- Feed a variety of foods daily to ensure adequate nutrient intake, including animal products, a source of bio-available iron from animal flesh; fortified foods; and vitamin A-rich fruits and vegetables, legumes, and nuts
- Practice responsive feeding (i.e., feed infants directly and assist older children, encourage children to eat, do not force feed, minimize distractions, and show love to children by talking and making eye contact)

<sup>105</sup> International guidance on optimal feeding can be found in [Guiding Principles for Complementary Feeding of the Breastfed Child](#) (6–23 months)(PAHO 2003) and [Guidance for Feeding Non-Breastfed Children 6–24 Months of Age](#) (WHO 2005).

<sup>106</sup> Complementary foods are any non-breast milk foods or nutritive liquids that are given to young children after the child has reached 6 months of age. They are foods that are readily consumed and digested by the young child and that provide additional nutrition to meet all the growing child’s needs.

#### 4. Promotion of optimal nutritional care of sick and severely malnourished children

- Continue feeding and increase fluids during illness
  - Children under 6 months of age: increase frequency of exclusive breastfeeding
  - Children 6–24 months: increase fluid intake, including breast milk, and offer food
- Increase feeding during and after illness until child regains weight and is growing well
- It is easier for a sick/malnourished child to eat small frequent meals; provide foods the child likes in small quantities throughout the day
- For diarrhea: provide zinc supplementation for 10–14 days, according to WHO protocol
- For diarrhea: provide low osmolarity oral rehydration solution to children over 6 months
- For measles: provide vitamin A treatment, according to WHO protocol, and proper fluid intake
- Refer severely malnourished children for treatment, according to WHO protocol, through community-based management of acute malnutrition, inpatient care, or other appropriate program

#### 5. Promotion of adequate intake of iron and folic acid and prevention and control of anemia for women and children

- Promote intake of iron-rich foods, especially animal products and fortified foods
- Provide daily iron/folic acid supplementation to all pregnant women for 6 months; continue supplementation for 3 months postpartum in areas with anemia prevalence greater than 40% and where iron/folic acid supplementation during pregnancy is less than 6 months
- Promote delayed cord clamping for 1–3 minutes, part of Active Management of Third Stage of Labor, to increase iron stores in the newborn
- Provide iron/folic acid supplementation for children<sup>107</sup>
- Deworm children over 12 months of age, pregnant women after the first trimester, and lactating women according to WHO protocol in areas where parasitic worms are a common cause of anemia
- Prevent and control anemia caused by malaria
  - Intermittent preventive treatment for pregnant women

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<sup>107</sup> Current WHO guidelines include iron supplementation for children, and all supplementation should be in line with national guidelines. Where malaria is highly prevalent, children should receive iron supplements in the context of malaria control programs that prevent and treat malaria. A randomized, controlled trial in Pemba, Zanzibar, where malaria is highly endemic, showed that daily iron supplementation of all children resulted in a statistically significant increase in hospitalization. The adverse outcomes appear to have occurred in children who were iron replete prior to supplementation. Children who were iron-deficient benefited from receiving iron. Further research needs to be done, and iron supplementation recommendations in malarious zones may change. (Sazawal et al. 2006. “Effect of routine prophylactic supplementation with iron and folic acid on admission to hospital and mortality in preschool children in a high malaria transmission setting: a community-based, randomized, placebo-controlled trial.” *Lancet*. Vol. 367, p. 133 in WHO. 2006. “Iron Supplementation of Young Children in Regions Where Malaria Transmission is Intense and Infectious Disease is Highly Prevalent.” Geneva: WHO.

- Long-lasting insecticide-treated nets for women and children

## 6. Prevention of vitamin A deficiency in women and children

- Breastfeed children exclusively for the first 6 months, and continue breastfeeding until the child is 24 months or over
- Treat xerophthalmia and measles cases with vitamin A, according to WHO guidelines
- Provide high-dose vitamin A supplementation to children 6–59 months of age, every 6 months according to WHO guidelines<sup>108</sup>
- For pregnant and lactating women and children 6–23 months, promote consumption of vitamin A-rich foods, including liver; fish; egg yolk; red palm oil; dark yellow or orange fruits (e.g., ripe and dried mango, papaya, apricots, and persimmon); dark green leafy vegetables; and orange or dark yellow-fleshed vegetables, roots, and tubers (e.g., carrots, pumpkin, squash, and sweet potatoes).
- Promote consumption of vitamin A-fortified foods, where available

## 7. Promotion of adequate intake of iodine by all members of the household

- Promote consumption of iodized salt
- Supplement pregnant and lactating women and children 6–24 months of age with iodized oil capsules when iodized salt is not available, according to WHO-recommended doses<sup>109</sup>

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<sup>108</sup> High dose is 100,000 IUs for children 9–11 months and 200,000 IUs for children 12–48 months.

<sup>109</sup> WHO and UNICEF. 2007. "Reaching Optimal Iodine Nutrition in Pregnant and Lactating Women and Young Children." Geneva: WHO.

# Annex 3. Resources

## BIRTH SPACING/FAMILY PLANNING

- [Further Evidence of the Effects of Preceding Birth Intervals on Neonatal, Infant, and Under-Five-Years Mortality and Nutritional Status in Developing Countries: Evidence from the Demographic and Health Surveys](#) (Macro International Inc., 2008)
- [Gender Influences on Child Survival, Health and Nutrition: A Narrative Review](#) (UNICEF and Liverpool School of Tropical Medicine 2011)
- [Maternal Infant and Young Child Nutrition and Family Planning \(MIYCN-FP\) Integration Toolkit](#) (K4Health 2015)
- [Maximizing Synergies Between Maternal, Infant, And Young Child Nutrition And Family Planning](#) (MCHIP 2011)
- [Prioritizing Nutrition in Agriculture and Rural Development: Guiding Principles for Operational investments](#) (The World Bank 2012)

## COMMUNITY-BASED GROWTH PROMOTION

- [A Cost Analysis of the Honduras Community-Based Integrated Child Care Program](#) (World Bank 2003)
- [Growth Monitoring and Promotion: A Review of the Evidence](#) (*Maternal and Child Nutrition* 2008)
- [Promoting the Growth of Children: What Works. Rationale and Guidance for Programs](#) (World Bank 1996)

## FOOD-BASED APPROACHES AND FOOD SUPPLEMENTATION

- [Assessing the Potential for Food-Based Strategies to Reduce Vitamin A and Iron Deficiencies: A Review of Recent Evidence](#) (International Food Policy Research Institute 2000)
- [Impact and Cost-Effectiveness of the Preventing Malnutrition in Children under 2 Approach](#) (FANTA)
- [Food Security Network](#)
- *Introduction to Animal Husbandry in the Tropics* by W.J.A. Payne and R.T. Wilson (Wiley Blackwell 1999)
- *The Resilient Family Farm: Supporting Agricultural Development and Rural Economic Growth* by G. Burpee and K. Wilson (ITDG Publishing 2004)
- [Second Food Aid and Food Security Assessment \(FAFSA-2\) Summary](#) (FANTA 2013)
- [USAID Food Assistance Resources](#)
- [USAID Office of Food for Peace](#)

- [World Food Programme](#)

## **GENDER**

- [ADS Chapter 205: Integrating Gender Equality and Female Empowerment in USAID's Program Cycle](#) (USAID 2013)
- [Gender Equality and Female Empowerment](#) (USAID 2013)
- [Gender Integration in USAID Bureau for Democracy, Conflict, and Humanitarian Assistance Office of Food for Peace Operations: Occasional Paper #7](#) (FANTA 2011)

## **HEALTH SYSTEM ANALYSIS**

- [Nutrition Essentials: A Guide for Health Managers](#) (WHO, BASICS, and UNICEF 1999)
- [Program Review for Essential Nutrition Actions: Checklist for District Health Services](#) (BASICS II 2003)
- [Rapid Health Facility Assessment](#) (Maternal and Child Health Integrated Program)

## **HIV**

- [Guide to Screening for Food and Nutrition Services Among Adolescents and Adults Living with HIV](#) (FANTA 2010)
- [HIV and Infant Feeding Revised Principles and Recommendations: Rapid Advice](#) (WHO 2009)
- [Nutrition Assessment, Counseling, and Support \(NACS\): A Users Guide](#) (FANTA 2013)
- [Technical Reference Materials: Nutrition](#) (Child Survival and Health Grants Program 2007)

## **INFANT AND YOUNG CHILD FEEDING**

- [Alive & Thrive Project](#)
- [Combined Course on Growth Assessment and IYCF Counselling](#) (WHO 2012)
- [Community-Based Infant and Young Child Feeding](#) (UNICEF)
- [Designing by Dialogue: A Program Planners' Guide to Consultative Research for Improving Young Child Feeding](#) (Support for Analysis and Research in Africa Project 1997)
- [Formative Research: Skills and Practice for Infant and Young Child Feeding and Maternal Nutrition](#) (LINKAGES Project 2003)
- [Guiding Principles for Complementary Feeding of the Breastfed Child](#) (Pan American Health Organization 2004)
- [Guiding Principles for Feeding Non-Breastfed Children 6–24 Months of Age](#) (WHO 2005)
- [Overview: Framework for Delivering Nutrition Results at Scale](#) (Alive & Thrive/FHI 360 2014)
- [Programming Guide: Infant and Young Child Feeding](#) (UNICEF 2011)

- [Strategic Design of Mass Media to Promote Breastfeeding in Viet Nam](#) (Alive & Thrive/FHI 360)
- [Strengthening Action to Improve Feeding of Infants and Young Children 6–23 Months of Age in Nutrition and Child Health Programmes—Report of Proceedings](#) (WHO 2008)

## MICRONUTRIENTS

- [A2Z: The USAID Micronutrient and Child Blindness Project](#)
- [Anemia Prevention and Control: What Works? Part 1 and Part 2](#) (USAID, Micronutrient Initiative, and Population, Health and Nutrition Information Project 2003)
- [Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination: A Guide for Programme Managers](#) (WHO, UNICEF, and International Council for Control of Iodine Deficiency Disorders 2007)
- [Guideline: Intermittent Iron and Folic Acid Supplementation in Non-Anaemic Pregnant Women](#) (WHO 2012)
- [Guideline: Neonatal Vitamin A Supplementation](#) (WHO 2011)
- [Guideline: Vitamin A Supplementation for Infants 1–5 Months of Age](#) (WHO 2011)
- [Guideline: Vitamin A Supplementation in Pregnant Women](#) (WHO 2011)
- [Integrated Anemia Prevention and Control Toolkit](#) (Maternal and Child Health Integrated Program)
- [The Micronutrient Initiative](#)
- [Oral Iron Supplementation for Preventing or Treating Anaemia among Children in Malaria-Endemic Areas](#) (*Cochrane Database of Systematic Reviews* 2009)
- [World Bank Public Health at a Glance: Anemia](#)
- [Worldwide Prevalence of Anaemia 1993–2005: WHO Global Database on Anaemia](#) (WHO 2008)

## MONITORING AND EVALUATION

### *Theory of Change*

- [Draft Technical References for FFP Development Food Assistance Projects](#) (USAID Office of Food for Peace 2015)
- [Review of the Use of ‘Theory Of Change’ in International Development](#) (UK Department of International Development 2012)
- [Theory of Change: A Practical Tool for Action, Results and Learning](#) (Annie E. Casey Foundation 2004)
- [Theory of Change Facilitator’s Guide \(December 2014 Edition\)](#) (TANGO International and The TOPS Program 2014)
- [Theory of Change Online](#) (Center for Theory of Change)

- [Development Hypotheses](#)<sup>110</sup> (USAID)

#### **Logical Framework**

- [Guide to the Logical Framework Approach](#) (European Integration Office 2011)
- [The Logical Framework Approach](#) (Sida 2004)
- [Technical Note. The Logical Framework. Number 2. Version 1.0](#) (USAID 2012)

#### **NUTRITION OVERVIEW**

- [Essential Nutrition Actions Guide](#) (WHO 2013)
- [Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done at What Cost?](#) (*The Lancet* 2013)
- [Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries](#) (*The Lancet* 2013)
- [Nutrition Essentials: A Guide for Health Managers](#) (BASICS, UNICEF, and WHO 1999)
- [Nutrition-Sensitive Interventions and Programmes: How Can They Help to Accelerate Progress in Improving Maternal and Child Nutrition?](#) (*The Lancet* 2013)
- [Scaling Up Nutrition: What Will It Cost?](#) (The World Bank 2010)
- [Technical Reference Materials: Nutrition](#) (Child Survival and Health Grants Program)
- [USAID Multi-Sectoral Nutrition Strategy 2014-2025](#) (USAID 2014)
- [Using “Essential Nutrition Actions” to Accelerate Coverage with Nutrition Interventions in High Mortality Settings](#) (BASICS II 2004)
- [What Works? Interventions for Maternal and Child Undernutrition and Survival](#) (*The Lancet* 2008)

#### **QUALITATIVE RESEARCH**

- [Guidance for Formative Research on Maternal Nutrition](#) (Infant & Young Child Nutrition Project 2012)
- [How to Mobilize Communities for Health and Social Change](#) (Health Communication Partnership 2003)
- [Making Sense of Focus Group Findings: A Systematic Participatory Approach](#) (FHI 360 2003)
- [Qualitative Research for Improved Health Programs: A Guide to Manuals for Qualitative and Participatory Research on Child Health, Nutrition, and Reproductive Health](#) (Johns Hopkins University, School of Hygiene and Public Health 2000)
- [Qualitative Research Methods: A Data Collector’s Field Guide](#) (FHI 360 2005)

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<sup>110</sup> USAID’s Office of Food for Peace is creating a technical note on theory of change.

- [Rapid Rural Appraisal \(RRA\) and Participatory Rural Appraisal \(PRA\): A Manual for CRS Field Workers and Partners](#) (Catholic Relief Services 1999)
- [Training in Qualitative Research Methods: Building the Capacity of PVO, NGO, and MOH Partners](#) (CORE Group)

## QUANTITATIVE DATA COLLECTION

- [Demographic and Health Surveys](#)
- [Knowledge, Practices, and Coverage Survey](#)
- [Multiple Indicator Cluster Surveys](#)

## RECUPERATION

- [Consultation on the Management of Moderate Malnutrition in Children Under 5 Years of Age](#) (*Food and Nutrition Bulletin* 2009)
- [Dietary Counselling in the Management of Moderate Malnourishment in Children](#) (*Food and Nutrition Bulletin* 2009)
- [Field Guide for Management of Moderate Acute Malnutrition](#) (Inter-Agency Standing Committee's Nutrition Cluster & Nutrition Working Group of the Somalia Support Secretariat 2009)
- [Guideline: Updates on the Management of Severe Acute Malnutrition in Infants and Children](#) (WHO 2013)
- [Harmonised Training Package, Module 12 \(Technical Notes\)](#) (Emergency Nutrition Network 2011)
- [Integration of IYCF Support into CMAM: Facilitator's Guide](#) (Emergency Nutrition Network 2009)
- [MAM Decision Tool for Emergencies](#) (Global Nutrition Cluster 2014)
- [Management of Moderate Acute Malnutrition \(MAM\): Current Knowledge and Practice](#) (CMAM Forum 2014)
- [Management of Acute Malnutrition in Infants \(MAMI\) Project: Summary Report](#) (Emergency Nutrition Network 2009)
- [Positive Deviance/Hearth: A Resource Guide for Sustainably Rehabilitating Malnourished Children](#) (CORE Group 2002)
- [Proposed Recommended Nutrient Densities for Moderately Malnourished Children](#) (*Food and Nutrition Bulletin* 2009)
- [Technical Note: Supplementary Foods for the Management of Moderate Acute Malnutrition in Infants and Children 6–59 Months of Age](#) (WHO 2012)
- [Training Guide for Community-Based Management of Acute Malnutrition](#) (FANTA/FHI 360 2008)

## SOCIAL AND BEHAVIOR CHANGE

- [Care Groups: A Training Manual for Program Design and Implementation](#) (Food Security and Nutrition Network Social and Behavioral Change Task Force 2014)
- [Care Group Info](#) (CORE Group, Food for the Hungry, and World Relief)
- [The Community Infant and Young Child Feeding Counseling Packet](#) (UNICEF 2013)
- [CORE Group Social and Behavior Change Working Group](#) (CORE Group)
- [Demystifying Community Mobilization: An Effective Strategy To Improve Maternal And Newborn Health](#) (ACCESS Program/USAID 2007)
- [Designing for Behavior Change Curriculum](#) (CORE Group 2008)
- [Edutainment Model](#) (Soul City)
- [Essential Nutrition Actions Framework Training Guide for Community Volunteers](#) (CORE Group 2011)<sup>111</sup>
- [Essential Nutrition Actions Framework Training Guide for Health Workers](#) (CORE Group 2011)
- [Essential Nutrition Actions Framework Training Guide for Health Workers Handouts](#) (CORE Group 2011)
- [Freedom from Hunger](#) (Freedom from Hunger)
- [Grandmother Project](#) (Grandmother Project 2014)
- [A Guide to Mobilizing Community-Based Volunteer Health Educators: The Care Group Difference](#) (CORE Group 2010)
- [Mass Communication](#) (Alive and Thrive)
- [Resources of IYCF Support Groups](#) (Alive and Thrive)
- [Training of Trainers for Mother-to-Mother Support Groups](#) (Linkages 2003)

## UNDERLYING DISEASE BURDEN

- [Community-Based Integrated Management of Childhood Illness](#) (CORE Group 2009)
- [Community Case Management Essentials: A Guide for Program Managers](#) (CORE Group 2010)
- [Technical Reference Materials: Control of Diarrheal Disease](#) (Child Survival and Health Grants Program 2010)
- [Technical Reference Materials: Malaria](#) (Child Survival and Health Grants Program 2014)

## WATER AND SANITATION

- [Child Undernutrition, Tropical Enteropathy, Toilets, and Handwashing](#) (*The Lancet* 2009)

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<sup>111</sup> This training guide is being updated, check the CORE Group website for an updated version.

- [Household Environmental Conditions are Associated with Enteropathy and Impaired Growth in Rural Bangladesh](#) (*American Journal of Tropical Medicine and Hygiene* 2013)
- [How Much International Variation in Child Height Can Sanitation Explain?](#) (The World Bank 2013)
- [Integrating Water, Sanitation, and Hygiene Into Nutrition Programming](#) (WASHplus 2013)
- [Joint Publication 8. The Hygiene Improvement Framework — A Comprehensive Approach for Preventing Childhood Diarrhea](#) (Environmental Health Project 2004)
- [Water and Development Strategy 2013-2018](#) (USAID 2013)
- [Water, Sanitation, and Hygiene Improvement Training Package for the Prevention of Diarrheal Disease](#) (Hygiene Improvement Project 2009)

