USAID
FROM THE AMERICAN PEOPLE

Frontline Nutrition Service Delivery

A Comparison of Packages for Policymakers and Program Managers

SEPTEMBER 2020

About USAID Advancing Nutrition

USAID Advancing Nutrition is the Agency's flagship multi-sectoral nutrition project, led by JSI Research & Training Institute, Inc. (JSI), and a diverse group of experienced partners. Launched in September 2018, USAID Advancing Nutrition implements nutrition interventions across sectors and disciplines for USAID and its partners. The project's multi-sectoral approach draws together global nutrition experience to design, implement, and evaluate programs that address the root causes of malnutrition. Committed to using a systems approach, USAID Advancing Nutrition strives to sustain positive outcomes by building local capacity, supporting behavior change, and strengthening the enabling environment to save lives, improve health, build resilience, increase economic productivity, and advance development.

Disclaimer

This report was produced for the U.S. Agency for International Development. It was prepared under the terms of contract 7200AA18C00070 awarded to JSI Research & Training Institute, Inc. (JSI). The contents are the responsibility of JSI, and do not necessarily reflect the views of USAID or the U.S. Government.

Recommended Citation

USAID Advancing Nutrition. 2020. *Frontline Nutrition Service Delivery: A Comparison of Packages for Policymakers and Program Managers*. Arlington, VA: USAID Advancing Nutrition.

Cover Photo: Sascha Lamstein, JSI, 2016

USAID Advancing Nutrition

JSI Research & Training Institute, Inc.
2733 Crystal Drive
4th Floor
Arlington, VA 22202

Phone: 703–528–7474
Email: info@advancingnutrition.org
Web: advancingnutrition.org

Contents

Acknowledgements iv
Background 1
Methods 2
Organization of This Document 4
Findings 5
Conclusions 29
Recommendations 32
Annex 1. Tool for Package Review 33
Annex 2. Evidence of Effectiveness of Packages Reviewed 58
Annex 3. Supplementary Tables 60
References 61
Resources 64
Tables
1. Packages in the Context of WHO's Health System Building Blocks 9
2. Training Characteristics 17
3. Clinical Services Trainees are Taught to Deliver 19
4. Operational Tasks Trainees are Taught 22
5. Nutrition-Related Care Practices Trainees Are Taught to Promote 24

Acknowledgements

USAID Advancing Nutrition acknowledges Sascha Lamstein, a senior technical advisor with the project, for preparing this document. This report would not have been possible were it not for the commitment and technical oversight provided by Lindy Fenlason and Tim Quick of USAID throughout the entire process. In addition, we recognize the many contributors who contributed to the development of the tool used for reviewing the service delivery packages: Abigail Kaplan Ramage (independent consultant); Adriane Seibert (senior nutrition advisor at Catholic Relief Services); Anne Detjen (health specialist at UNICEF); Deepika Sharma (program officer for child development and nutrition at UNICEF); Everlyn Matiri (regional technical advisor for nutrition at Catholic Relief Services); Felicien Randriamanantenasoa (regional technical advisor for nutrition and community health at Catholic Relief Services); Gwyneth Cotes (country director at HKI Cambodia); Jen Burns (senior nutrition advisor at Catholic Relief Services); Justine Kavle (founder of Kavle Consulting); Kathryn Reider (senior nutrition advisor at World Vision International); Manisha Tharaney (West Africa director at Alive & Thrive, FHI 360); Michel Pacque (child health team Lead at Maternal and Child Survival Project, JSI); and Roland Kupka (senior advisor at UNICEF). From the USAID Advancing Nutrition team, Altrena Mukuria, Ashley Aakesson, Denish Moorthy, Kelsey Torres, Kristen Cashin, Lisa Sherburne, Mandana Arabi, Peggy Koniz-Booher, Tina Lloren, as well as Romilla Karnati, Sarah O'Flynn, Renee Perez, and Adam Bailes of Save the Children, provided valuable input at various points in time through development of the tool, analysis of packages, and reporting of findings. Malia Uyehara and Heba Malik helped with final formatting.

Background

Inadequate nutrition, suboptimal care, and poor feeding practices put children under 5 years at higher risk of disease and mortality. The nutrition needs of many are inconsistently addressed, under-addressed, or unaddressed, causing morbidity and mortality. Providing adequate nutrition services that emphasize the importance of proper nutritional practices as part of the continuum of care is an important step toward reduction of morbidity and mortality in children.

However, many policies and guidelines on nutrition services and those for sick and/or undernourished children are fragmented or siloed rather than harmonized. Moreover, there is no unified, global technical guidance on a comprehensive package of interventions to prevent and treat common childhood illnesses *and* provide the appropriate nutrition services, including counseling and support for the adoption of optimal nutrition practices.

Various packages, consisting of planning and implementation guidance, training materials, and job aids, have been designed to guide nutrition service delivery by the frontline health workers. It is not uncommon to find more than one package being implemented in the same location. Much effort and care have gone into the creation and implementation of these packages. While there are similarities across them—all of the packages aim to improve frontline health and/or nutrition services—there are also a number of differences. Some packages focus solely on nutrition; others place greater focus on preventing and treating illness, with little or no mention of nutrition; early childhood development; or water, sanitation, and hygiene (WASH), despite the strong relationship of these with health status. Some packages focus only on infants and young children, and others focus only on the sick or malnourished. While some train community health volunteers, others train health workers operating in health facilities, supervisors and program managers, or some combination of the above. Additionally, some require lengthy trainings while others are shorter and easily adapted to on-the-job modular formats. Though most are designed for in-service on-site trainings, some offer suggestions for inclusion in pre-service or remote learning. Finally, along with their strengths, they also have their limitations. Of particular note, few address the full continuum of care, for all ages and stages of life.

Box 1. Packages Reviewed

- Community-Based Infant and Young Child Feeding (C-IYCF) Counseling Package— UNICEF 2012
- Essential Nutrition Actions/Essential Hygiene Actions (ENA) Framework—USAID 2015
- Community-Based Management of Acute Malnutrition (CMAM)—FANTA 2018c
- Nutrition Assessment, Counseling, and Support (NACS)—FANTA 2016
- Integrated Management of Childhood (and Neonatal) Illnesses (IMNCI)—WHO, updated in 2014
- Caring for Newborns and Children in the Community (CNCC)—WHO 2015
- Integrated Community Case Management (iCCM)—CORE Group, Save the Children, Basic Support for Institutionalizing Child Survival (BASICS), and Maternal and Child Health Integrated Program (MCHIP) 2012

USAID Advancing Nutrition examined the nutrition-related interventions and guidance included in the most-used packages. This document provides a high-level overview of seven health packages (listed in box 1) that include nutrition and focus on frontline community- or facility-level providers. We describe commonly used tools that implementers can use as is, adapt, and/or combine to meet their specific goals related to improving nutrition outcomes. Our goal is to enable our intended audience—government and nongovernmental organizations—to efficiently compare the content of packages, combine or adapt them as needed, and use them to introduce, strengthen, or expand the nutrition-related elements of their initiatives.

Methods

To prepare this report we reviewed: a) all available guidance, planning, and implementation materials for each package[1] and; b) available literature on the effectiveness or impact of the packages on nutrition service delivery or nutrition outcomes—especially breastfeeding and complementary feeding.

For the purposes of this review, we defined a package as a set of materials for program planning and implementation, often including training materials (for trainers and participants), job aids (such as counseling cards or decision algorithms), and monitoring tools. In collaboration with USAID, we selected packages that: a) are designed to support the provision of nutrition services either exclusively or alongside other health services at the facility or community level; and b) were either recognized globally by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), or USAID, or were used in five or more countries.

Review of Package Materials

To systematically review package materials, USAID Advancing Nutrition developed a tool based on available guidance on priority nutrition interventions and behaviors: WHO "building blocks" of health systems (2011), WHO standards of care, and the recently-updated WHO report *Essential Nutrition Actions: Maintaining Nutrition through the Life-Course* (2019). In consultation with USAID, we also solicited feedback from 45 technical experts from the global nutrition community and field-based country staff. We received responses from 10 USAID Advancing Nutrition staff, 4 USAID staff, and 21 other individuals including staff from UNICEF, implementing partners, and independent consultants.

The final tool (see annex 1), which we revised based on feedback received, identifies specific priority content in the following areas: 1) health system building blocks addressed (WHO 2011); 2) capacity strengthening methodology; 3) training content on nutrition services to deliver; 4) training content on how to deliver services; and 5) training content on behaviors to promote.

USAID Advancing Nutrition staff and a consultant with expertise in capacity strengthening used the tool to review the content of the generic packages (country/context-agnostic) and relevant supporting materials. For the Nutrition Assessment, Counseling, and Support (NACS) package, which does not provide generic training materials, we reviewed the materials developed for training health workers and community volunteers in Zambia. All findings are based on comparisons of the packages against the assessment tool.

Review of Relevant Literature

We searched PubMed to identify relevant peer-reviewed journal articles, and searched Google as well as organization and project websites for grey literature on the evidence of effectiveness for each of the packages. The search included key words for each of the packages, for impact or effectiveness, and for nutrition, breastfeeding, complementary feeding, dietary diversity, or infant and young child feeding. Among the search results, we identified for full text review articles that reported on a package's impact on nutrition-related services or outcomes.

[1] When available, we reviewed generic (country/context-agnostic) materials. For the NACS package, no such generic training materials were available, so we looked at those that were developed for training health workers and community volunteers in Zambia.

Limitations of Study Methods

The availability and rigor of evidence of effectiveness varied across packages. The lack of evidence for some packages limited our ability to provide information on their usefulness in program contexts.

Our review was confined to global generic resources; however, most packages have been adapted, to a greater or lesser extent, to their contexts. As part of the adaptation process, countries and implementing agencies have developed additional resources or guidance. Our review did not cover all country adaptations and additions.

At the same time, some packages did not include generic training materials. For the NACS package, we selected and reviewed training materials for one country. We cannot confirm how well the selected training materials reflect other countries' NACS packages and training materials. For the iCCM package, we referred to the Caring for Newborns and Children in the Community (CNCC) trainings.

With the abundance of materials that accompany each of these packages—planning and adaptation guidance, facilitator's guides, participant guides, handouts/job aids, as well as the many country adaptations—we may have overlooked aspects of one or more of the packages. This is particularly true of the Integrated Management of (Newborn and) Childhood Illness (IMNCI) package, which was first developed in 1995 and now has many updates and addendums. It was difficult to know which resources were meant to supersede earlier versions, which might be considered the "gold standard," or which guidance document should be considered an essential part of the package.

Finally, it is important to reiterate that while all of these packages address nutrition, they each have their own objectives and audiences. For example, the IMNCI and NACS packages primarily help health workers deliver services in health facilities while the Community-Based Infant and Young Child Feeding (C-IYCF) package and Essential Nutrition Actions and Essential Hygiene Actions framework (ENA/EHA) guide community health workers (sometimes even volunteers) in delivering community-based services. Readers are encouraged to note the content, strengths, and weaknesses of each package to identify which are appropriate to their contexts.

Organization of This Document

We present our findings in several sections, beginning with a brief description of each package, including evidence of effectiveness, and followed by the five areas of our review tool. Where appropriate, we compare package content in a color-coded table indicating the degree to which each package addresses or covers a given element.

It is important to note that each package and each training or course within a package has distinct objectives, intended beneficiaries, and trainees. Furthermore, each package emphasizes the importance of adapting the content and implementation to the local context, especially according to the strength of the health system and health facility readiness; and each package focuses on specific target audiences.

A final note: To maximize the utility of this report and the findings we present below, users should have identified the context-specific needs and goals in mind.

Findings

In the sections that follow, we describe each package and then examine it in terms of how it considers or addresses the health system building blocks; characteristics of training resources and methodologies; and the content (clinical skills as well as behaviors trainees are taught to promote) of training materials. We begin with packages focused specifically on the delivery of nutrition services—C-IYCF, ENA, CMAM, and NACS—with the last primarily used at the facility level. We then present packages designed for the provision of a broader array of child health services—IMNCI, CNCC, and iCCM.

Package Descriptions

Community-Based Infant and Young Child Feeding Counseling Package

The C-IYCF package was developed by UNICEF New York with technical and graphic support from Nutrition Policy and Practice and the Center for Human Services, the nonprofit affiliate of University Research Co. in 2010. It was updated and expanded in 2011, 2012, and 2013. The aim of the package is to empower and enable community workers to support pregnant women, mothers, and other caregivers in adopting and sustaining optimal IYCF practices through support groups, one-to-one counseling, and community mobilization.

Focus of package: Children under 2 years old

Uptake of package: 68 countries (UNICEF NutriDash)

Contents: Guidance on program planning, adaptation, and programming; materials for training community workers; and tools for providing counseling, leading support groups, and holding other community events (UNICEF 2012).

Location of services delivered: Communities and homes, though health workers are often trained to provide complementary/similar services at the facility level

Types of services delivered: One-to-one counseling during home visits, community support groups, community mobilization (dialogues)

Service providers: Community workers (paid and unpaid), though facility-based health workers are also often trained to provide similar services and support/supervise the community workers

Evidence of effectiveness: Implemented at scale in one local government area in Nigeria; impact on food consumption during pregnancy, early initiation of breastfeeding, and exclusive breastfeeding among children 0–5 months old (see **annex 2**)

Essential Nutrition Actions/Essential Hygiene Actions Framework

The ENA/EHA package, originally developed by BASICS, WHO, and UNICEF in 1997, has been updated and expanded several times by various organizations—most recently by USAID in 2015.[2] The framework "is a tool for advocacy, planning, training, and delivery of an integrated package of interventions at scale." Like the C-IYCF package, it aims to strengthen the delivery and promotion of evidence-based essential nutrition and hygiene practices.

Focus of package: Children under 2 years old

[2] Note that the ENA/EHA package is not the same as WHO's recent publication, *Essential nutrition actions: mainstreaming nutrition through the life-course* (2019), or its predecessor, *Essential Nutrition Actions: Improving maternal, newborn, infant and young child health and nutrition* (2013).

Uptake of package: Not quantified, but according to its developers the ENA/EHA framework has been implemented by governments and nongovernmental organizations (NGOs) across sub-Saharan Africa, Asia, and Latin America

Contents: Overview, key message booklet, health worker training guide, community volunteer training guide, reference materials, handouts, and facility-based service quality self-assessment tools (CORE Group 2017).

Location of services delivered: Health facilities, communities, and homes

Types of services delivered: One-to-one counseling/negotiation, community support groups

Service providers: Health workers, nutrition managers, and community workers

Evidence of effectiveness: Three districts in Nepal, pilot study in Bangladesh; impact on exclusive breastfeeding rates, feeding children during illness, diversity of children's diets, quantity consumed by women during pregnancy, as well as a small improvement in weight-for-age Z-scores[3] (see **annex 2**)

Community-Based Management of Acute Malnutrition

CMAM seeks to increase access to high-quality treatment for acute malnutrition through community outreach and mobilization; outpatient management of severe acute malnutrition (SAM) without medical complications; inpatient management of SAM with medical complications; and services or programs to manage moderate acute malnutrition (MAM), such as supplementary feeding programs (FANTA 2018). The latest CMAM training guide fully integrates community management of at-risk mothers and infants (C-MAMI), which is designed to help health workers assess, identify/classify, and manage at-risk mothers and infants under 6 months in the community who are nutritionally vulnerable (ENN 2018).

Focus of package: Children 6–59 months of age; with the inclusion of C-MAMI, all children under 5 years of age and at-risk mothers

Uptake of package: 70 countries, including many countries that have integrated CMAM into government policies (FANTA 2018)

Contents: WHO guidelines and protocols for the management (inpatient and outpatient) of acute malnutrition, trainer's guide, handouts/reference manual, PowerPoint presentation introducing the approach, and a costing tool. With the inclusion of C-MAMI, the package also features: 1) a tool for assessing infant feeding, nutritional status, and maternal mental health and identifying/classifying and managing malnutrition; 2) counseling cards; 3) a counseling and support actions booklet; and 4) program management cards.

Location of services delivered: Health facilities and communities

Types of services delivered: Community outreach in support of the management of SAM, including screening for, referral of, and management of malnutrition (inpatient and outpatient); and transporting and storing supplies (especially of ready-to-use therapeutic food [RUTF] and other therapeutic food). (Now also includes through C-MAMI: maternal mental health assessment and counseling and support for feeding infants under 6 months of age.)

Service providers: Health care managers and health care providers (health outreach and community mobilization coordinators and district supervisors for community health workers [CHWs])

Evidence of effectiveness: Numerous; impact on wasting (see **annex 2**)

[3] The Z-score is a measurement of the weight and height of a child at a given age, relative to that of other children of the same age.

Nutrition Assessment, Counseling, and Support

The NACS package originated as Food by Prescription in Kenya in 2006, and initially focused on people living with HIV. It was renamed NACS by the U.S. President's Emergency Plan for AIDS Relief in 2009, when the counseling element was added, and was subsequently updated in 2016 (FANTA 2016). NACS is "a client-centered programmatic approach for integrating a set of priority nutrition interventions into health care services and strengthening health systems" and it "covers prevention, detection, and treatment of malnutrition and maintenance of improved nutritional status to prevent relapse" (FANTA 2016).

Focus of package: All populations across the continuum of care

Uptake of package: 12 countries

Contents: User's guide, which provides an overview of NACS and includes guidance on planning, monitoring and evaluation, and quality improvement; numerous country examples of training packages and reference materials

Location of services delivered: Health facilities, but with emphasis on linking to community support

Types of services delivered: Assessment, one-to-one counseling, some facility-based education, referral to support services, and treatment/provision of supplements and food rations

Service providers: Health workers

Evidence of effectiveness: Limited to service delivery outputs (see **annex 2**)

Integrated Management of (Newborn and) Childhood Illness

WHO and UNICEF jointly developed the Integrated Management of Childhood Illness (IMCI) strategy in 1995 to "reduce death and the frequency and severity of illness and disability, and to contribute to improved growth and development" (WHO 1999). There have since been many updates and addendums, including the addition of care for newborns under one week of age, when it was first referred to as the Integrated Management of (Newborn and) Childhood Illness or IMNCI package (Costello and Dalglish 2016)[4]. The strategy involves improving health workers' skills, health systems, and family and community practices.

Focus of package: Children under 5 years old

Uptake of package: Over 100 countries, often integrating the strategy into the existing health system (Costello and Dalglish 2016)

Contents: WHO recommendations, effective teaching guides, planning guide, guidelines for follow-up after training, guidance for planning, implementing, and evaluating preservice training, distance learning facilitator's guide, distance learning self-study modules, distance learning management guide, complementary course on HIV and AIDS, handbook, and a booklet of charts with the sequence of case management steps

Location of services delivered: Primarily health facilities, despite the intention to improve family and community practices

Types of services delivered: Prevention and treatment of illnesses, which includes one-to-one counseling

Service providers: Health workers

[4] We use the term IMNCI for consistency throughout this report, recognizing that newborn care was added at a later date.

Evidence of effectiveness: Many studies, but few on the strategy's impact on nutrition-related outputs or outcomes (see annex 2)

Caring for Newborns and Children in the Community

The CNCC package, launched by WHO and UNICEF in 2015, is intended to reduce newborn and child mortality and promote healthy growth and development by increasing the coverage of household and community interventions. The package was designed to support the community component of the IMNCI strategy.

Focus of package: Children under 5 years

Uptake of package: Not available

Contents: Three courses (Caring for the Child's Health Growth and Development; Caring for the Sick Child; and Caring for the Newborn at Home), which include planning guidance, a participant manual, facilitator notes, relevant job aids (counseling cards, photo book, growth chart booklet, and manual for the community health worker on care for the sick child)

Location of services delivered: Community

Types of services delivered: Teaching and supporting pregnant woman, lactating women, infants, young children, and their families; assessing sick children to identify signs of common childhood illness; testing children with fever for malaria; identifying malnutrition (by measuring middle-to-upper-arm circumference [MUAC]); and referring women and children as necessary

Service providers: Community health workers

Evidence of effectiveness: Not available

Integrated Community Case Management

The iCCM strategy seeks to deliver lifesaving curative interventions for common childhood illnesses such as pneumonia, diarrhea, and malaria, in particular where there is little access to facility-based services (CORE Group, Save the Children, BASICS and MCHIP 2012). Similar to the CNCC package, the iCCM package is intended to complement other packages. In this case, it was specifically designed to strengthen the community arm of IMNCI.[5] iCCM builds the capacity of community-based service providers and "includes promoting timely care-seeking, encouraging appropriate home care, as well as referrals to and supervision from facilities" (CCM Essentials). WHO and UNICEF view the Caring for Newborns and Children in the Community package as the "gold standard" training package for iCCM.

Focus of package: Children under 5 years

Uptake of package: Unknown

Contents: Training guide, training handouts, PowerPoint training slides, and costing tool

Location of services delivered: Community

Types of services delivered: Treatment of pneumonia, diarrhea, and malaria, sometimes the provision of neonatal care, and the treatment of malnutrition

Service providers: Health care managers and providers who manage, supervise, and implement services for the treatment of SAM

Evidence of effectiveness: 21 programs and 3 countries; SAM recovery rate (see annex 2)

[5] The community arm of IMCI calls for three supporting elements: community-facility partnerships; community-based providers for care and information; and key family practices for growth and development, disease prevention, home care for illness, and care-seeking for danger signs.

Health System Building Blocks

The majority of the packages we reviewed are delivered through, as a complement to, or sometimes in duplication of an existing health system. We assessed various aspects of each package's guidance on planning, adaptation, implementation, monitoring, and supervision in the context of WHO's health system building blocks.[6] The building blocks considered and our findings are presented below. Table 1 presents an overall view of our findings. Additional information on the items assessed for each building block can be found in the sections that follow.

Table 1. Packages in the Context of WHO's Health System Building Blocks

Building Block	C-IYCF	ENA/ EHA	CMAM	NACS	IMNCI	CNCC	iCCM
Service delivery (12 items, light blue = 0-3 items, medium blue = 4-5 items, dark blue = 6-12 items)							
Workforce (10 items, light blue = 0-4 items, medium blue = 5-6 items, dark blue = 7-10 items)							
Equipment and supplies (4 items, light blue = 0-1 items, medium blue = 2-3 items, dark blue = 4 items)							
Information systems (7 items, light blue = 0-2 items, medium blue = 3-4 items, dark blue = 5-7 items)							
Financing (2 items, light blue = 0 items, medium blue = 1 items, dark blue = 2 items)							
Leadership and governance (8 items, light blue = 0-3 items, medium blue = 4-5 items, dark blue = 6-8 items)							

[6] We acknowledge the concern that the WHO building blocks fail to take into account patient engagement and the need to communicate information about the health system to patients. However, we are confident that these aspects have been covered in other sections of our review.

Service Delivery

WHO states that meeting a minimum standard of service provision or delivery is crucial to achieving programmatic goals. In accordance with WHO guidance, our review looked at eight key qualities of services (see box 2).

In summary, we found the following:

- Ensuring multiple contact points to reinforce adoption of optimal nutrition practices is critical for bringing about social and behavior change. Only the C-IYCF, ENA, and CNCC packages provide guidance on the frequency or number of contacts each beneficiary should receive, though the NACS training we reviewed also emphasized the need for a continuum of care that "tracks a client over time through a comprehensive set of health services spanning all levels of care, from the hospital to the home." While the C-IYCF package does not specify a precise number of home visits or support group meetings, it does present a range of contact point opportunities and encourages reaching beneficiaries at multiple contact points. Similarly, the ENA/EHA package suggests one initial and two follow-up visits, but also makes clear the need for multiple influencers to promote new behaviors at multiple contact points.
- None of the packages suggests a goal for the number and distribution of health facilities offering essential nutrition services.
- Though implementation of all packages will likely involve health facilities to a greater or lesser degree, only the iCCM and NACS planning guides suggest carrying out facility readiness assessments and provide tools for doing so. The C-IYCF package suggests taking into consideration health facility and community resources, but offers no additional guidance or tools; the CMAM package provides considerations for selecting facilities; and while the WHO web page for IMNCI includes a manual for conducting health facility assessments, this is not referenced in the *IMNCI Planning Guide* (WHO and UNICEF 1999d).
- Only the CMAM package details how to conduct a situation analysis, including, among other things: an assessment of caregivers' perceptions of illnesses; current care-seeking and home-based care practices observation; focus groups; and in-depth interviews with health workers, community members, and caregivers to identify factors affecting demand for CMAM and ways in which community outreach could be effectively used to meet *and* increase demand. The

Box 2. Key Considerations for Service Delivery

- **Comprehensiveness:** Does the package include guidance on planning for implementation of program activities and/or delivery of services?
- **Accessibility:** Does the package propose activities to help build demand for services?
- **Coverage:** Does the package specify a **goal** related to the number and distribution of health facilities offering specific services per 10,000 population?
- **Continuity:** Does the package include guidance on contact points—frequency, timing, or length?
- **Quality:** Does the package suggest assessing health facility **readiness** in any way? Does the package include a guide or reference material for service delivery? Does the package include job aids for program implementation and/or service delivery? Does the package include any guidance on quality improvement/quality assurance (QI/QA)?
- **Person-centeredness:** Does the package include guidance on conducting formative research to assess the barriers to adopting and sustaining optimal behaviors? Does the package include guidance on adapting materials to fit the context?
- **Coordination:** Does the package include guidance on community-facility linkages?
- **Accountability and efficiency:** Does the package include guidance on developing or strengthening mechanisms for collecting and reviewing client feedback on services?

ENA/EHA and NACS packages suggest conducting formative research as needed, and the iCCM package suggests a situation analysis, but no packages provide guidance or tools for doing so.

Workforce

To determine the extent to which each package addresses issues related to the workforce—defined as frontline providers of nutrition services (principally community health volunteers, community health workers, nurses, and nurse-midwives)—we looked at efforts to ensure an adequate number of service providers, manage their workload, and promote their performance (see box 3). The latter includes such considerations as articulation of job descriptions (expected roles and responsibilities), assessment of competencies, and provision of training, support, supervision, and incentives. In summary, we found the following:

Box 3. Key Considerations for Strengthening the Workforce

- Does the package suggest any particular ratio of functionaries/service providers to beneficiaries?
- Does the package include criteria for selecting trainees?
- Does the package clearly explain what trainees will be expected to do, once trained?
- Does the package explain the specific competencies that trainees will need to perform the job in that particular setting?
- Does the package include any guidance on task shifting or task sharing?
- Does the package include or reference any sort of assessment of service providers' knowledge and/or skills?
- Does the package include guidance for how the learning will be sustained over time (e.g., on-the job mentoring, coaching, follow-up trainings)?
- Does the package include guidance for supervision?
- Does the package include guidance on remuneration, recognition, and/or motivation of workers?

- Most packages included criteria for selecting trainees, at least some indication of essential skills trainees will need/ build, and some type of assessment of the trainees' knowledge and/or skills.
- The C-IYCF package is the only package that discusses the need to determine a ratio of CHWs to households during the planning process. Only the C-IYCF and iCCM packages go into detail on the need for and content of job descriptions. The C-IYCF *Planning Guide* makes clear the importance of clarifying the job description of the CHW. The *iCCM Toolkit* (RAcE 2017) also stresses the importance of a job description and goes further, suggesting that community members be engaged in developing the job description to "make it more culturally appropriate," and also that national and district officials be engaged to "ensure that the job description contributes to national objectives and aligns with job descriptions in other CHW programs."
- All packages include job aids (flowcharts, posters, algorithms) to help providers do the tasks expected of them—including following procedures, offering correct information, and making decisions. Fortunately, all trainings include instruction on using job aids, with the exception of the ENA/EHA training for community health workers.
- Supportive supervision is mentioned in all packages. The *Community Case Management Essentials* (CORE Group, Save the Children, BASICS, and MCHIP 2012) handbook explains, "Supervision is the glue that holds different stakeholders together: parents, CHWs, health-facility staff, and district managers. It is impossible to ensure good quality in CCM without regular supervision." The C-IYCF package goes further, suggesting that supportive supervision and mentoring "should be 'institutionalized' as part of the expected tasks of the identified staff, with agreed and monitored targets for regularly scheduled supportive supervisory visits."

Given the importance of supervision, we felt that it was worthwhile to provide some details on the extent to which this was covered in each package:

- **C-IYCF:** The supervision tool in the C-IYCF package includes observation of how the CHW or community health volunteer assesses breastfeeding and complementary feeding practices. It also provides guidance on addressing challenges experienced or deviation from recommended practices; prioritizing issues for action; and using the appropriate interpersonal communication techniques.
- **ENA/EHA:** The ENA/EHA package refers to the Quality Improvement Verification Checklists, Partnership Defined Quality (Save the Children), the Integrated MNCH Supportive Supervision (JSI), and the Supportive Supervision at Key Health Contact Points (JSI) tools.
- **CMAM:** The CMAM Supervision Checklist includes assessment, classification, and treatment of malnutrition along with assessment of breastfeeding practices, support for breastfeeding, and recording of breastfeeding among infants under 6 months.
- **NACS:** The NACS package encourages supportive supervision, but places greater emphasis on the quality improvement approach.
- **IMNCI:** The IMNCI supervisory tool asks supervisors to note the number of cases needing assessment on feeding; the number assessed; and the number of caretakers counseled on feeding problems.
- **CNCC:** The CNCC package includes several examples of supervisory checklists. The only items related to nutrition in these tools focus on counseling (assessing if the provider gave the correct messages on feeding, increased fluids and when to return).
- **iCCM:** The *Community Case Management Essentials* guide describes supervision as fundamental: "CHW algorithms and corresponding job aids are the basis for defining and monitoring quality, and for training and supervising CHWs." The guide advises implementers to build in supervision from the beginning, saying, "It is impossible to ensure good quality in CCM without regular supervision. Supervision allows program staff not only to collect data on quality but also to assess reasons for lapses, anticipate future problems, and put solutions in place. It is also a mechanism to reinforce CHWs' training, boost their confidence, and increase their morale."

Equipment and Supplies

Nutrition services require certain equipment and supplies (see box 4). Though needs will depend to some extent on specific services being provided, most will likely require scales, height boards, MUAC tapes, charts for analysis of nutritional status, counseling cards, food demonstration bowls, iron supplements, RUTF, and ready-to-use supplementary foods. Procurement, distribution, and management of supplies is critical to service delivery.

We found that packages intended for use at the facility level (NACS) and/or for treatment (IMNCI, CNCC, iCCM, and CMAM) addressed this tangible building block, whereas those focused more exclusively on the delivery of nutrition counseling and support at the community level (C-IYCF and

Box 4. Key Considerations for Equipment and Supplies

Programs should ask if the package—

- encourages alignment with the national guidance on essential medicines
- encourages alignment with the national health supply chain or logistics management (procurement and distribution) systems
- provides guidance regarding necessary equipment, materials and supplies
- includes guidance on supply chain management; procurement of necessary equipment, materials and supplies; and warehousing.

ENA) paid less attention to maintaining supplies. This is somewhat reasonable, given the focus of the latter packages; however, even community-based counseling requires some supplies for counseling and food demonstrations, for example.

Information Systems

Ideally, a strong and integrated health management information system (HMIS) underpins all elements of the health care system. Routine record keeping at all levels and a smooth flow of information facilitate decision-making and enable quick identification of bottlenecks. Furthermore, data management, data quality review, and data use are all critical for proper planning and quality improvement. In summary, in looking at the use of information systems (see box 5), we found the following:

Box 5. Key Considerations for Information Systems

Does the package do the following?

- Encourage alignment with the national health information system (HIS)?
- Suggest routinely using or collecting indicators?
- Suggest and/or include guidance on the use of home-based records?
- Include forms for data collection and/or reporting?
- Include any guidance on data management?
- Include any guidance on data quality review?
- Include any guidance on using data for decision-making?

- All packages except the ENA/EHA package include some form or forms of monitoring of implementation.
- All packages except the C-IYCF and ENA/EHA packages include guidance on aligning data collection and reporting with existing HMIS. The CMAM packages explains that "an HMIS that includes reporting on cases of SAM might already exist, and/or the Ministry of Health or UNICEF might have reporting requirements for reporting on acute malnutrition" and goes on to emphasize that any information system established for CMAM implementation "should complement—not duplicate—existing systems."
- Guidance on and training for data collection, data management, data quality review, and data use are more limited across packages. Typically, the packages mention the need for these important tasks, but provide little guidance or training on how to carry them out.
- It is worth noting that the quality improvement approach, which involves the use of data by QI teams for assessing and improving the quality of care, is a large part of the NACS approach, and the CNCC package refers users to UNICEF guidance on QI. However, the trainings for these packages do not cover data use or the QI approach.
- The CMAM package provides guidance and handouts for trainees to report, graphically display, and use data.

Financing

Although programs may not be able to influence national financing, they can and should consider the costs of implementing the package and advocate for sustained financing (box 6). Only three of the packages—the NACS, CMAM, and iCCM packages—include guidance on how to estimate implementation costs, or how to secure financing for

Box 6. Key Considerations for Financing

Does the package include guidance on—

- costing implementation?
- financing implementation (for sustainability and self-reliance)?

implementation. Our findings around discussion of financing in the packages include the following:

- **NACS:** This package includes an entire module on costing and planning.
- **CMAM:** This package offers guidance on costing and includes a costing tool.
- **iCCM:** This package also includes guidance on costing. It advises users to cost the entire plan for a defined period of time (at least 5 years) and account for expanding and scaling up in the future. It also suggests that when supplementing current country activities with the iCCM package of services, implementers should think holistically, considering workforce capacity, remuneration, supervision, and supply chain. In addition, the *Community Case Management Essentials* guide encourages using the Marginal Budgeting for Bottlenecks tool to estimate costs and resource needs.

Leadership and Governance

Leadership and governance are critical for efficient and effective implementation that can be sustained and taken to scale. However, we found it challenging to assess how well a package addressed this. We looked at five different aspects (see box 7). Key observations include the following:

Box 7. Considerations Related to Leadership and Governance

- Is the package based on global guidance?
- Does it encourage alignment or harmonization with national policies?
- Does it include guidance on engaging/coordinating with the government?
- Does it include guidance on engaging with civil society actors?
- Does it provide guidance for soliciting community or beneficiary input?

- All packages are based on global guidance and encourage alignment or harmonization with national health policies.

  "Policies and systems need to be in place to support community workers and facilitate the community-based programme, whether it is an integrated community-based health and nutrition programme or a stand-alone IYCF community programme. Supporting policies and systems are crucial to the effective functioning and sustainability of community-based programmes. If these are not addressed from the outset of the programme, the likelihood of success is substantially reduced." —C-IYCF *Planning Guide.*

- The iCCM, CMAM, NACS, and IMNCI packages all hint at the importance of integrating services promoted by the package into existing health systems. The iCCM package explains that it is at the national level that a package can be "fully incorporated into national priorities, policy, and programs, with corresponding capacities to sustain it."
- Only the iCCM and NACS packages suggest how managers might collect community/beneficiary input on their services—those delivered according to package direction. All but the CNCC package provide guidance on engaging with civil society actors.

Characteristics of Training Materials and Methods

Nearly all packages reviewed include tailored training materials, with the exception of iCCM, which refers readers to the CNCC Caring for Newborns and Children in the Community training course. All training materials include a facilitator's guide and participant materials, comprising a manual, handouts, and/or reference materials.

It is important to note that the ENA/EHA package includes training guides and reference manuals for health workers (Guyon et al. 2015b, Guyon et al. 2015d) and others for community workers (Guyon et al. 2015a, Guyon et al. 2015c) as well as the *Essential WASH Actions: A Training and Reference Pack to*

Supplement Essential Nutrition Actions (Rosenbaum and Bery 2017). The NACS training materials reviewed were from Zambia, where there is a training for facility-based providers and another for community volunteers (FANTA 2017a, FANTA 2017b, FANTA 2017c). Finally, the CNCC includes three distinct courses: Caring for the Child's Healthy Growth and Development, Caring for the Sick Child in the Community, and Caring for the Newborn at Home (WHO and UNICEF 2015a). For simplicity, we have only included one column for each package in the tables that follow—in section 3 and 4. However, we have noted where there were significant differences between trainings for the same package.

We assessed the methods and approaches used. These are our key findings:

- Generally, the scope of each training is well-defined. Course objectives are clear and target participants well-defined, ranging from community health workers (C-IYCF, ENA, CNCC, C-IMNCI, and NACS) to professional health care providers (CMAM,[7] ENA, IMNCI,[8] NACS).
- Methods used to reinforce learning are diverse, ranging from 9 methods (IMNCI) to 12 (C-IYCF, ENA, NACS) (see box 8 for the full list of methods).
- Training length ranges from 3 days (CNCC trainings on Caring for the Child's Healthy Growth and Development and Caring for the Sick Child in the Community) to 11 days (IMNCI).
- Ideally, competencies should be assessed at the completion of a training. Such an assessment can take the form of a written knowledge test, an in-training skills test (practicing skills with feedback), or observed practice. A "passing" score is required to receive a certificate of course completion. However, only half of the training materials reviewed (C-IYCF, ENA, and NACS) included generic tools for assessing knowledge and/or skills.

Box 8. Training Methods

- Presentations
- Case studies
- Role-playing
- Individual reflection
- Question-and-answer
- Discussion
- Field visits
- Observations
- Participant feedback
- Participant assessments

Based on our review, we assessed the quality of training materials in the following areas:

- **Appropriateness of methods:** We assessed the appropriateness of methods for the intended audience and appropriateness for strengthening the identified competencies. When considering appropriateness for the intended audience, the methods should be tailored to the education, experience, and learning traditions of the trainee. It is well known that a balance of theory-focused knowledge and practice-focused skills, along with diverse methods (case studies, clinical simulations, practice, and feedback) are needed to effectively build skills (WHO 2018c, Bluestone et al. 2013). This is particularly important when designing training for lower-literacy groups, such as trainings for community health volunteers (one of the target audiences of several package trainings). Selected methods should link to the learning objectives and, to the extent possible, provide opportunities for practical application of the knowledge with structured feedback.
- **Usability:** A training package is rated high in usability when it includes all guidance and resources needed for organizing the training and clear guidance on adaptation, planning, and delivery. If the package requires a group of experts from an outside organization to either adapt

[7] The CMAM training is adaptable to various types of service providers. However, the training materials specify that participants should provide, manage, and/or supervise some services related to SAM.

[8] IMCI training materials specifically target health care providers working at first-level facilities.

or train, it is considered less "usable." Other factors include ease of access to the full training package, format of training materials (accessibility in an editable format), and whether the training materials are already tailored to a specific country or region. We found the IMNCI training to be the least useable and complete, compared to others in this review.

- **Depth:** Our assessment of training depth is based on several factors. First, we asked if the training promotes higher order thinking and learning. For example, a training that only requires the participant to "define" undernutrition has less depth than one that asks participants to assess factors contributing to undernutrition in their communities. Second, we asked about the type of information presented. Does the training provide basic information about a skill or does it promote more robust understanding of the skill through practice and feedback? We determined depth by carefully assessing training content, which is described in greater detail below.

Table 2 presents these ratings. Once again, the darker shade of blue indicates that the training uses more appropriate methods and is more sustainable and scalable, "off-the-shelf" ready, and comprehensive (has greater depth) in comparison to trainings colored with the medium and lighter shades of blue. In this case, the exact criteria corresponding to each shade of blue in the table varies for each building block. The shading is a judgement call based on items assessed and expert review.

Table 2. Training Characteristics

Key: Dark Blue = High, Medium Blue = Medium, Light Blue = Low						
Characteristic	**Ratings**					
	C-IYCF	**ENA/EHA**	**CMAM**	**NACS**	**IMNCI**	**CNCC**
Appropriateness of Methods*	• Follows adult learning techniques, is competency-based, and uses a wide variety of training methods • Includes a method for assessing competencies at the completion of the training • Provides tools for supportive supervision	• Minimum qualifications for trainers are not provided • No ratio of trainers to trainees is provided • Follows adult learning techniques, using a wide variety of training methods • Includes a sample pre/post-training test that can be administered in writing or verbally • Other than supervision, there is no mention of providing any remote support or follow-up to trainees after the training	• Follows adult learning techniques, using a wide variety of training methods • Does not include a tool for assessing competencies at the completion of the training. • Provides a training guide "designed for health care managers and health care providers who manage, supervise and implement services for the management of SAM."	• Trainers need specific nutrition related competencies • Competency-based • Uses a wide variety of training methods [name them] • Includes competency assessment—written pre- and post-tests • Limited post-training follow-up • • Does not include training for managers and supervisors	• Includes a separate 5-day facilitator course • Is competency-based • Uses a variety of training methods, including case-based methods • Does not include a tool for assessing competencies • Does not include strategies for ongoing support post-training • Does not include training for supervisors or managers	• Uses a wide variety of training methods • Does not include suggestions or a tool for assessing competencies at the completion of the training • Does not include provisions for follow-up after the training

Key: Dark Blue = High, Medium Blue = Medium, Light Blue = Low						
Characteristic	**Ratings**					
	C-IYCF	**ENA/EHA**	**CMAM**	**NACS**	**IMNCI**	**CNCC**
Usability**				Note: Training for HCWs is considerably more "ready" for use.		
Depth***		Note: Training for HCWs has notably less depth.				Note: If all three trainings are rolled out, level of depth is high.

***Appropriateness:** High=uses diverse methods suitable for the defined audience; medium=some diversity of methods that are partially appropriate for the audience; low=methods are didactic and/or not appropriate for the audience.

****Usability:** High=includes all materials needed and guidance for adaptation, preparation, and assessment; medium=provides most needed training materials, but has gaps in guidance on adaptation, preparation, or assessment; low=provides limited guidance in key areas.

*****Depth:** High=covers nutrition concepts in sufficient detail, with opportunities for practice and reflection; medium=includes some essential detail, but additional depth may be needed; low=more detail is needed for a non-expert facilitator to deliver the training.

Training Content

In this section, we present the findings from our review of training materials. We reviewed the nutrition-related clinical services trainees are taught to deliver, the methods they are taught for the delivery of services, and practices or behaviors they are taught to promote. As indicated previously, we have only included one column for each package despite the fact that some packages include multiple trainings. However, we have noted any significant differences between trainings for the same package.

Clinical Services to Deliver

Which clinical services are delivered—for nutrition assessment, analysis, management, treatment, or support—depends on the focus of the package as well as the life stage of the client. For each package[9], we reviewed the training materials (training resources, facilitator's manual, and participant's manual/handbook) to identify the services that providers are taught to provide (table 3). Our lists of these tasks draws heavily on WHO standards and the recently updated *Essential Nutrition Actions* WHO report (2019). In summary, we found the following:

Table 3. Clinical Services Trainees are Taught to Deliver

Key: Dark blue = high; medium blue = covered with less depth; light blue = covered with limited explanation; clear/white = not covered/mentioned; NA = not applicable, not a focus area of the package				
Service	**Packages**			
	CMAM	**NACS**	**IMNCI**	**CNCC**
Services for Pregnant Women				
Assessment		CV course includes less.	NA	Only the Caring for the Newborn at Home course
Analysis			NA	NA
Management, Treatment, or Support			NA	Only the Caring for the Newborn at Home course
Services for Infants and Children < 5 Years				
Assessment		No mention of assessing breastfeeding. CV course includes less.		Caring for the Sick Child in the Community course assesses only nutritional status. Caring for the Newborn at Home course assesses only breastfeeding.

[9] The C-IYCF and ENA/EHA packages are focused almost entirely on the provision of counseling, which is only one of the many nutrition-related "treatment" tasks. Therefore, these packages were not reviewed in terms of the clinical services they taught providers to delivery. Additionally, as mentioned previously, the Caring for Newborns and Children in the Community package is considered by WHO and UNICEF to be the "gold standard" training package for iCCM. Therefore, we did not review a separate training for iCCM, but instead direct the reader to the second CNCC course, Caring for the Sick Child.

Key: Dark blue = high; medium blue = covered with less depth; light blue = covered with limited explanation; clear/white = not covered/mentioned; NA = not applicable, not a focus area of the package				
Service	**Packages**			
	CMAM	**NACS**	**IMNCI**	**CNCC**
Analysis				Only in the Caring for the Sick Child in the Community course.
Management, Treatment, or Support		CV course includes much less.		Nothing in Caring for the Child's Healthy Growth and Development. Caring for the Newborn at Home course mentions only early initiation of breastfeeding.
Services for Children ≥ 5 Years and Adolescents				
Assessment	NA	CV course includes less.	NA	NA
Analysis	NA		NA	NA
Management, Treatment, or Support	NA		NA	NA
Services for Adults				
Assessment	With the inclusion of C-MAMI, at-risk mothers are nutritionally assessed using MUAC and also assessed in terms of mental health.	CV course includes less.	NA	NA
Analysis			NA	NA
Management, Treatment, or Support		CV course includes less.	NA	NA

- None of the packages trains providers to assess, analyze, or address children's developmental milestones (physical, cognitive, social, and emotional), which are a critical component of early childhood development.
- Only the IMNCI training suggests assessing children for vitamin A deficiency and classifying anemia.

- In terms of how nutritional status was assessed, providers are taught to use MUAC for children under 5 years (CMAM, NACS, and CNCC) and pregnant women (CMAM and NACS); weight-for-length/height of children under 5 years (CMAM and NACS); weight-for-age of children under 5 years (CMAM and IMNCI); body mass index (BMI)-for-age of adolescents (NACS); MUAC for adults (CMAM); BMI of adults (NACS); and pitting edema of feet of children and nonpregnant women (CMAM and NACS).
- CMAM, NACS, and IMNCI trainings teach providers to assess children and adults for anemia by looking at the palmar pallor of children and, in adults, also looking for pale conjunctiva or drowsiness among other signs (pale gums, nails, palms, and skin; breathlessness; rapid pulse; palpitation; weakness, dizziness).
- Only CMAM and NACS trainings teach providers how to treat malnutrition.
- Only the NACS training for facility-based providers and the CNCC course on caring for newborns at home train providers to assess birthweight, classify low birthweight, delay cord clamping, and facilitate skin-to-skin contact.
- The NACS training is the only training that provides guidance on how to calculate and analyze BMI-for-age of older children and adolescents.
- Only the NACS package prepares providers to deliver nutrition services to pregnant women.
- Only the NACS and CMAM trainings teach providers to assess, analyze, and treat adults' nutritional well-being. However, the CMAM training focuses on mothers of children under 5 years.
- The CMAM training is the only one that teaches providers to assess mothers' mental health and then to classify and act accordingly.

Delivery Service Techniques

Often overlooked are the skills related to *how*[10] services are delivered—operational tasks such as interacting with clients, managing time, ordering supplies, recording information, or using data or information to assess and improve the quality of services provided. The activities that frontline service providers carry out (and hence, the competencies they need) vary depending on the objectives of the package. However, frontline service providers, particularly those working at primary care health facilities, should also be able to build demand for services and support sustained adoption of new nutrition behaviors through community engagement or mobilization, home visits, support groups, or one-on-one counseling (table 4). In summary, we found the following related to how services are delivered:

[10] Additional techniques related to *how* services are delivered, such as the collection of essential information, data management, and data use for better quality services and outcomes are presented above in section 2, as they relate to the building blocks.

Table 4. Operational Tasks Trainees are Taught

Key: Blue = covered in the training; **c**lear/white = not covered/mentioned						
Task	**Package**					
	C-IYCF	**ENA/EHA**	**CMAM**	**NACS**	**IMNCI**	**CNCC**
How to mobilize communities		Only the HW course covers this. The CW course does not.	Focus is on outreach to identify those who are malnourished.			
How to counsel clients		The HW course gives significant attention to this while the CV course does less.		The HW course gives significant attention to this while the CV course does less.		The Caring for the Child's Healthy Growth and Development course includes less.
How to conduct home visits						
How to conduct support groups		Only the HW course covers this. The CW course does not.				

- Trainings for packages that focus on facility-based services (NACS and IMNCI) teach providers less about community mobilization, support groups, and home visits. In addition, despite its community focus, the CNCC courses do not teach these tasks.
- Interpersonal communication (IPC) skills for effective counseling sessions and support groups are important in any service, but critical for improving nutrition, which requires social and behavior change (see box 9). The CMAM training, which focuses more on treatment of malnutrition, does not prepare providers for counseling. In addition, the ENA/EHA training for community workers and the NACS training for community volunteers teach relatively few counseling skills. By contrast, the C-IYCF training as well as the ENA/EHA and NACS training for health workers teach almost all the IPC skills needed for counseling.

Nutrition-Related Care Practices to Promote

Care practices—that is, behaviors—are considered one of three primary determinants of nutritional status, along with the health environment and food security (UNICEF 1998). Using the IPC skills mentioned above, behaviors must be modeled, promoted, negotiated, and reinforced.

Box 9. Interpersonal Communication Skills

In our review, we identified 15 IPC skills important for counseling, promoting, and supporting nutrition behaviors. These include how to—

- build the confidence of a client
- create a respectful relationship with a client
- use helpful non verbal communication
- greet the client to establish a comfortable atmosphere
- assure and maintain confidentiality/privacy
- invite and talk with other family members and determine the best time to talk
- ask about/follow up on previous counseling session/visit
- ask open-ended questions
- listen and confirm what the client and/or caregiver says, does, or asks
- check client's comprehension of a recommended action
- analyze the client's key problems to mutually agree on the most important ones to address
- be aware of the social and political determinants of health
- discuss/negotiate a plan of action
- tailor/adapt messages or recommended actions to client's age and situation
- model/demonstrate behaviors/actions promoted.

Here, we look at the nutrition-related practices that providers are taught. In some cases, they are explicitly taught to promote the practices using specific counseling cards and key messages during one-to-one counseling, support groups, and other events. In other cases, they are simply taught the importance of the practices, presumably with the assumption that they use their counseling skills to promote them. Table 5 shows the degree to which each training covers priority nutrition-related practices[11]—the darker the shade of blue, the greater number of practices covered in the training.

[11] The list of priority nutrition-related practices draws on WHO standards and WHO's recently updated report, *Essential Nutrition Actions: Maintaining Nutrition through the Life-Course* (2019).

Table 5. Nutrition-Related Care Practices Trainees Are Taught to Promote

Key: Dark blue = covered; light blue = covered but with limited explanation; clear/white = not covered/mentioned; NA = not applicable, not a focus area of the package						
Behaviors	**Package**					
	C-IYCF	**ENA/EHA**	**CMAM**	**NACS**	**IMNCI**	**CNCC**
Practices for the nutritional well-being of pregnant women			NA	The CV training includes slightly less.	NA	NA
Breastfeeding practices						Not covered in the Caring for the Sick Child in the Community course.
Complementary feeding practices						Not covered in the Caring for the Newborn at Home course. The Caring for the Sick Child in the Community course includes less.
Health care and supplementation for infants and young children				Not covered at all in the CV training.		Not covered in the Caring for the Newborn at Home course.. The Caring for the Child's Healthy Growth and Development course includes less.
Practices for the social, emotional, and cognitive development of		Only as relates to skin-to-skin contact.			Only as relates to skin-to-skin contact.	Not covered in the Caring for the Sick Child in the Community course.

Key: Dark blue = covered; light blue = covered but with limited explanation; clear/white = not covered/mentioned; NA = not applicable, not a focus area of the package						
Behaviors	**Package**					
	C-IYCF	**ENA/EHA**	**CMAM**	**NACS**	**IMNCI**	**CNCC**
infants and young children						The Caring for the Newborn at Home course includes less.
Practices for the nutritional well-being of older children and adolescents	NA	Only the HW course covers this and only as relates to pregnant adolescents.	NA	NA	NA	NA
Practices for the nutritional well-being of postpartum women and other adults	Only as relates to mothers of children under 2 years.	Only as relates to mothers of children under 2 years.	Only as relates to mothers of children under 2 years.	Not covered at all in the CV training.	NA	NA
Practices for a healthy environment				The training for facility-based providers includes less.		Not in the Caring for the Sick Child in the Community course.

Practices for the nutritional well-being of pregnant women

The NACS, C-IYCF, and ENA/EHA packages, as well as the CNCC Caring for the Newborn at Home course, cover priority nutrition behaviors for pregnant women (and pregnant adolescents) (see box 10). None discusses the need to control salt intake, increase potassium intake, avoid sugar-sweetened beverages, or avoid processed meats. Only the NACS package mentions reducing the intake of free

sugars, reducing fat intake/avoiding fatty and fried foods, consuming fortified foods, or taking balanced energy and protein dietary supplements. The last two practices are mentioned only in the training for facility-based providers.

Breastfeeding practices

Almost all trainings cover optimal breastfeeding practices. The only exception is the CNCC Caring for the Sick Child in the Community course. A few other breastfeeding-related practices are less frequently mentioned. The ENA, IMNCI, and NACS packages do not discuss how to continue breastfeeding when a mother is separated from her child and/or how to express milk and then feed a child from a cup. Only the C-IYCF and CMAM packages discuss physical challenges related to breastfeeding such as cracked nipples or engorgement. The NACS trainings we reviewed do not cover practices for addressing common breastfeeding challenges, including poor latching, and the ENA/EHA package mentions only poor latching. None of the packages suggests practices for breastfeeding in the context of emergencies, which is particularly important during the coronavirus pandemic and in relation to numerous other global and local emergencies.

Complementary feeding practices

All packages cover the priority complementary feeding practices. All packages emphasize introducing complementary foods at 6 months, feeding children a variety of foods or a diverse diet, and feeding children actively or responsively the right quantity of food and at the right frequency. All packages except for the IMNCI package specifically mention the need to feed children plenty of fruits and vegetables. However, only the ENA, CMAM, and NACS packages mention feeding children fortified complementary foods. Furthermore, only CMAM discussed complementary feeding in the context of emergencies and only the NACS package mentions reducing the intake of free sugars and avoiding sugar-sweetened beverages. None of the packages discusses the need to control salt intake, increase potassium intake, avoid processed meats, or avoid fatty and fried foods.

Box 10. Nutrition-Related Practices for Pregnancy

- Consuming a diverse diet/variety of foods
- Consuming plenty of fruits and vegetables
- Consuming < 5 g of salt per day
- Using iodized salt
- Increasing potassium intake from food
- Reducing the intake of free sugars
- Avoiding sugar-sweetened beverages
- Avoiding processed meats
- Reducing fat intake/avoiding fatty and fried foods
- Consuming fortified foods
- Eating more
- Reducing caffeine intake
- Avoiding or limiting drug/alcohol/tobacco use
- Taking balanced energy and protein dietary supplements
- Taking iron or iron-folic acid supplements
- Resolving side effects of iron and folic acid and compliance while taking them
- Reducing heavy labor
- Resting more
- Monitoring weight gain
- Achieving appropriate/ideal weight gain
- Following provider's guidance, including compliance with medications, referrals, and follow up
- Participating in a support group

Health care and supplementation practices for infants and young children

We were interested in knowing if package trainings prepared trainees for the following nutrition-specific **health care practices** in these packages:

- delay cord clamping
- practice kangaroo care as appropriate

- seek regular information on children's growth
- give children iron, vitamin A, and micronutrient supplements
- give zinc with oral rehydration solution (ORS) to children with diarrhea
- properly care for infants and children with moderate acute malnutrition (MAM)
- support children with disabilities
- prevent common injuries and accidents.

Our assessment led us to a few important observations:

- The only practice from this list that the NACS package mentions is giving children micronutrient supplements—and that is limited to the training for facility-based workers.
- The ENA/EHA package is the only one that mentions delaying cord clamping to ensure that infants have adequate iron stores.
- The C-IYCF, ENA, and CMAM packages mention kangaroo care for small, low birthweight infants.
- Only the CNCC Caring for the Child's Healthy Growth and Development course and CMAM cover how to care for infants and children with MAM at home.
- Only IMNCI and CMAM mention providing iron supplements to children.
- None of the packages mentions how caregivers can support children with disabilities and prevent common injuries and accidents.

Practices for the social, emotional, and cognitive development of infants and young children

We also determined whether or not the packages trained providers to counsel mothers and caregivers on practices related to social, emotional, and cognitive development, or early childhood development (ECD) of infants and young children. In addition to services mentioned earlier related to maternal mental health, these practices, identified in the assessment tool (annex 1), include placing newborns immediately on the breast after delivery (skin-to-skin contact), communicating with or stimulating children from an early age, helping children learn through play, providing responsive caregiving, parenting without violence, recognizing delays in milestones or missed milestones, and reducing violence in the household. Our assessment found the following:

- Only the CNCC (see box 11) and C-IYCF packages cover early childhood stimulation.
- The ENA/EHA and IMNCI packages discuss only the psychological (attachment) benefits of early skin-to-skin contact and/or breastfeeding.

Box 11. CNCC Caring for the Child's Healthy Growth Course on ECD

The course explains that "children need adults to spend time playing and communicating with them" in order to "learn the skills that will make it possible for them, too, to become competent, happy, and caring adults" and to protect them" from violence and strong anger [directed] at them and around them." The course goes on to say that "adults need to protect young children from physical harm and harsh criticism, in order to help children gain confidence to explore and learn."

- The CNCC Caring for the child's Healthy Growth and Development course teaches providers to promote all ECD practices we looked for except reducing or eliminating violence in the household.
- None of the packages or their trainings addressed violence in the household.

Practices for the nutritional well-being of older children and adolescents

Only the ENA/EHA package includes practices for the nutritional well-being of adolescents who are not pregnant. NACS and the C-IYCF packages include only the unique practices required for pregnant adolescents.

Practices for the nutritional well-being of postpartum women and other adults

Regarding postpartum women and nonpregnant adults, the packages were quite limited. Most focused on the mothers of the target children (C-IYCF, CMAM, and the CNCC Caring for the Newborn at Home course). Only the ENA/EHA (see box 12) and NACS packages mention practices for other adults who are neither pregnant nor have children in the target age group. The ENA/EHA package mentions consuming a variety of foods or a diverse diet, consuming plenty of fruits and vegetables, using iodized salt, family planning, healthy birth spacing, and involving family members in pregnancy, childcare, and household tasks (annex 3). The NACS package also promotes maintaining a healthy weight, doing regular physical activity, avoiding or limiting drug/alcohol/tobacco use, taking iron supplements as prescribed, taking folic acid supplements as prescribed, and care-seeking practices.

Box 12. Adolescent Nutrition Practices Promoted in the ENA/EHA Package

1. "Give [the adolescent girl] at least three meals, each with different types of colorful food and with at least one meal including fish, chicken, eggs, or meat.

2. Give [the adolescent girl] weekly iron–folic acid (IFA) supplementation and de-worming medicine twice a year to prevent anemia or weak blood.

3. [Encourage the adolescent girl to] delay first pregnancy until 20 years of age.

4. [Encourage the adolescent girl to] space pregnancies a minimum of three years to allow the body to rest."

Practices for a healthy environment

Practices for a healthy environment include those related to the use of clean water, proper sanitation and hygiene, and violence reduction. All packages, except for the CMAM and IMNCI packages, cover washing hands with soap (or ash) at critical times. Only the ENA/EHA and NACS packages cover the four priority WASH practices: safely storing and treating household drinking water, washing hands with soap (or ash) at critical times, hygienically handling and safely storing food, and safely disposing of human feces. Only the CNCC course on caring for the child's healthy growth and development and the CMAM package promote separating children from soil and animal feces.

Conclusions

Through this review, we delved into seven packages for the delivery of frontline health and nutrition services. We looked at (1) the health system building blocks addressed; (2) capacity strengthening methodology used; (3) training content on nutrition services to deliver; (4) training content on how to deliver services; and (5) training content on behaviors to promote. To do this we carefully reviewed package guidance and resources, including training materials. We attempted to rate certain aspects of each package by scoring and summing relevant items.

These packages offer a range of strengths in terms of health system building blocks, capacity strengthening, and interventions covered/nutrition challenges addressed. They each have their own objectives and audiences. As a result, readers are encouraged to note content, strengths, and weaknesses, and discouraged from making direct comparisons between packages.

The information we have provided is intended to give managers insight into what each package does and does not offer and the purpose it can serve in their contexts. Managers wishing to address specific aspects of nutrition should clearly define their own goals and then choose the package that fits these goals best. This may require adapting a given package or supplementing with another package to address all program requirements.

WHO Health System Building Blocks Addressed

Most packages address many, if not all, of the health system building blocks—they suggest actions and providing tools to increase the availability of service; improve the performance of the frontline workforce; equip and supply health facilities and communities; collect, report, and use nutrition-related data from existing information systems; ensure adequate financing; and strengthen governance and leadership for nutrition. The C-IYCF and ENA/EHA packages, which are designed more so for the provision of services at the community level and/or outside the existing health system, do less in regard to the building blocks, but particularly related to equipment and supplies, information systems, and financing. While CNCC and iCCM are also intended for implementation at the community level, they cover or address almost all of the building blocks. In general, those packages designed for the delivery of facility-based services (NACS and IMNCI) cover more of the building blocks. Indeed, module 7 of the *NACS User's Guide* is organized according to the building blocks.

Characteristics of Training Materials and Methods

Since a primary focus of these packages is to build the capacity of health service providers, how they suggest doing so and the resources included for delivering a training are important. We found all packages used appropriate methods (appropriate for the audience and defined competencies), and all were high in usability (not requiring a great deal of expertise to pick up the package and roll it out, recognizing that some adaptation to local context will always be needed). Although the abundance of materials, iterations, and addendums to the IMNCI package may make it more difficult to adapt and implement, the package's inclusion of guidance for distance learning and preservice training make IMNCI appealing. The depth of each training varied, with notable differences across packages. For training materials with less depth, an expert trainer would be needed to fill in the missing detail and deliver an effective course.

Services That Providers Are Taught

Which services are delivered—for assessment, analysis, or treatment—depends on the focus of the package as well as the life stage of the client. The C-IYCF and ENA/EHA trainings as well as two of the three CNCC courses (Caring for the Newborn at Home, and Caring for the Child's Healthy Growth

and Development) focus on behavior change communication—through community events, support groups, and home visits. They teach providers to provide few, if any, other services.

The CMAM, IMNCI, and NACS trainings as well as the CNCC course Caring for the Sick Child in the Community prepare providers to assess, analyze, and treat the nutrition challenges of infants and young children (under 2 or 5 years old). Only the NACS and CMAM trainings prepare providers for the delivery of nutrition services to any other populations. The CMAM training also teaches providers to assess the nutritional status and mental health of mothers of young children, while the NACS trainings prepare providers to deliver nutrition services to all adolescents and adults, not only mothers.

Techniques Providers Are Taught

Often overlooked are the skills related to *how* services are delivered—how they are communicated, managed, measured, monitored, supervised, reported, and improved. High-quality nutrition service delivery requires engaging communities; supporting behavior change; reaching people in multiple ways and at multiple contact points; human resource management (task shifting and sharing, remuneration, and incentives, etc.); data management, reporting, and use; and coaching and supervision skills to make it all possible. Responsibility for some of these tasks may fall on the existing system—district health officers, local government monitoring and evaluation (M&E) officers, etc. Some of these skills may also be taught through preservice training or other in-service nutrition-related trainings. However, it cannot be assumed that nutrition service providers are skilled in the range of competencies, beyond technical expertise in nutrition, that are required to successfully delivery nutrition services. Pairing the technical and non-technical competencies is critical.

While it is not surprising that packages focused on facility-based services teach providers less about how to conduct community events, support groups, or home visits, even facility-based providers will need competencies for engaging with communities in order to build demand for services and ensure that new nutrition behaviors are reinforced and supported. Furthermore, given the importance of behavior change to nutrition, it is essential that all frontline service providers are adept in IPC. While most trainings cover such IPC skills, the ENA/EHA training for CHWs, the CMAM training, the NACS training for CHWs, and the IMNCI training cover far fewer than we would suggest.

Finally, while most packages teach providers how to collect data, fewer teach them how to report and use data to improve the quality of services, with the NACS training package being an exception in its emphasis on the formation of facility-based QI teams to identify, study, and address issues related to the quality of services.

Care Practices That Providers Are Taught to Promote

Care practices or behaviors are considered one of three primary determinants of nutritional status—along with the health environment and food security (UNICEF 1998). Using the IPC skills mentioned above, behaviors must be modeled, promoted, negotiated, and reinforced.

Almost all the trainings promoted optimal breastfeeding and complementary feeding practices, although some did less to address breastfeeding challenges.

Responsive caregiving and early learning are increasingly recognized as critical companions to nutrition for optimal early childhood development, which includes social, emotional, and cognitive growth, as well as physical. However, the packages reviewed, along with their training resources, have not yet fully embraced this marriage. Only the CNCC course on caring for the child's healthy growth teaches providers to promote six of the early childhood practices we sought. None of the packages or their trainings addressed reduction or elimination of violence in the household.

Consistent with the findings above, only the C-IYCF, ENA/EHA and NACS trainings prepared providers to promote nutrition behaviors for pregnant women (C-IYCF and ENA) and adolescents (ENA/EHA and

NACS). These include selected practices related to family planning—delaying first pregnancy and birth spacing—as well as dietary practices critical for near or current pregnancies. The NACS training is the only one that tackles nutritional practices relevant to dual burden of under- and overnutrition, teaching providers to encourage physical activity and reduced intake of salt, processed meats, and sugary foods.

Finally, only the ENA/EHA and NACS packages covers the four priority WASH practices: safely storing and treating household drinking water, washing hands with soap (or ash) at critical times, hygienically handling and safely storing food, and safely disposing of human feces.

Recommendations

A number of excellent packages are available. These are our recommendations for those already using one or more of the packages and those preparing to do so:

1. Revise and harmonize country programs to ensure consistency in nutrition services and alignment with current global standards.
2. Consider pairing packages for more comprehensive delivery of nutrition services (coverage of life stages and states as well as a scope of nutrition services).
3. School-aged children, adolescents, adults, and older adults are not as well served by the packages reviewed as are pregnant women, infants, young children, and their mothers. Carefully review the populations served by existing packages and nutrition services, including assessment, analysis, treatment, and counseling on preventive and curative behaviors.

Specifically for donors, multilateral organizations, and nongovernmental organizations, we recommend the following:

1. Expand packages to better serve all ages and stages, better address the double burden of malnutrition (overweight, obesity, and nutrition-related noncommunicable diseases), and better address ECD, WASH, and family planning to delay pregnancy and ensure proper spacing of births for the health and wellbeing of mothers.
2. Review and revise how counseling and other IPC skills are taught and ensure that these skills are taught to, modeled for, practiced with, and supported among all frontline workers.
3. Expand implementation guidance to address all health systems building blocks, as appropriate.
4. Conduct implementation research, comparing on-the-ground implementation of one or more of the packages with what is described in each package. This research might look into how a package is adapted to the country context; the fidelity of the package to global standards and guidelines; its fidelity to national policies, standards, and guidelines (e.g., job descriptions, certification, and supervisory systems); the relationship of the package to other packages being used in the same setting (are they complementary or do they compete?); adequacy of capacity strengthening (e.g., who is trained, when they are trained, and how they are trained); and fidelity of implementation (i.e., delivery of services) to plans.
5. Evaluate the impact of these packages specifically on the quality of nutrition services as well as nutrition outcomes—nutrition behaviors and nutritional status, including nutrition-related noncommunicable diseases.
6. This review focused on packages that fit squarely within the health sector and are designed for training of and implementation by health workers. However, social and behavior change is most likely to occur when behaviors are promoted by many people at many different contact points. Other frontline service providers are well-positioned to reinforce behaviors. For example, extension workers could be engaged to encourage farmers and families to keep animals separate from children's play spaces, to model handwashing practices, and suggest labor-saving technologies that allow women to rest more during pregnancy and/or attend to children's nutritional and developmental needs. Likewise, teachers could teach school children the importance of healthy eating. It would be useful to review training and implementation packages designed for other frontline service providers to explore the extent to which they prepare those providers to deliver nutrition-related services and/or promote nutrition-related behaviors.

Annex 1. Tool for Package Review

A. General Overview of Package

Please record the following for each package:

- Brief description of the package [based on how package describes it and based on what we record below], including:
  - where services take place (e.g., health facility, community, or home)?
  - what are the services (e.g. one-on-one clinical visits, one-on-one counseling, support groups, community events)?
  - stated context in which the package can be used (e.g., development, fragile, emergency, resilience, rural, urban, etc.)?
  - stated factors that can affect feasibility and/or success?
  - suggestions for sustainability cost?
- Who is intended to provide those services (e.g., government officials, project managers, master trainers, district managers, doctors, nurses, volunteers, etc.)?
- At which level are those providers expected to work?
- Target population of the services (e.g., pregnant women, lactating mothers, caregivers of infants and children, newborns, children <2, children <5, people with disabilities, people living with HIV, vulnerable or marginalized, etc.)
- References/Links - where can all of the elements of the package be found?
- Authors/Agencies of the package
- Year package was developed and last updated
- Uptake or reach of the package (number of countries where package has been used)
- Languages in which the package is available

B. Covering the WHO Health System Building Blocks

Please review the contents of the package to determine the extent to which it, as designed and intended, addresses each of the 6 core components (building blocks) of the health system framework used by WHO:

1. Service delivery
2. Workforce
3. Equipment and supplies
4. Information systems
5. Financing
6. Leadership and governance

Item	Yes / No / Somewhat
Service delivery	
Does the package specify a goal related to the number and distribution of health facilities offering specific services per 10,000 population?	
Does the package suggest assessing health facility readiness in any way?	
Does the package include guidance on conducting formative research to assess the barriers to adopting and sustaining optimal behaviors?	
Does the package include guidance on adapting materials to fit the context (e.g., how and how often it should be done, how much time it takes, cost)?	
Does the package include guidance on adapting materials for use by other sectors?	
Does the package include guidance on developing or strengthening mechanisms for collecting and reviewing users' / beneficiaries' feedback on services?	
Does the package include a guide, reference materials, or job aids (e.g., counselling cards, take-home brochures, decision algorithms) for service delivery?	
Does the package include any guidance on measuring, monitoring, and improving the quality of services? *Note: This includes QI/QA approaches that typically entail forming teams of people, meeting regularly to review data, set priorities, measure, and address issues related to quality of services using that data.*	
Does the guidance address referrals and counter-referrals?	
Does the package propose activities to help build demand for services?	
Does the package include guidance on frequency/number of contact points with a beneficiary (e.g., how many times should a woman be visited in her home during pregnancy)?	
Does the package include guidance on the length of each contact point with a beneficiary (e.g., how long should each support group woman be visited in her home during pregnancy)?	
TOTAL (of 12)	
Workforce	
Does the package suggest any particular ratio of functionary/service providers to beneficiaries? *If yes, what ratio is suggested?*	
Does the package suggest conducting any sort of training of service providers and/or program implementers?	

Does the package include criteria for selecting trainees?	
Does the package include a clear definition (job description) of what (responsibilities) those providers will be expected to do, once trained? *If yes, how specific (e.g., 'provide counseling' or 'provide counseling on x, y, and z through home visits')? Include a scale of 1 to 3 with 3 being the most specific, including who, where, and micro-activity. To score a 3, the JD must include at least: a description of the service they are expected to provide, the target population that should receive this service, the frequency, etc.*	
Does the package explain the specific competencies (knowledge, skills, and attributes) that each service provider (e.g., CHWs, nurses) will need in order to perform the job in that particular setting?	
Does the package include any guidance on task-shifting or task sharing?	
Does the training mention or reference any sort of assessment of knowledge and/or skills of service providers or program implementers before and/or after the training? Note: Often the assessment will be mentioned or referenced, but not included with publicly available packages. This is to avoid participants from getting it before the course begins -- you want that assessment to be a true measure of what they know.	
Does the package include guidance for how the learning will be sustained over time - for continuing education/ reinforcement / follow-up (e.g., on-the-job mentoring, follow-up trainings or workshops, etc.)?	
Does the package include guidance for supervision? *If yes, describe briefly.*	
Does the package include guidance on remuneration, recognition, and/or motivation of workers? *Note: This may include, but is not limited to, formalizing or professionalizing training and developing a career ladder or progression for trainees.*	
TOTAL (of 10)	
Equipment and supplies	
Does the package encourage alignment with the national guidance on essential medicines?	
Does the package encourage alignment with the national health supply chain or logistics management (procurement and distribution) system?	
Does the package provide guidance regarding necessary equipment, materials and supplies?	
Does the package include guidance on supply chain management, procurement of necessary equipment, materials and supplies, warehousing?	
TOTAL (of 4)	

Information systems	
Does the package encourage alignment with the national HIS?	
Does the package suggest using or collecting any routine HIS indicators?	
Does the package suggest and/or include guidance on the use of home-based records?	
Does the package include forms for data collection and/or reporting?	
Does the package include any guidance on data management?	
Does the package include any guidance on data quality review?	
Does the package include any guidance on using data for decision-making? *If yes, please describe briefly.* • *Which indicators?* • *How often?* • *How?*	
TOTAL (of 7)	
Financing	
Does the package include some guidance on costing or estimates of cost of implementation?	
Does the package include some guidance on financing implementation (for sustainability and self-reliance)?	
TOTAL (of 2)	
Leadership and governance (including policies, guidelines, standards of care, incentives, fines)	
Does the package include guidance on planning for implementation of program activities and/or delivery of services?	
Is the package based on specific global guidance (according to what is stated in the package documents)? *If yes, which? And does the package seem to be aligned with the global guidance on which it was based?*	
Does the package encourage alignment or harmonization with national health policies? *If yes, which?*	

Does the package include guidance on seeking/advocating for institutionalization or adoption of the package by the government?	
Does the package include guidance on adaptation to country context?	
Does the package include guidance for designing and planning?	
Does the package include guidance on engaging with civil society actors?	
Does the package provide for community or beneficiary input into key governance decisions?	
TOTAL (of 8)	

C. Capacity Strengthening Methods Used

With regard to the training(s) (pre-service or in-service of frontline service providers), please record the following:

Training contents and number of pages:
Type of training (pre-service, in-service, or both):
Training objectives:
Trainee type (cadre):
Trainee location of operation (facility-based, community-based, or both):

Some packages include multiple training manuals for different cadres or objectives. Next, please answer the following questions with regard to each training in the package.

Item	Yes/No/Somewhat
Training plan	
Does the package explain who will train whom at each level?	
Does the package include guidance for how trainers of this course should be trained?	
Does the package include the qualifications for a facilitator or trainer of this training? (e.g., years of education/degree, years of work experience, years of training experience, etc.)	
Does the package specify the trainer/trainee ratio?	
Does the package mention the roles and responsibilities of trainers?	
Training plan	
How long is the proposed training?	

Which modalities are suggested for the training (distance, in-person, on-the-job, combination)?	
Where does the training take place (on site in facility or community or offsite in conference room/center)?	
Is the training designed to take place at one time or in modules over a span of time?	
According to the proposed training plan, over what span of time will facilitators/trainers have contact with participants?	
Does the training use adult learning techniques?	
Is the training competency-based? Does the course seek to improve knowledge AND skills AND attitudes/aptitudes (competence)? Explain.	
Does the training package include materials for participants (e.g., manuals, counselling cards, take-home brochures, decision algorithms)?	
Does the training use the following techniques:	
• Presentations?	
• Case studies?	
• Role play?	
• Individual reflection?	
• Q&A?	
• Discussion?	
• Field visits?	
• Observations?	
• Practice? Supervised practice?	
Does the training package include an assessment of participant knowledge or skill? If yes, pre and/or post?	
Training follow-up	
Does the training include provisions for follow-up post training?	
Does the training include provisions for remote support by trainers to trainees?	
Does the package include guidance for supervision?	

Does the package mention the need to train the supervisors of service providers?	
Does the package include tools for conducting supervisory visits?	
Appropriateness of methods Rank high/medium/low. Explain. High=uses diverse methods suitable for the defined audience Medium=some diversity of methods that are partially appropriate for the audience Low=methods are didactic and/or not appropriate for the audience	
Usability Rank high/medium/low. Explain. High=includes all materials needed and guidance for adaptation, preparation, and assessment Medium=provides most needed training materials, but has gaps in guidance on adaptation, preparation, or assessment Low=provides limited guidance in key areas	
Depth rating Rank high/medium/low. Explain. High=covers nutrition concepts in sufficient detail, with opportunities for practice and reflection Medium=includes some essential detail, but additional depth may be needed Low=more detail is needed for a non-expert facilitator to deliver the training	

D. How to Deliver Services

Often overlooked, are the skills related to "how" services are delivered, communicated, monitored, reported, and improved. For each skill listed, indicate if trainees are taught the skill by reviewing the training resources (trainer's guide, participant manual, handouts, slides) to determine if it is covered.

'How' Skills	**Yes/No/Somewhat**
Interpersonal communication skills	
How to **build confidence**? (e.g., recognize and praise what a "client" is doing well; listen to "client's" concerns; reflect back what the "client" says; avoid using judging words)	
How to create a **respectful** and communicative relationship with clients? (e.g., respect clients' autonomy, keep clients' interests in mind, treat all clients fairly and without discrimination)	
How to use helpful **non-verbal communication**? (e.g., keep your head level with "client", pay attention (eye contact), remove barriers (tables and notes), take time, use appropriate touch, use gestures that show interest)	

How to **greet** the client to establish a comfortable atmosphere?	
How to assure and maintain **confidentiality/privacy**?	
How to ask about / follow-up on previous counselling session / visit?	
How to **ask** the client about his or her situation and current practices using open-ended questions, familiar language, and/or assessment tools?	
How/when to invite and talk with **other family members**?	
How to **listen** to what the client and/or caregiver says and asks, noticing body language, using probing questions, and reflecting back what the client says to make sure it is correctly understood?	
How to **analyze** the client's key problems in order to mutually agree on the most important ones to address?	
How to **tailor / adapt** messages or recommended actions to client's age and situation?	
How to **recommend actions?** (e.g., develop a plan of action; negotiate a **small, doable action**; explain the rationale and benefits; make only one or two suggestions, not commands; provide accurate information; avoid suggesting actions that could harm or exploit clients emotionally, financially, or medically)	
How to confirm comprehension of client/caregiver (e.g., actions to take, foods/ supplements/ medicines to take, when to return)? Ask client/caregiver to repeat what he or she understood from the visit, counselling session, or discussion?	
How to model/demonstrate behaviors/actions promoted? (e.g., breastfeeding, responsive feeding, child engagement)	
How to be aware of the social and political determinants of health?	
TOTAL (of 15)	
Operational skills	
How to involve husband/partner/influencer of client, if and as appropriate?	
How to engage/mobilize community actors or conduct community mobilization events? *If yes, does it explain…* • *How often to conduct such events?* • *How long should each event last?* • *What the focus/content of each event should be?*	
How to mobilize community resources?	
How to counsel clients? *If yes, does it explain…* • *Who should be counselled? Which clients?* • *How often to counsel each client?*	

• *How long should the counselling session be?* • *How to decide on the content/focus of the counselling session?* • *How to encourage participation?*	
How to conduct home visits? *If yes, does it explain:* • *Who should be visited? Which individuals?* • *How often to visit each person?* • *How long should the visit be?* • *How to decide on the content/focus of the visit?* • *How to encourage participation?*	
How to conduct support groups? *If yes, explain:*	
How to use job aids/brochures?	
How to collect/record data?	
How to report data?	
How to use home-based records?	
How to use data for decision-making?	
How to use a QI/QA approach?	
How to train others?	
How to supervise others?	
TOTAL (of 13)	

E. What Services to Deliver

Trainees are also trained to deliver specific services or interventions to assess, analyze, treat,/manage nutritional status for different types of clients: pregnant women, children under 5 years old, children 5 years and older, and adults. In the table below, indicate if trainees are taught to perform each clinical action or intervention by reviewing the training resources (trainer's guide, participant manual, handouts, slides). Counseling topics or behaviors to be promoted or covered in counseling sessions are included in the next section of this tool.

1. Actions provider should take with <u>pregnant women</u>

Clinical Action / Intervention	Yes/No/Somewhat
A. Assess	
Ask about follow-up on previous visits	
Ask about health concerns *Explain. Does the package mention asking specifically about recent illnesses? feeding/eating challenges? weight loss or gain?*	
Weight	
Measure height	
Measure MUAC	
Assess pregnancy weight gain	
Conduct dietary assessment *Explain: How?*	
Assess for anemia *Explain: How?*	
Ask about drug/alcohol/tobacco use *Explain: How?*	
Ask about / assess mental health *Explain: How?*	
TOTAL (of 10)	
B. Analyze	
Classify nutritional status *Explain: How?*	
Classify anemia *Explain: How?*	
Identify and prioritize any difficulties	
TOTAL (of 3)	

C. Act (treat/care)	
Treat malnutrition *Explain:* • *Treat or refer?* • *If treat…* ○ *How?* ○ *Which population(s)?*	
Provide balanced energy and protein dietary supplements, as appropriate	
Provide iron folate / folic acid supplement, as appropriate *Explain: How? Administer, provide, or prescribe?*	
Provide vitamin A supplements, as appropriate *Explain:* • *Administer, provide, or prescribe?* • *How often?*	
Provide daily calcium supplements, as appropriate	
Treat mental health *Explain: How?*	
Counsel client on nutrition-related behaviors *Explain: How? For how long? How many times?*	
Refer clients, as appropriate	
Schedule a follow-up appointment / visit	
TOTAL (of 9)	

2. Actions provider should take with <u>children under 5 years old</u>

Clinical Action / Intervention	**Yes/No/Somewhat**
A. Assess	
Ask about / follow-up on previous visits	
Ask caregivers about their concerns regarding child's health *Explain: How? Asking specifically about recent illnesses? feeding/eating challenges? weight loss or gain?*	
Observe breastfeeding, as appropriate	

Identify any breastfeeding problems, as appropriate *Explain: How? Which problems?*	
Determine age *Explain: How?*	
Weigh *Explain: How? Which ages?*	
Measure height/length *Explain: How? Which ages?*	
Measure head circumference *Explain: During what time period?*	
Conduct appetite test *Explain: How? Which ages?*	
Conduct assessment of diet *Explain: How? Which ages?*	
Assess for anemia *Explain: How? Which ages?*	
Conduct hearing screening *Explain: How? Which ages?*	
Conduct vision screening *Explain: How? Which ages?*	
Assess developmental milestones *Explain: How? Which ages?*	
Ask about / assess mental health *Explain: How? Which ages?*	
TOTAL (of 15)	
B. Analyze	
Classify birth weight	
Analyze growth / weight gain	

Explain: How? Which ages?	
Classify MUAC *Explain: How? Which ages?*	
Classify weight for height *Explain: How? Which ages?*	
Classify anemia *Explain: How? Which ages?*	
Identify and prioritize any difficulties	
TOTAL (of 4)	
C. Act (treat/care)	
Delay cord clamping after delivery, in the third stage of labor	
Facilitate/support skin-to-skin contact immediately after birth/during first hour	
Avoid unnecessary separation of mother and baby	
Facilitate/support initiation of breastfeeding immediately after birth/during first hour	
Limit use of artificial teats or pacifiers (also called dummies or soothers)	
Demonstrate optimal breastfeeding positioning, as appropriate	
Advise and/or treat breastfeeding problems *Explain: Which problems?*	
Treat child with moderate acute malnutrition *Explain:* • *Treat or refer?* • *If treat…* ○ *How?* ○ *Which ages?* ○ *Which populations? HIV-infected children?*	
Treat child with severe acute malnutrition without complications *Explain:* • *Treat or refer?* • *If treat…* ○ *How?* ○ *Which ages?* ○ *Which populations? HIV-infected children?*	

Treat child with severe acute malnutrition with complications *Explain:* • *Treat or refer?* • *If treat…* ○ *How?* ○ *Which ages?* ○ *Which populations? HIV-infected children?*	
Provide iron supplements *Explain:* • *How? Administer, provide, or prescribe?* • *Which ages?* • *Which populations? HIV-infected children?*	
Provide vitamin A supplements *Explain:* • *How? Administer, provide, or prescribe?* • *Which ages?* • *Which populations? HIV-infected children?*	
Provide multiple micronutrient supplements *Explain:* • *How? Administer, provide, or prescribe?* • *What types? Micronutrient Powders (MNPs)?* • *Which ages?* • *Which populations? HIV-infected children?*	
Provide zinc with ORS to children with diarrhea *Explain:* • *How? Administer, provide, or prescribe?* • *Which ages?* • *Which populations? HIV-infected children?*	
Treat child's mental health *Explain:* • *How?* • *Which ages?* • *Which populations?*	
Counsel caregiver(s) on appropriate nutrition-related behaviors *Explain: How? For how long? How many times?*	
Refer child to other services, as appropriate	
Schedule a follow-up appointment/visit	

Follow-up with malnourished children	
TOTAL (of 19)	

3. Actions provider should take with <u>adolescents</u>

Clinical Action/Intervention	**Yes/No/Somewhat**
A. Assess	
Ask about / follow-up on previous visits?	
Ask about health concerns *Explain. Does the package mention asking specifically about recent illnesses? feeding/eating challenges? weight loss or gain?*	
Weight	
Measure height	
Determine age	
Classify nutritional status *Explain: How?*	
Conduct dietary assessment *Explain: How? Among whom?*	
Assess for anemia *Explain: How? Among whom?*	
Ask about drug/alcohol/tobacco use *Explain: How? Among whom?*	
Ask about / assess mental health *Explain: How? Among whom?*	
TOTAL (of 10)	
B. Analyze	
Calculate BMI for age	
Classify anemia	

Identify and prioritize any difficulties	
TOTAL (of 3)	
C. Act (treat/care)	
Treat malnutrition *Explain:* • *Treat or refer?* • *If treat…* ○ *How?* ○ *Which population(s)?*	
Provide iron supplements, as appropriate *Explain:* • *How? Administer, provide, or prescribe?* • *How often?* • *For which population(s)?*	
Provide Vitamin A supplements, as appropriate *Explain:* • *How? Administer, provide, or prescribe?* • *How often?* • *For which population(s)?*	
Treat mental health *Explain: How?*	
Counsel client on nutrition-related behaviors *Explain: How? For how long? How many times?*	
Refer clients, as appropriate	
Schedule a follow-up appointment / visit	
TOTAL (of 7)	

4. Actions provider should take with <u>caregivers of children under 5 years old</u>

Clinical Action / Intervention	**Yes / No / Somewhat**
A. Assess	
Ask about / follow-up on previous visits	

Ask about health concerns *Explain. Does the package mention asking specifically about recent illnesses? feeding/eating challenges? weight loss or gain?*	
Weight	
Measure height	
Measure waist	
Conduct dietary assessment *Explain: How? Among whom?*	
Assess for anemia *Explain: How? Among whom?*	
Ask about drug/alcohol/tobacco use *Explain: How? Among whom?*	
Ask about / assess mental health *Explain:* • *How?* • *Which populations?*	
TOTAL (of 9)	
B. Analyze	
Calculate BMI	
Classify nutritional status *Explain: How?*	
Classify anemia *Explain: How?*	
Identify and prioritize any difficulties	
TOTAL (of 4)	
C. Act (treat/care)	
Treat malnutrition *Explain:* • *Treat or refer?* • *If treat…* ○ *How?*	

○ *Which population(s)?*	
Provide iron folate / folic acid supplements *Explain: Administer, provide, or prescribe?*	
Treat mental health *Explain:* • *How?* • *Which populations? Caregiver or child?*	
Counsel client on nutrition-related behaviors *Explain: How? For how long? How many times?*	
Refer clients, as appropriate	
Schedule a follow-up appointment	
TOTAL (of 6)	

F. Which Behaviors to Promote

Finally, packages also train service providers to model, promote, and/or counsel beneficiaries on specific topics or behaviors for each life stage. In the table below, indicate if trainees are taught to promote (during interpersonal communication such as counseling in the facility, at home, in a support group meeting, or in any other venue at any other time) each behavior by reviewing the training resources (trainer's guide, participant manual, handouts, slides).

1. Topics/behavior to mention, as appropriate, when counseling / meeting with pregnant women and their influencers (e.g., partners/spouses and other family members)

Behavior	**Yes / No / Somewhat**
Consuming a diverse diet / variety of foods	
Consuming plenty of fruits and vegetables? (e.g. at least 400 g per day)	
Consuming <5 g of salt per day	
Using iodized salt	
Increasing potassium intake from food	
Reducing the intake of free sugars	
Avoiding sugar-sweetened beverages	
Avoiding processed meats	
Reducing fat intake / avoiding fatty and fried foods	

Consuming fortified foods	
Eating more during pregnancy	
Reducing caffeine intake during pregnancy	
Monitoring weight gain during pregnancy	
Avoiding or limiting drug/alcohol/tobacco use during pregnancy	
Taking balanced energy and protein dietary supplements during pregnancy, as prescribed	
Taking iron or iron folic-acid supplements during pregnancy, as prescribed	
Resolving side effects of iron and folic acid and compliance while taking them	
Reducing heavy labor during pregnancy	
Resting more during pregnancy	
Involving family members in pregnancy, childcare, and household tasks	
Participating in some community group (e.g., mother support groups, religious groups, etc.	
TOTAL (of 22)	

2. Topics/behavior to mention, as appropriate, when counseling / meeting with <u>children under 5 years old</u>

Behavior	**Yes / No / Somewhat**
A. Breastfeeding practices	
Initiating breastfeeding within first hour	
Feeding infants the colostrum or first milk	
Avoiding using artificial teats or pacifiers (also called dummies or soothers)	
Avoiding prelacteal feeds / exclusively breastfeeding	
Correct positioning and attachment of the newborn during breastfeeding	
Breastfeeding exclusively through 6 months	
Avoiding introduction of food prior to the child turning 6 months	
Breastfeeding on demand/frequency	
Responsive feeding (recognizing and responding to hunger and satiation cues)	

Continue breastfeeding for at least 24 months	
Continuing breastfeeding when mother is separated from her infant / expressing milk and cup feeding	
Providing adequate fluids to non-breastfed children 6-23 months of age	
Breastfeeding of the child during illness	
Breastfeeding of the child after illness	
Breastfeeding of children born preterm, with a low birth weight, or small for gestational age	
Breastfeeding if mother is HIV+	
Breastfeeding in the context of emergencies	
Addressing poor latching	
Managing breastfeeding difficulties *Explain.*	
Managing physical breast problems *Explain. Which? Mastitis, engorgement, cracked nipples?*	
Addressing perceptions of insufficient milk supply	
TOTAL (of 21)	
B. Complementary feeding practices	
Complementary feeding in the context of emergencies	
Feeding responsively and actively	
Introducing complementary feeding at 6 months *Explain: Including children born to HIV+ mothers?*	
Feeding child the right frequency *Explain: For different age groups?*	
Giving child the right consistency of foods *Explain: For different age groups?*	
Giving child the right quantity of food *Explain: For different age groups?*	
Feeding child a variety of foods (e.g., diverse diet)	

Explain: For different age groups?	
Consuming plenty of fruits and vegetables? (e.g. at least 400 g per day)	
Increasing fiber intake (e.g., fruits, vegetables, whole grains, pulses, and nuts)	
Consuming <5 g of salt per day	
Using iodized salt	
Increasing potassium intake from food	
Reducing the intake of free sugars	
Avoiding sugar-sweetened beverages	
Avoiding processed meats	
Reducing fat intake / avoiding fatty and fried foods	
Feeding child fortified complementary foods	
Feeding of the child during illness	
Feeding of the child after illness	
TOTAL (of 20)	
C. Health care and supplementation practices for infants and young children	
Seeking regular information on children's growth	
Importance of delaying cord clamping	
Providing kangaroo care, as appropriate	
Giving children iron supplements, as prescribed	
Giving children Vitamin A supplements, as prescribed	
Giving children micronutrient supplements, as prescribed	
Giving Zinc with ORS to children with diarrhoea, as prescribed	
Caring for infants and children with moderate acute malnutrition (MAM)	
Supporting children with disabilities	
Preventing common injuries and accidents	
TOTAL (of 10)	

D. Early childhood development practices	
Placing the newborn immediately on breast after delivery (skin-to-skin contact)	
Communicating / stimulating child from an early age	
Helping children learn through play	
Caregiving responsively	
Recognizing delays in milestones or missed milestones	
Reducing violence	
Parenting without violence	
TOTAL (of 7)	

3. Topics/behavior to mention, as appropriate, when counseling / meeting with adolescents

Behavior	Yes / No / Somewhat
Consuming a diverse diet / variety of foods	
Consuming plenty of fruits and vegetables? (e.g. at least 400 g per day)	
Consuming <5 g of salt per day	
Using iodized salt	
Increasing potassium intake from food	
Reducing the intake of free sugars	
Avoiding sugar-sweetened beverages	
Avoiding processed meats	
Reducing fat intake / avoiding fatty and fried foods	
Consuming fortified foods	
Maintaining a healthy weight	
Doing regular physical activity for at least 30 minutes a day	
Avoiding or limiting drug/alcohol/tobacco use	
Taking folic acid supplements, as prescribed	
Taking iron supplements, as prescribed	

Resolving side effects of iron and folic acid and compliance while taking them	
For adolescent girls of reproductive age: Maintaining menstrual hygiene	
Postponing first marriage until 18 years of age	
Postponing first pregnancy until 20 years of age	
Family planning	
Healthy spacing of pregnancy	
Participating in some community group (e.g., mother support groups, religious groups, etc.)	
Using skilled antenatal, childbirth and postnatal care	
TOTAL (of 22)	

4. Topics/behaviors to mention, as appropriate, when counseling / meeting with <u>postpartum/lactating women, caregivers of children under 5 years old, and other adults</u>

Behavior	**Yes / No / Somewhat**
Consuming a diverse diet / variety of foods	
Consuming plenty of fruits and vegetables? (e.g. at least 400 g per day)	
Consuming <5 g of salt per day	
Using iodized salt	
Increasing potassium intake from food	
Reducing the intake of free sugars	
Avoiding sugar-sweetened beverages	
Avoiding processed meats	
Reducing fat intake / avoiding fatty and fried foods	
Consuming fortified foods	
Meeting special dietary requirements for lactating women *Explain:* • *Eating sufficient quantities of food for a nutritious diet throughout lactation?* • *Eating appropriate frequencies for a nutritious diet throughout lactation? What frequency?* • *Eating animal source foods?*	

Maintaining a healthy weight	
Doing regular physical activity for at least 30 minutes a day	
Avoiding or limiting drug/alcohol/tobacco use	
Taking iron supplements postpartum, as prescribed	
Taking folic acid supplements, as prescribed	
Resolving side effects of iron and folic acid and compliance while taking them	
Using skilled antenatal, childbirth and postnatal care	
Maintaining menstrual hygiene	
Family planning	
Healthy spacing births	
Not having children after the age of 35	
Waiting 6 months after a miscarriage	
Involving family members in pregnancy, childcare, and household tasks	
Participating in some community group (e.g., mother support groups, religious groups, etc.)	
TOTAL (of 25)	

5. Behaviors to mention, as appropriate, to promote a <u>healthy environment</u>

Behavior	**Yes / No / Somewhat**
Safely storing and treating household drinking water *Describe what trainees are taught to promote (e.g., utilizing chlorine solution and storing water in a closed container with tap).*	
Washing hands with soap at critical times *Describe how training explains to wash hands and when (e.g. after defecation; after cleaning child who has defecated; before preparing food; before feeding child; before eating).*	
Hygienically handling and safely storing food *Explain what is mentioned (e.g., cooking and reheating all hot food until boiling or steaming throughout; not eating food that has been sitting at room temperature without reheating until boiling or steaming; disposing of all food that smells or looks spoiled; storing food in the cleanest and coolest location possible, of the sun; covering all stored food from flies and animals; washing foods to be eaten raw with treated water, and prepare these foods on freshly*	

washed surface with clean utensils; washing cooking and serving containers and utensils before use, with flowing water and soap0.*	
Safely disposing of human feces (including usage of latrines)	
Separating children from soil and animal feces	
TOTAL (of 5)	

Annex 2. Evidence of Effectiveness of Packages Reviewed

C-IYCF: We found only one formal evaluation of the C-IYCF package's effectiveness—a study conducted in Nigeria from 2014 to 2017 (Lamstein et al. 2018). The evaluation found improvements in food consumption during pregnancy, early initiation of breastfeeding and exclusive breastfeeding among children 0–5 months old. The findings also showed that the package imparted what appeared to be a protective effect for infants aged 6–8 months receiving solid, semisolid, or soft food.

ENA/EHA framework: In Nepal, the ENA/EHA framework was implemented alongside the promotion of homestead food production. In one district, researchers "found significant improvements in maternal knowledge as well as in almost all infant and young child feeding practices in intervention compared to control communities (in the subsample 12–23 months of age). In addition, anemia at end line was significantly lower among both children and their mothers, and underweight was lower in women in intervention compared to control." In two other districts, "improvements in the proportion of children receiving ≥ 4 food groups during the previous day also increased markedly, to 69 and 78.3 percent, respectively; other practices also showed large improvements." A case study on a pilot of the ENA/EHA approach in Bangladesh found that that weight-for-age Z-scores in children who received the ENA/EHA counseling improved (0.06 standard deviations higher than children living in the area who were not part of the pilot) (Waid et al. 2019). Targeted behaviors also improved—exclusive breastfeeding rates increased from 30 percent at baseline to 64 percent at endline; feeding children the same or extra food during illness increased from 57 percent at baseline to 80 percent at endline; and the proportion of women reporting that they ate more during pregnancy than before becoming pregnant increased from 18 percent at baseline to 62 percent at endline.

CMAM: CMAM has proven effective in increasing coverage and reducing wasting (weight-for height Z-scores < -2 SD). One study examining care for severely malnourished children in 21 community-based therapeutic care programs across Ethiopia, Malawi, and Sudan found an average coverage of 72.5 percent—substantially higher than comparable center-based programs, which typically do not exceed 10 percent (Collins et al. 2006). A mixed-methods study in India found significant reductions of wasting prevalence (18 percent to 13 percent) in intervention areas relative to comparison areas (16.9 percent to 16 percent). Although not the primary aim of CMAM, the study also found that dietary diversity increased (26.9 percent to 35.0 percent from baseline to endline), as did consumption of iron-rich foods (29.6 percent to 40.1 percent) and intake of vitamin A supplements (73.7 percent to 81.2 percent) (Shah More et al. 2018). There is ample evidence of effectiveness.

NACS: A 2015 systematic literature review found few well-designed studies that examined the effectiveness of nutrition assessment and counseling in resource-limited settings (Tang et al. 2015). From 2015 to 2017, with FANTA's NACS support, Mozambique reported a significant increase in accurate classification of nutritional status (from 77 percent to 98 percent) despite an eightfold increase in the number of patients seen (FANTA 2018a). Also, within the first 6 months of NACS implementation in Mozambique, the percentage of children screened for malnutrition drastically improved, rising to 95 percent at all but one health facility (from 4 percent to 86 percent) (FANTA 2018b).

IMNCI: Evidence on IMNCI in terms of nutrition-related outputs and outcomes is mixed. A multicountry evaluation found that IMNCI can improve health workers' performance and quality of care, reduce under-5 mortality, and improve nutritional status (Arifeen et al. 2009; Bryce et al. 2004; WHO 2019). However, other studies have found less promising results. Two trials in India and Bangladesh showed there to be little or no effect on stunting and little or no effect on wasting (Gera et al. 2016). In India, a cluster-randomized trial found a similar proportion of infants with stunting or wasting at age 12

months in the intervention and control clusters; but children in the intervention cluster were less likely to be underweight than those in the comparison cluster, across all age groups (Jibo et al. 2014) and more likely to be breastfed in the 6th month of life (25 percent vs. 11.6 percent) (Mazumder et al. 2014).

iCCM: One study examined CCM using RUTF across 21 programs and three countries and found an average recovery rate of 79.4 percent of children with SAM (CORE Group, Save the Children, BASICS, and MCHIP 2012). However, no data were provided from baseline or comparison sites that provided standard services. A qualitative study conducted in the Democratic Republic of Congo by USAID's Maternal and Child Survival Program showed that interviewees and focus group respondents in areas where iCCM was implemented were more likely to know the links between children's health, growth, and nutrition, and to understand the benefits of breastfeeding and of feeding their children mainly fruits and vegetables (Kavle et al. 2019).

Annex 3. Supplementary Tables

See attached Microsoft Excel file that will be posted to the USAID AN website and linked here upon COR approval of this document.

References

Arifeen, S. E., D.M. Emdadul Hoque, T. Akter, M. Rahman, M.E. Hoque, K. Begum, E.K. Chowdhury, R. Khan, L.S. Blum, S. Ahmed, M.A. Hossain, A. Siddik, N. Begum, Q. Sadeq-ur Rahman, T.M. Haque, S.M. Billah, M. Islam, R.A. Rumi, E. Law, Z.A. Al-Helal, and R.E. Black. 2009. "Effect of the Integrated Management of Childhood Illness strategy on childhood mortality and nutrition in a rural area in Bangladesh: a cluster randomised trial." *The Lancet*, *374*(9687), 393–403. https://doi.org/10.1016/S0140-6736(09)60828-X.

Bluestone, Julia, Peter Johnson, Judith Fullerton, Catherine Carr, Jessica Alderman, and James BonTempo. 2013. "Effective In-Service Training Design and Delivery: Evidence from an Integrative Literature Review." *Human Resources for Health* 11: 51. https://doi.org/10.1186/1478-4491-11-51.

Bryce, J., C.G. Victora, J.P. Habicht, J.P. Vaughan, and R.E. Black. 2004. "The multi-country evaluation of the integrated management of childhood illness strategy: lessons for the evaluation of public health interventions." *American Journal of Public Health*, *94*(3), 406–415. https://doi.org/10.2105/ajph.94.3.406.

Collins, S., K. Sadler, N. Dent, T. Khara, S. Guerrero, M. Myatt, M. Saboya, and A. Walsh. 2006. "Key issues in the

S82. https://doi.org/10.1177/15648265060273S304.

CORE Group. 2009. *Community-based Integrated Management of Childhood Illness Policy Guidance*. Washington, DC: CORE Group.

CORE Group. 2017. Essential Nutrition Actions and Essential Hygiene Actions Framework. Accessed August 20, 2020:

Guyon A., Quinn V, Nielsen J Stone-Jimenez M. 2015a. *Essential Nutrition Actions and Essential Hygiene Actions Training Guide: Community Workers.* CORE Group: Washington, DC.

Guyon A., Quinn V, Nielsen J Stone-Jimenez M. 2015b. *Essential Nutrition Actions and Essential Hygiene Actions Training Guide: Health Workers and Nutrition Managers.* CORE Group: Washington, DC.

Guyon A., Quinn V, Nielsen J Stone-Jimenez M. 2015c. *Essential Nutrition Actions and Essential Hygiene Actions Reference Materials on Key Practices: Community Workers.* CORE Group: Washington, DC.

Guyon A., Quinn V, Nielsen J Stone-Jimenez M. 2015d. *Essential Nutrition Actions and Essential Hygiene Actions Reference Manual: Health Workers and Nutrition Managers.* CORE Group: Washington, DC.

Rosenbaum J and R Bery, 2017. *Essential WASH Actions to Improve Child Growth.* FHI360: Washington, DC

CORE Group, Save the Children, Basic Support for Institutionalizing Child Survival (BASICS), and Maternal Child Health Integrated Program (MCHIP). 2012. *Community Case Management Essentials: Treating Common Childhood Illnesses in the Community, 2nd Edition. A Guide for Program Managers.* Washington, DC: CORE Group.

Costello, A.M., and S.L. Dalglish on behalf of the Strategic Review Study Team. 2016. *Towards a Grand Convergence for child survival and health: A strategic review of options for the future building on lessons learnt from IMNCI.* Geneva: World Health Organization.

Emergency Nutrition Network (ENN), GOAL, London School of Hygiene and Tropical Medicine (LSHTM), and Save the Children. 2018. *C-MAMI Tool.* Ver. 2. Oxford: ENN.

Food and Nutrition Technical Assistance (FANTA) III Project. 2016. *Nutrition Assessment, Counseling, and Support (NACS): A User's Guide.* Ver. 2. Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA). 2018a. *Hands-On Training and Coaching Boosts Nutrition Screening of Children in Mozambique.* Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA). 2018b. *Strengthening Nutrition in Mozambique: A Report on*

Food and Nutrition Technical Assistance (FANTA) III Project. 2018c. *Training Guide for Community-Based Management of Acute Malnutrition (CMAM).* Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. n.d. *Zambia Nutrition Assessment, Counselling and Support (NACS) Training Materials for Community Volunteers*. Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. n.d. *Zambia Nutrition Assessment, Counselling and Support (NACS) Training Materials for Facility-Based Providers*. Washington, DC: FHI 360/FANTA.

Gera, T., D. Shah, P. Garner, M. Richardson, and H.S. Sachdev. 2016. "Integrated management of childhood illness (IMNCI) strategy for children under five." *The Cochrane database of systematic reviews*, (6), CD010123. https://doi.org/10.1002/14651858.CD010123.pub2.

Jibo, A.M., I. Zubairu, A.I. Sadeeq, U.L. Muhammad, and H.A. Muktar. 2014. "Community-integrated management of childhood illnesses (C-IMNCI) and key household practices in Kano, Northwest Nigeria." *Sub-Saharan African Journal of Medicine.* 1(2), 70–76.

Kavle, J.A., M. Pacqué, S. Dalglish, E. Mbombeshayi, J. Anzolo, J. Mirindi, M. Tosha, O. Safari, L. Gibson, S. Straubinger, and R. Bachunguye. 2019. "Strengthening nutrition services within integrated community case management (iCCM) of childhood illnesses in the Democratic Republic of Congo: Evidence to guide implementation." *Maternal and Child Nutrition*, *15 Suppl 1*(Suppl 1), e12725. https://doi.org/10.1111/mcn.12725.

Lamstein, Sascha, Rafael Perez-Escamilla, Peggy Koniz-Booher, France Begin, Susan Adeyemi, Christine Kaligirwa, Chris Isokpunwu, and Babajide Adebisi. 2018. *The Community Infant and Young Child Feeding Counselling Package in Kaduna State, Nigeria: A Mixed Methods Evaluation. Final Report.* Arlington, VA: Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project.

Mazumder, S., S. Taneja, R. Bahl, P. Mohan, T.A. Strand, H. Sommerfelt, B.R. Kirkwood, N. Goyal, H. Van Den Hombergh, J. Martines, N. Bhandari, and Integrated Management of Neonatal and Childhood Illness Evaluation Study Group. 2014. "Effect of implementation of integrated management of neonatal and childhood illness programme on treatment seeking practices for morbidities in infants: cluster randomised trial." *BMJ (Clinical research ed.)*, *349*, g4988. https://doi.org/10.1136/bmj.g4988.

MEASURE Evaluation. 2018. *Landscape Survey: Understanding the Monitoring of Nutrition, Counseling, Assessment, and Support.* MEASURE Evaluation: Chapel Hill, NC.

Rapid Access Expansion (RAcE) Program. 2017. *iCCM Data Quality Assessment Toolkit.* Geneva: World Health Organization.

Shah More, N., A. Waingankar, S. Ramani, S. Chanani, V. D'Souza, S. Pantvaidya, A. Fernandez, and A. Jayaraman. 2018. "Community-Based Management of Acute Malnutrition to Reduce Wasting in Urban Informal Settlements of Mumbai, India: A Mixed-Methods Evaluation." *Global Health: Science and Practice*, 6(1), 103–127. https://doi.org/10.9745/GHSP-D-17-00182.

Tang, A.M., T. Quick, M. Chung, and C.A. Wanke. 2015. "Nutrition assessment, counseling, and support interventions to improve health-related outcomes in people living with HIV/AIDS: a systematic review of the literature." *J Acquir Immune Defic Syndr*. 68 Suppl 3(0 3):S340–S349. doi:10.1097/QAI.0000000000000521.

United Nations Children's Fund (UNICEF). 1998. *The State of the World's Children, 1998.* New York: UNICEF..

United Nations Children's Fund (UNICEF). 2012. *Community Based Infant and Young Child Feeding.* New York: UNICEF.

United Nations Children's Fund (UNICEF). 2018. *Community-based Mental Health and Psychosocial Support in Humanitarian Settings: Three-tiered support for children and families.* New York: UNICEF.

Waid, J.L., J.N. Nielsen, S. Afroz, D. Lindsey, and S.S. Sinharoy. 2019. "Use of the Essential Nutrition Actions

World Health Organization (WHO). 2011. *Caring for the sick child: Caring for newborns and children in the community*. Geneva: WHO..

World Health Organization. 2013. *Essential Nutrition Actions: Improving maternal, newborn, infant and young child health and nutrition.* Geneva: WHO.

World Health Organization (WHO). 2014a. *Integrated Management of Childhood Illness (IMNCI) Chart Booklet.* Geneva: WHO.

World Health Organization (WHO). 2014b. *Integrated Management of Childhood Illness (IMNCI) Set of Distance Learning Modules.* Geneva: WHO.

World Health Organization (WHO). 2015a. *Maternal, newborn, child and adolescent health:* Global standards for quality health care services for adolescents. Geneva: WHO.

World Health Organization (WHO). 2015b. *Caring for Newborns and Children in the Community: Package of Resources*. Geneva: WHO.

World Health Organization (WHO). 2018c. *Maternal, newborn, child and adolescent health: Standards for improving quality of maternal and newborn care in health facilities.* Geneva: WHO.

World Health Organization (WHO). 2019. *Essential Nutrition Actions: Maintaining Nutrition through the Life-Course*. Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999d. *Integrated Management of Childhood Illness (IMNCI) Planning Guide: Gaining Experience with the IMNCI Strategy in a Country.* Geneva: WHO.

Resources

Service Delivery Package Resources Reviewed

Community Based Infant and Young Child Feeding

United Nations Children's Fund (UNICEF). 2012. *Community Based Infant and Young Child Feeding.* New York: UNICEF.

Essential Nutrition Actions and Essential Hygiene Actions Framework

CORE Group. 2015a. *Essential Nutrition Actions and Essential Hygiene Actions Reference Manual: Health Workers and Nutrition Managers.* Washington, DC: CORE Group.

CORE Group. 2015b. *Essential Nutrition Actions and Essential Hygiene Actions Reference Materials on Key Practices: Community Workers*. Washington, DC: CORE Group.

CORE Group. 2015c. *Essential Nutrition Actions and Essential Hygiene Actions Training Guide: Community Workers*. Washington, DC: CORE Group.

CORE Group. 2015d. *Essential Nutrition Actions and Essential Hygiene Actions Training Guide: Health Workers and Nutrition Managers*. Washington, DC: CORE Group.

CORE Group. 2015e. *Updated Essential Nutrition Actions Operational Framework*. Washington, DC: CORE Group.

CORE Group. 2015f. *What's New - Essential Nutrition Actions and Essential Hygiene Actions.* Washington, DC: CORE Group.

Rosenbaum, Julia, and Renuka Bery. 2017. *Essential WASH Actions: A Training and Reference Pack to Supplement Essential Nutrition Actions.* Washington, DC: FHI 360.

Community-Based Management of Acute Malnutrition / Community Management of at Risk Mothers and Infants Under Six Months of Age

CORE Group, Save the Children, Basic Support for Institutionalizing Child Survival (BASICS), and Maternal Child Health Integrated Program (MCHIP), 2nd Edition 2012. *Community Case Management Essentials: Treating Common Childhood Illnesses in the Community. A Guide for Program Managers.* Washington, DC: CORE Group.

Emergency Nutrition Network (ENN), GOAL, London School of Hygiene and Tropical Medicine (LSHTM), and Save the Children. 2018. *C-MAMI Tool.* Ver. 2. Oxford: ENN.

Food and Nutrition Technical Assistance (FANTA) III Project. 2012. *CMAM Costing Tool.* Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. 2018. *Training Guide for Community-Based Management of Acute Malnutrition (CMAM).* Washington, DC: FHI 360/FANTA.

Integrated Management of Newborn and Childhood Illness

CORE Group. 2009. *Community-based Integrated Management of Childhood Illness Policy Guidance*. Washington, DC: CORE Group.

World Health Organization (WHO). 2001. *Integrated Management of Childhood Illness: Planning, Implementing and Evaluating Pre-Service Training.* Geneva: WHO.

World Health Organization (WHO). 2003. *Health Facility Service: Tool to Evaluate the Quality of Care Delivered to Sick Children Attending Outpatient Facilities.* Geneva: WHO.

World Health Organization (WHO). 2004. *Child Health in the Community - "Community Integrated Management of Childhood Illness": Briefing Package for Facilitators.* Geneva: WHO.

World Health Organization (WHO). 2008. *IMNCI Computerized Adaptation and Training Tool (ICATT).* Geneva: WHO. http://icatt-impactt.org/.

World Health Organization (WHO). 2014a. *Integrated Management of Childhood Illness: Chart Booklet.* Geneva: WHO.

World Health Organization (WHO). 2014b. *Integrated Management of Childhood Illness: Set of Distance Learning Modules.* Geneva: WHO.

World Health Organization (WHO) and Jhpiego. 2005. *Effective Teaching: A Guide for Educating Healthcare Providers.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1997. *Integrated Management of Childhood Illness: In-Service Training: Set of Training Modules, Facilitator's Guides and Course Director's Guide.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1998. *Improving Family and Community Practices: A Component of the Integrated Management of Childhood Illness Strategy.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999a. *Guidelines for Follow-Up after Training in the WHO/UNICEF Course on Integrated Management of Childhood Illness for First-Level Health Workers.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999b. *Improving Child Health. Integrated Management of Childhood Illness: The Integrated Approach.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999c. *Integrated Management of Childhood Illness: Information Package.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999d. *Integrated Management of Childhood Illness: Planning Guide, Gaining Experience with the IMNCI Strategy in a Country.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 1999e. *Maternal, Newborn, Child and Adolescent Health: IMNCI Information Package.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2002. *Integrated Management of Childhood Illness: A Guide to Identifying Necessary Adaptations of Clinical Policies and Guidelines, and to Adapting the Charts and Modules for the WHO/UNICEF Course.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2005. *Model IMCI Handbook: Integrated Management of Childhood Illness.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2006. *Integrated Management of Childhood Illness: Complementary Course on HIV/AIDS*. Geneva: WHO.

Nutrition Assessment, Counseling, and Support

Food and Nutrition Technical Assistance (FANTA) III Project. 2016. *Nutrition Assessment, Counseling, and Support (NACS): A User's Guide.* Ver. 2. Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. 2017a. *Zambia Job Aids for Nutrition Assessment, Counseling, and Support.* Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. 2017b. *Zambia Nutrition Assessment, Counselling and Support (NACS) Training Materials for Community Volunteers*. Washington, DC: FHI 360/FANTA.

Food and Nutrition Technical Assistance (FANTA) III Project. 2017c. *Zambia Nutrition Assessment, Counselling and Support (NACS) Training Materials for Facility-Based Providers*. Washington, DC: FHI 360/FANTA.

Integrated Community Case Management

CORE Group, Save the Children, Basic Support for Institutionalizing Child Survival (BASICS), and Maternal Child Health Integrated Program (MCHIP). 2012. *Community Case Management Essentials: Treating Common Childhood Illnesses in the Community. A Guide for Program Managers.* 2nd Edition. Washington, DC: United States Agency for International Development (USAID)/CORE Group.

Maternal Child Health Integrated Program (MCHIP). 2013a. *Indicator Guide: Monitoring and Evaluating Integrated Community Case Management.* Washington, DC: USAID.

Maternal Child Health Integrated Program (MCHIP). 2013b. *Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries.* Washington, DC: USAID.

Rapid Access Expansion (RAcE) Program. 2017. *iCCM Data Quality Assessment Toolkit.* Geneva: World Health Organization.

United States Agency for International Development (USAID) and Basic Support for Institutionalizing Child Survival (BASICS). n.d. *Toolkit for Community Case Management of Childhood Illnesses: Supervisor's Guide.* Washington, DC: USAID/BASICS.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2012. *WHO/UNICEF Joint Statement, Integrated Community Case Management (iCCM): An Equity-Focused Strategy to Improve Access to Essential Treatment Services for Children.* Geneva: WHO.

Caring for Newborns and Children in the Community

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015a. *Caring for Newborns and Children in the Community: Package of Resources*. Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015b. *A Training Course for Community Health Workers: Caring for the Child's Healthy Growth and Development, Counseling Cards*. Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015c. *A Training Course for Community Health Workers: Caring for the Child's Healthy Growth and Development, Facilitator Notes.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015d. *A Training Course for Community Health Workers: Caring for the Child's Healthy Growth and Development, Participant's Manual.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015e. *A Training Course for Community Health Workers: Caring for the Newborn at Home, Facilitator Notes.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015f. *A Training Course for Community Health Workers: Caring for the Newborn at Home, Participant's Manual.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2015g. *A Training Course for Community Health Workers: Caring for the Newborn at Home, Counseling Cards.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2011a. *A Training Course for Community Health Workers: Caring for the Sick Child in the Community, Participant's Manual.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2011b. *A Training Course for Community Health Workers: Caring for the Sick Child in the Community, Facilitator Notes.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2011c. *A Training Course for Community Health Workers: Caring for the Sick Child in the Community, Photo Book.* Geneva: WHO.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2011d. *A Training Course for Community Health Workers: Caring for the Sick Child in the Community, Chart Booklet.* Geneva: WHO.

World Health Organization (WHO), United Nations Children's Fund (UNICEF), USAID, and Save the Children. 2015a. *Caring for Newborns and Children in the Community: Facilitator Guidelines for Conducting a Planning Workshop.* Geneva: WHO.

World Health Organization (WHO), United Nations Children's Fund (UNICEF), USAID, and Save the Children. 2015b. *Caring for Newborns and Children in the Community: Planning Handbook.* Geneva: WHO.

Resources Used for Tool Development

ACCELERATE. 2019. *List of Select Health Behaviors, Steps, and Behavioral Outcome Indicators*. Washington, DC: United States Agency for International Development (USAID)..

Akombi, Blessing J., Kingsley E. Agho, John J. Hall, Nidhi Wali, Andre M. N. Renzaho, and Dafna Merom. 2017. "Stunting, Wasting and Underweight in Sub-Saharan Africa: A Systematic Review." *International Journal of Environmental Research and Public Health*14. https://doi.org/10.3390/ijerph14080863.

Alive & Thrive. 2012. *Summary of Handwashing Initiative: Why Hand Washing Is Critical to Child Health and Nutrition in Bangladesh – How to Make It a Reality*. Washington, DC: Alive & Thrive.

Arifeen, S. E., D.M. Emdadul Hoque, T. Akter, M. Rahman, M.E. Hoque, K. Begum, E.K. Chowdhury, R. Khan, L.S. Blum, S. Ahmed, M.A. Hossain, A. Siddik, N. Begum, Q. Sadeq-ur Rahman, T.M. Haque, S.M. Billah, M. Islam, R.A. Rumi, E. Law, Z.A. Al-Helal, and R.E. Black. 2009. "Effect of the Integrated Management of Childhood Illness strategy on childhood mortality and nutrition in a rural area in Bangladesh: a cluster randomised trial." *The Lancet, 374*(9687), 393–403. https://doi.org/10.1016/S0140-6736(09)60828-X.

Ashworth, Ann, Roger Shrimpton, and Kazi Jamil. 2008. "Growth Monitoring and Promotion: Review of Evidence of Impact." *Maternal & Child Nutrition* 4: 86–117. https://doi.org/10.1111/j.1740-8709.2007.00125.x.

Bhutta, Zulfiqar A, Tahmeed Ahmed, Robert E. Black, Simon Cousens, Kathryn Dewey, Elsa Giugliani, Batool A Haider, et al. 2008. "What Works? Interventions for Maternal and Child Undernutrition and Survival." *The Lancet* 371: 417–440. https://doi.org/10.1016/S0140-6736(07)61693-6.

Bluestone, Julia, Peter Johnson, Judith Fullerton, Catherine Carr, Jessica Alderman, and James BonTempo. 2013. "Effective In-Service Training Design and Delivery: Evidence from an Integrative Literature Review." *Human Resources for Health* 11: 51. https://doi.org/10.1186/1478-4491-11-51.

Boggs, Dorothy, Kate M. Milner, Jaya Chandna, Maureen Black, Vanessa Cavallera, Tarun Dua, Guenther Fink, et al. 2014. "Rating Early Child Development Outcome Measurement Tools for Routine Health Programme Use." *Archives of Disease in Childhood* 104: S22–33. https://doi.org/10.1136/archdischild-2018-315431.

Bryce, J., C.G. Victora, J.P. Habicht, J.P. Vaughan, and R.E. Black. 2004. "The multi-country evaluation of the integrated management of childhood illness strategy: lessons for the evaluation of public health interventions." *American Journal of Public Health*, *94*(3), 406–415. https://doi.org/10.2105/ajph.94.3.406.

Cameron, Lisa, Manisha Shah More, and Susan Olivia. 2013. "Impact Evaluation of a Large-Scale Rural Sanitation Project in Indonesia," Policy Research Working Paper 6360. Washington, DC: World Bank.

Cavalli-Sforza, Tommaso. 2005. "Effectiveness of Weekly Iron-Folic Acid Supplementation to Prevent and Control Anemia among Women of Reproductive Age in Three Asian Countries: Development of the Master Protocol and Implementation Plan." *Nutrition Reviews* 63: S77–80. https://doi.org/10.1111/j.1753-4887.2005.tb00164.x.

Center on the Developing Child at Harvard University. n.d. "Resilience." Accessed June 27, 2020._.

Center on the Developing Child at Harvard University. 2009. "Maternal Depression Can Undermine the Development of Young Children." Working Paper 8. Cambridge: Harvard University.

Collins, S., K. Sadler, N. Dent, T. Khara, S. Guerrero, M. Myatt, M. Saboya, and A. Walsh. 2006. "Key issues in the

S82. https://doi.org/10.1177/15648265060273S304.

Danaei, Goodarz, Kathryn G. Andrews, Christopher R. Sudfeld, Günther Fink, Dana Charles McCoy, Evan Peet, Ayesha Sania, Mary C. Smith Fawzi, Majid Ezzati, and Wafaie W. Fawzi. 2016. "Risk Factors for Childhood

Stunting in 137 Developing Countries: A Comparative Risk Assessment Analysis at Global, Regional, and Country Levels." *PLOS Medicine* 13. https://doi.org/10.1371/journal.pmed.1002164.

Dangour, Alan D., Louise Watson, Oliver Cumming, Sophie Boisson, Yan Che, Yael Velleman, Sue Cavill, et al. 2013. "Interventions to Improve Water Quality and Supply, Sanitation and Hygiene Practices, and Their Effects on the Nutritional Status of Children." *Cochrane Database of Systematic Reviews* 8. https://doi.org/10.1002/14651858.CD009382.pub2.

Durrant, Joan, and Ron Ensom. 2012. "Physical Punishment of Children: Lessons from 20 Years of Research." *Canadian Medical Association Journal (CMAJ)* 184:1373–77. https://doi.org/10.1503/cmaj.101314.

Edwards, Valerie J., George W. Holden, Vincent J. Felitti, and Robert F. Anda. 2003. "Relationship between Multiple Forms of Childhood Maltreatment and Adult Mental Health in Community Respondents: Results from the Adverse Childhood Experiences Study." *The American Journal of Psychiatry* 160: 1453–60. https://doi.org/10.1176/appi.ajp.160.8.1453.

Elsenheimer, Jim. 1998. "Job Aids in the Technology Age." *Performance Improvement* 37: 32–35. https://doi.org/10.1002/pfi.4140370808.

Esrey, Steven A. 1990. "Food Contamination and Diarrhoea." *World Health*: 19–20.

FANTA. 2018a. *Strengthening Nutrition in Mozambique: A Report on FANTA Activities from 2012 to 2018.* Washington, DC: FHI 360/FANTA.

FANTA. 2018b. *Hands-On Training and Coaching Boosts Nutrition Screening of Children in Mozambique.* Washington, DC: FHI 360/FANTA.

Fink, Günther, Christopher R. Sudfeld, Goodarz Danaei, Majid Ezzati, and Wafaie W. Fawzi. 2014. "Scaling-Up Access to Family Planning May Improve Linear Growth and Child Development in Low and Middle Income Countries." *PLOS ONE* 9. https://doi.org/10.1371/journal.pone.0102391.

Food and Agriculture Organization (FAO). 2018. *Dietary Assessment: A Resource Guide to Method Selection and Application in Low Resource Settings*. Rome: FAO.

Food and Nutrition Technical Assistance (FANTA) III Project. 2018. *Guide to Anthropometry: A Practical Tool for Program Planners, Managers, and Implementers*. Washington, DC: FHI 360/FANTA.

Gera, T., D. Shah, P. Garner, M. Richardson, and H.S. Sachdev. 2016. Integrated management of childhood illness (IMNCI) strategy for children under five. *The Cochrane database of systematic reviews*, (6), CD010123. https://doi.org/10.1002/14651858.CD010123.pub2.

Gyawali, Bishal, Shiva Raj Mishra, Dinesh Neupane, Abhinav Vaidya, Annelli Sandbæk, and Per Kallestrup. 2018. "Diabetes Management Training for Female Community Health Volunteers in Western Nepal: An Implementation Experience." *BMC Public Health* 18: 641. https://doi.org/10.1186/s12889-018-5562-y.

Haider, Batool A., and Zulfiqar A. Bhutta. 2017. "Multiple-Micronutrient Supplementation for Women During Pregnancy." *Cochrane Database Syst Rev* 4.

Imani, Peace, Brian Jakech, Ibrahim Kirunda, Martin K. Mbonye, Sarah Naikoba, and Marcia R. Weaver. 2015. "Effect of Integrated Infectious Disease Training and On-Site Support on the Management of Childhood Illnesses in Uganda: A Cluster Randomized Trial." *BMC Pediatrics* 15. https://doi.org/10.1186/s12887-015-0410-z.

Jhpiego. 2016. *Low Dose, High Frequency: A Learning Approach to Improve Health Workforce Competence, Confidence, and Performance*. Baltimore: Jhpiego Corporation.

Jibo, A.M., I. Zubairu, A.I. Sadeeq, U.L. Muhammad, and H.A. Muktar. 2014. "Community-integrated management of childhood illnesses (C-IMNCI) and key household practices in Kano, Northwest Nigeria." *Sub-Saharan African Journal of Medicine.* 1(2), 70–76.

Kavle, J.A., M. Pacqué, S. Dalglish, E. Mbombeshayi, J. Anzolo, J. Mirindi, M. Tosha, O. Safari, L. Gibson, S. Straubinger, and R. Bachunguye. 2019. "Strengthening nutrition services within integrated community case management (iCCM) of childhood illnesses in the Democratic Republic of Congo: Evidence to guide

Kavle, Justine A., and Megan Landry. 2017. "Addressing Barriers to Maternal Nutrition in Low- and Middle-income Countries: A Review of the Evidence and Programme Implications." *Maternal & Child Nutrition* 14. https://doi.org/10.1111/mcn.12508.

Keats, Emily C., Batool A. Haider, Emily Tam, and Zulfiqar A. Bhutta. 2019. "Multiple-Micronutrient Supplementation for Women during Pregnancy." *Cochrane Database of Systematic Reviews* 3. https://doi.org/10.1002/14651858.CD004905.pub6.

Klemm, R., A.E. Sommerfelt, A. Boyo, C. Barba, P. Kotecha, M. Steffen, and N. Franklin. 2011. *Are We Making Progress on Reducing Anemia in Women? Cross-country Comparison of Anemia Prevalence, Reach, and Use of Antenatal Care and Anemia Reduction Interventions.* Washington, DC: A2Z.

Knebel, Elisa. 2000. *The Use of Manual Job Aids by Health Care Providers: What Do We Know?* Washington, DC: The Quality Assurance Project.

Kulkarni, Praveen, H. R. Nagendra, N. C. Ashok, D. Sunil Kumar, Hugara Siddalingappa, and B. Madhu. 2014. "World Health Organization-Body Mass Index for Age Criteria as a Tool for Prediction of Childhood and Adolescent Morbidity: A Novel Approach in Southern Karnataka, India." *International Journal of Preventive Medicine* 5: 695–702.

Lamstein, Sascha, Rafael Perez-Escamilla, Peggy Koniz-Booher, France Begin, Susan Adeyemi, Christine Kaligirwa, Chris Isokpunwu, and Babajide Adebisi. 2018. *The Community Infant and Young Child Feeding Counselling Package in Kaduna State, Nigeria: A Mixed Methods Evaluation. Final Report.* Arlington, VA: Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project.

The Lancet. 2008. Series: Maternal and Child Undernutrition. Vol. 37, Issue 9608. https://www.thelancet.com/series/maternal-and-child-undernutrition

The Lancet. 2013. Series: Maternal and Child Nutrition. Vol. 382, Issue 9890. https://www.thelancet.com/series/maternal-and-child-nutrition

MAL-ED Network Investigators. 2017. "Childhood Stunting in Relation to the Pre- and Postnatal Environment during the First 2 Years of Life: The MAL-ED Longitudinal Birth Cohort Study." *PLOS Medicine* 14. https://doi.org/10.1371/journal.pmed.1002408.

McCauley, Mary, Barbara Madaj, Sarah A. White, Fiona Dickinson, Sarah Bar-Zev, Mamuda Aminu, Pamela Godia, et al. 2018. "Burden of Physical, Psychological and Social Ill-Health during and after Pregnancy among Women in India, Pakistan, Kenya and Malawi." *BMJ Global Health* 3. https://doi.org/10.1136/bmjgh-2017-000625.

Maternal and Child Survival Program (MCSP). 2018a. *Ghana Early Childhood Development Toolkit.* Washington, DC: MCSP.

Maternal and Child Survival Program (MCSP). 2018b. *Therapeutic Early Stimulation Toolkit: Helping Young Children with Disabilities Meet Their Potential.* Washington, DC: MCSP.

Mazumder, S., S. Taneja, R. Bahl, P. Mohan, T.A. Strand, H. Sommerfelt, B.R. Kirkwood, N. Goyal, H. Van Den Hombergh, J. Martines, N. Bhandari, and Integrated Management of Neonatal and Childhood Illness Evaluation Study Group. 2014. "Effect of implementation of integrated management of neonatal and childhood illness programme on treatment seeking practices for morbidities in infants: cluster randomised trial." *BMJ (Clinical research ed.)*, *349*, g4988. https://doi.org/10.1136/bmj.g4988.

MEASURE Evaluation. 2018. *Landscape Survey: Understanding the Monitoring of Nutrition, Counseling, Assessment, and*

Millenium Villages Project. 2013. *Community Health Workers Program Job Aids*. New York: Columbia University.

Pan American Health Organization (PAHO). 2003. *Guiding Principles for Complementary Feeding of the Breastfed Child.* Washington, DC: PAHO.

Peters, David H., Sameh El-Saharty, Banafsheh Siadat, Katja Janovsky, and Marko Vujicic. 2009. *Improving Health Service Delivery in Developing Countries: From Evidence to Action*. Washington, DC: World Bank.

Quinn, Victoria, and Agnes Guyon. 2015. *Essential Nutrition Actions and Essential Hygiene Actions: Reference Manual: Health Workers and Nutrition Managers*. Washington, DC: CORE Group.

Rossett, Allison, and Jeannette Gautier-Downes. 1991. *A Handbook of Job Aids*. San Francisco: Pfeiffer.

Rowe, AK, SY Rowe, and M Vujicic, et al. 2009. "Review of Strategies to Improve Health Care Provider Performance." In *Improving Health Service Delivery in Developing Countries: From Evidence to Action,* 101–126. Washington, DC: World Bank.

Sarkadi, Anna, Robert Kristiansson, Frank Oberklaid, and Sven Bremberg. 2008. "Fathers' Involvement and Children's Developmental Outcomes: A Systematic Review of Longitudinal Studies." *Acta Paediatrica* 97: 153–58. https://doi.org/10.1111/j.1651-2227.2007.00572.x.

Shah More, N., A. Waingankar, S. Ramani, S. Chanani, V. D'Souza, S. Pantvaidya, A. Fernandez, and A. Jayaraman. 2018. "Community-Based Management of Acute Malnutrition to Reduce Wasting in Urban Informal Settlements of Mumbai, India: A Mixed-Methods Evaluation." *Global Health: Science and Practice*, 6(1), 103–127. https://doi.org/10.9745/GHSP-D-17-00182.

Smith, Emily R., Anuraj H. Shankar, Lee S.-F. Wu, Said Aboud, Seth Adu-Afarwuah, Hasmot Ali, Rina Agustina, et al. 2017. "Modifiers of the Effect of Maternal Multiple Micronutrient Supplementation on Stillbirth, Birth Outcomes, and Infant Mortality: A Meta-Analysis of Individual Patient Data from 17 Randomised Trials in Low-Income and Middle-Income Countries." *The Lancet Global Health* 5. https://doi.org/10.1016/S2214-109X(17)30371-6.

Stevens, Briony, Petra Buettner, Kerrianne Watt, Alan Clough, Julie Brimblecombe, and Jenni Judd. 2015. "The Effect of Balanced Protein Energy Supplementation in Undernourished Pregnant Women and Child Physical Growth in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis." *Maternal & Child Nutrition* 11: 415–32. https://doi.org/10.1111/mcn.12183.

Sweeney, Shaun, and Angus MacBeth. 2016. "The Effects of Paternal Depression on Child and Adolescent Outcomes: A Systematic Review." *Journal of Affective Disorders* 205: 44–59. https://doi.org/10.1016/j.jad.2016.05.073.

Tang, A.M., T. Quick, M. Chung, and C.A. Wanke. 2015. "Nutrition assessment, counseling, and support interventions to improve health-related outcomes in people living with HIV/AIDS: a systematic review of the literature." *J Acquir Immune Defic Syndr*. 68 Suppl 3(0 3):S340–S349. doi:10.1097/QAI.0000000000000521.

Tann, Cally J., Emily L. Webb, Rachel Lassman, Julius Ssekyewa, Margaret Sewegaba, Margaret Musoke, Kathy Burgoine, et al. 2018. "Early Childhood Outcomes After Neonatal Encephalopathy in Uganda: A Cohort Study." *EClinicalMedicine* 6: 26–35. https://doi.org/10.1016/j.eclinm.2018.12.001.

United Nations Children's Fund (UNICEF). 1998. *The State of the World's Children, 1998.* New York: UNICEF.

United Nations Children's Fund (UNICEF). 2018. *Community-based Mental Health and Psychosocial Support in Humanitarian Settings: Three-tiered support for children and families.* New York: UNICEF.

United Nations Children's Fund (UNICEF) and World Health Organization (WHO). 2018. *2018 Progress Report: Reaching Every Newborn National 2020 Milestones*. New York: UNICEF; Geneva: WHO.

United States Agency for International Development (USAID). 2018. *Toward a Hygienic Environment for Infants and Young Children: A Review of the Literature.* Washington, DC: USAID Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) Project.

Victora, Cesar G., Reynaldo Martorell, Sindura Ganapathi, R. Dean Boyd, Dale E. Bauman, and Jack Odle. 2017. "What Global Maternal and Child Nutrition Can Learn from Animal Science." *The Lancet Global Health* 5. https://doi.org/10.1016/S2214-109X(17)30249-8.

Vir, Sheila C., Neelam Singh, Arun K. Nigam, and Ritu Jain. 2008. "Weekly Iron and Folic Acid Supplementation with Counseling Reduces Anemia in Adolescent Girls: A Large-Scale Effectiveness Study in Uttar Pradesh, India." *Food and Nutrition Bulletin* 29. https://doi.org/10.1177/156482650802900304.

Waid, J.L., J.N. Nielsen, S. Afroz, D. Lindsey, and S.S. Sinharoy. 2019. "Use of the Essential Nutrition Actions

World Food Programme (WFP) and Center for Disease Control and Prevention (CDC). 2005. *A Manual: Measuring and Interpreting Malnutrition and Mortality*. Rome: WFP.

World Health Organization (WHO). 2002. "Child abuse and neglect by parents and other caregivers." In *World Report on Violence and Health,* edited by Etienne G. Krug, Linda L. Dahlberg, James A. Mercy, Anthony B. Zwi and Rafael Lozano: 59–86. Geneva: WHO.

World Health Organization (WHO). 2007. *Maternal, newborn, child and adolescent health: Standards for maternal and newborn health—Group 1: General standards of care for healthy pregnancy and childbirth.* Geneva: WHO.

World Health Organization (WHO). 2011. *Caring for the sick child: Caring for newborns and children in the community*.

World Health Organization. 2013. *Essential Nutrition Actions: Improving maternal, newborn, infant and young child health and nutrition.* Geneva: WHO.

World Health Organization (WHO). 2015. *Maternal, newborn, child and adolescent health:* Global standards for quality health care services for adolescents. Geneva: WHO.

World Health Organization (WHO). 2018a. *Implementing Effective Actions for Improving Adolescent Nutrition.* Geneva: WHO.

World Health Organization (WHO). 2018b. *Maternal, newborn, child and adolescent health: Guideline: implementing effective actions for improving adolescent nutrition.* Geneva: WHO.

World Health Organization (WHO). 2018c. *Maternal, newborn, child and adolescent health: Maternal Standards for improving the quality of care for children and young adolescents in health facilities.* Geneva: WHO.

World Health Organization (WHO). 2018d. *Maternal, newborn, child and adolescent health: Standards for improving quality of maternal and newborn care in health facilities.* Geneva: WHO.

World Health Organization (WHO). 2018e. *Quality, equity, dignity: the network to improve quality of care for maternal, newborn and child health – strategic objectives.* Geneva: WHO.

World Health Organization (WHO). 2018f. *Weekly Iron and Folic Acid Supplementation as an Anaemia-Prevention Strategy in Women and Adolescent Girls.* Geneva: WHO.

World Health Organization (WHO). 2019. *Essential Nutrition Actions: Maintaining Nutrition through the Life-Course*. Geneva: WHO.

World Health Organization (WHO). 2020. *Global Strategy on Human Resources for Health: Workforce 2030*. Geneva: WHO.

World Health Organization (WHO). n.d. "Daily Iron and Folic Acid Supplementation during Pregnancy." Geneva: WHO. Accessed June 27, 2020.

World Health Organization (WHO). n.d. *Health Workforce*. Geneva: WHO. Accessed June 27, 2020.

World Health Organization (WHO) and United Nations Children's Fund (UNICEF). 2018. *Protecting, Promoting, and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services.* Geneva: WHO.

World Health Organization (WHO). 2020. *Improving early childhood development.* Geneva: WHO.

World Health Organization (WHO), Enfants du Monde, and Pan American Health Organization. 2017. *Maternal, newborn, child and adolescent health: Working with individuals, families and communities to improve maternal and newborn health: a toolkit for implementation.* Geneva: WHO.

World Health Organization, United Nations Children's Fund, and World Bank Group. *Nurturing care for early childhood development: a framework for helping children survive and thrive to transform health and human potential.* Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO.

Zhang, Xin H., Liu Lisheng, Norm R. C. Campbell, Mark L. Niebylski, Peter Nilsson, and Daniel T. Lackland. 2016. "Implementation of World Health Organization Package of Essential Noncommunicable Disease Interventions (WHO PEN) for Primary Health Care in Low-Resource Settings: A Policy Statement From the World Hypertension League." *The Journal of Clinical Hypertension* 18: 5–6. https://doi.org/10.1111/jch.12749.

USAID ADVANCING NUTRITION

Implemented by:
JSI Research & Training Institute, Inc.
2733 Crystal Drive
4th Floor
Arlington, VA 22202

Phone: 703–528–7474
Email: info@advancingnutrition.org
Web: advancingnutrition.org

USAID Advancing Nutrition is the Agency's flagship multi-sectoral nutrition project, addressing the root causes of malnutrition to save lives and enhance long-term health and development.

This document was produced for the U. S. Agency for International Development. It was prepared under the terms of contract 7200AA18C00070 awarded to JSI Research & Training Institute, Inc. The contents are the responsibility of JSI and do not necessarily reflect the views of USAID or the U.S. Government.