

THE STATUS OF
PROGRAMS AND RESEARCH
TO IMPROVE COMPLEMENTARY FEEDING

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Acronyms and Terms

ADRA	Adventist Development and Relief Agency
AIN-C	Integrated Child Attention – Community Level
AINM-C	Integrated Maternal-Child Attention – Community Level
AIEPI	Spanish acronym for Integrated Management of Childhood Illness
BCC	Behavior Change Communication
CA	Cooperating Agency
C-IMCI	Integrated Management of Childhood Illness – Community Level
CTC	Community-based Therapeutic Care
ENA	Essential Nutrition Actions
GM	Growth Monitoring
GMP	Growth Monitoring and Promotion
IEC	Information, Education, and Communication
IMCI	Integrated Management of Childhood Illness
IYCF	Infant and Young Child Feeding
KPC	Knowledge, Practice, and Coverage
MCH	Maternal Child Health
MtMS	Mother-to-Mother Support
NBC	Negotiated Behavior Change
PD	Positive Deviance
PDI	Positive Deviance Inquiry
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PVO	Private Voluntary Organization
RUTF	Ready to Use Therapeutic Food
TIPs	Trials of Improved Practices

CONTENTS

FOREWORD	III
EXECUTIVE SUMMARY	1
SECTION I – DESCRIPTION OF APPROACHES	4
SECTION II – CURRENT ACTIONS & RESEARCH FOR COMPLEMENTARY FEEDING.....	13
SECTION III – SUGGESTIONS FOR PRIORITY ACTIONS FOR IMPROVING COMPLEMENTARY FEEDING.....	16

FOREWORD

The mission of the AED Center for Nutrition is to use innovative and effective strategies to improve nutrition and food security in vulnerable populations worldwide. Infant and young child feeding is one of the Center's focal areas. During the past 25 years, AED has developed, tested, and refined a systematic, yet flexible methodology to change nutrition-related behaviors at the household and community levels. The approach is comprehensive, encompassing advocacy, stakeholder and community-based formative research, program design, implementation, monitoring, and evaluation. Techniques are grounded in a mix of social marketing, communication, and behavioral theory.

AED's programs are designed to reach at-risk populations at times when nutritional problems have their greatest impact. Children are at highest risk of nutritional deficiency and growth retardation between the ages of 6 and 24 months. Poor feeding practices, inadequate diets, and illness—often the result of exposure to environmental pathogens—contribute to high rates of undernutrition. Failure to address problems at this time can result in death or serious life-long consequences.

Program experience and research studies show that it is possible to improve complementary feeding practices, increase dietary intake, and improve growth and nutritional status. Household research to determine actionable ways to improve diet and feeding practices, good counseling, timely support, and an emphasis on a range of practices contribute to successful efforts. Information from intervention trials, formative research, and program monitoring and evaluation data is increasing our understanding of the opportunities and the challenges of improving complementary feeding diets and practices. The AED Center for Nutrition conducted this review of program and research activities so that the lessons learned can be applied in future efforts to improve complementary feeding. We appreciate Judiann McNulty's thorough review and insight in the preparation of this document.

Ellen Piwoz
Director, AED Center for Nutrition

EXECUTIVE SUMMARY

In the late 1990s WHO initiated a consensus-building process to develop and disseminate consistent, internationally accepted guidelines for complementary feeding. The process included scientific reviews of the evidence and expert consultations. Outcomes of the process included discussion of care as a critical component of complementary feeding, ten guiding principles for complementary feeding, the Global Strategy for Infant and Young Child Feeding, and proposed international indicators.

In addition to technical work at the global level and initiatives to enhance micronutrient content through fortification of a food or food supplement, information from intervention trials, formative research, and program monitoring and evaluation data is increasing our understanding of the opportunities and the challenges of improving complementary feeding diets and practices. Programmatic entry points for improving complementary feeding include growth monitoring and promotion, Positive Deviance/Hearth, the Essential Nutrition Actions, Community-IMCI, and nutrition education through such programs as MCH services, supplementary feeding programs, credit with education, and community development, including women's groups. The results and lessons learned from these programs need to be compiled and summarized so they can be applied in future efforts to improve complementary feeding.

This document provides an overview of the approaches currently used to promote appropriate complementary feeding across many sectors as well as a summary of some of the related research underway. In addition, the paper presents the opinions of key individuals as to the perceptions of the three priority actions needed in the coming five years to move the complementary feeding part of the IYCF agenda forward. Information to describe the approaches was obtained from documents, guides and manuals produced by various entities and listed in the reference section at the end of the document, or from web pages. To assess the status of implementation and to learn about program experiences, contact was made with donors, multilaterals, bi-laterals, PVOs, cooperating agencies (CAs), and on-going USAID-funded projects (see list in the appendix). Researchers at three institutions were interviewed about their projects. Everyone contacted, except CAs, was asked his or her thoughts on priorities for future action.

Priorities for action to advance complementary feeding in the next five years fell into several categories: policy and funding, research needs, and implementation. Recommendations for research were either for applied research to improve aspects of implementation of the Guiding Principles, or evaluation research to validate approaches and document results to share with donors. **The most often repeated priority under policy was for additional funding and the need to convince policy makers of the importance of investing in infant and young child feeding (IYCF).** Others felt there is a need for some internal advocacy within the nutrition community to broaden thinking beyond micronutrients to a greater understanding of IYCF including complementary feeding, moderate malnutrition, and the association with childhood morbidity. The priorities for implementation actions varied considerably, but there is **decided interest in moving beyond models and pilots to scaling-up.** Several individuals repeated the idea that we have enough effective approaches; that the focus should now be on scaling up.

The following chart summarizes the research and activities currently underway to promote Infant and Young Child Feeding:

Institution	Current Activities and Research Related to Complementary Feeding
World Bank	<ul style="list-style-type: none"> - Supporting scale-up of AIN-C in Honduras and El Salvador and of AINM-C in Guatemala, including strengthening supervisions system in Honduras - Nutrition enhancement program in Madagascar and Senegal for community-based growth monitoring and behavior change communication (BCC) - Uganda – growth monitoring and promotion (GMP) and BCC - Supporting Eritrea’s Early Childhood Development project to integrate nutrition counseling - Concentrating on IYCF in all nutrition programs, with some support to encouraging micronutrient programs
Asian Development Bank	<ul style="list-style-type: none"> - Supporting a regional program to make available fortified complementary foods in South and SE Asia. Will include a social marketing component. - Continuing support of food fortification (salt and flour)
UNICEF	<ul style="list-style-type: none"> - Integrating IYCF (complementary feeding and breastfeeding together) into child survival package to garner more support - Adding additional staff at HQ to focus on complementary feeding
WHO	<ul style="list-style-type: none"> - Have finalized the IYCF in-service curriculum, shortened to 5 days; currently rolling it out in Tanzania - Published Guiding Principles for Feeding the Non-breastfed Child
FaNTA	<ul style="list-style-type: none"> - Major efforts focus on strengthening indicators including work with IFPRI to validate indicators including a composite indicator for dietary diversity as a proxy for diet adequacy - Assisted MACRO to update the 24-hour recall on the DHS, and will change Knowledge, Practice, and Coverage (KPC) survey - Supporting tools and M&E development for community-based therapeutic care (CTC) - Providing technical assistance to Title II projects in Central America to strengthen IYCF, through national-level working groups to define standards for implementation and through training in behavior change, improving counseling, and qualitative research
SARA Project	<ul style="list-style-type: none"> - Research in Mozambique to assess the feasibility of using local foods to feed the non-breastfed children of HIV+ mothers, includes trials of improved practices (TIPs) - As part of a CDC-funded clinical trial on anti-retrovirals and breastfeeding, will test the feasibility of using locally-produced “plumpy nut” as a breastfeeding substitute
LINKAGES	<ul style="list-style-type: none"> - Introduction of Essential Nutrition Actions (ENA) in various districts in Madagascar and Ethiopia with extensive evaluation. Ethiopia included introduction of ENA into pre-service training. - In Ghana, added message on timeliness of complementary feeding to breastfeeding efforts - Bolivia program promoted improved density of foods and timely feeding
BASICS	<ul style="list-style-type: none"> - Continued support to Senegal to institutionalize ENA - New program in E. Timor to introduce ENA - As part of BASICS initiative to strengthen IMCI in several countries, are strengthening the nutrition counseling and the feeding assessment - Wherever BASICS is working with IMCI, strengthening the feeding of the sick child component
URC	<ul style="list-style-type: none"> - Adaptation of AIN-C into AIEPI-AIN-C for Guatemala with pilot testing - Rolling out AINM-C in priority municipalities with MOH

	<ul style="list-style-type: none"> - In Tanzania and Zimbabwe, improving counseling skills and developing materials to address complementary feeding education for all families within context of a PEPFAR project - In Niger, training pediatric services to treat severe malnutrition and do community follow-up as part of a Quality Assurance project
PVOs	<ul style="list-style-type: none"> - 33 PVOs have Child Survival Health Grants to address complementary feeding within current child survival projects - PVOs are also promoting complementary feeding through Title II projects, emergency projects and other MCH projects which are not funded by USAID, and are collaborating with, or implementing pilot projects for CAs - Applying ENA, PD/Hearth, CTC, GMP and variations, as well as more traditional women's groups and quality application of IMCI. - Four PVOs involved in testing "sprinkles," the home-applied micronutrient supplement
Freedom from Hunger	<ul style="list-style-type: none"> - Creating Centers of Excellence in India to provide technical assistance and materials to local service providers including government, self-help groups and NGOs in order to facilitate dissemination of effective approaches, tools, and materials.
IFPRI	<ul style="list-style-type: none"> - In Haiti, evaluating the effectiveness of targeting all children under two vs. targeting families of children identified as malnourished, includes design of intervention to improve current complementary feeding practices as well as testing of "sprinkles" - Working with FANTA to validate indicators for IYCF, particularly dietary diversity as a measure of dietary adequacy. - Bio-fortification is a long-term project to produce crops with a higher nutrient content
UC-Davis Kay Dewey	<ul style="list-style-type: none"> - Parallel studies in the U.S and Peru on early lactation success - In Ghana, comparison of home fortification methods: sprinkles, crushable table, and a ready to use therapeutic food (RUTF) called Nutri-butter - In Mexico, looking at the positive effect of delayed cord clamping on infant iron status up to six months, which may deter the belief that infants need iron-rich foods before 6 months
JHSPH L. Caulfield	<ul style="list-style-type: none"> - From the Peru study, developing a description of the process for designing complementary interventions including a sub-set of indicators to evaluate the "fidelity" of the intervention - In India, developing an evaluation model which uses a cohort approach instead of control
Instituto de Investigacion Nutricional - Peru	<ul style="list-style-type: none"> - A sensory and microbial evaluation of meat-flour meals - Determination of the role of the native potato in diets of Peruvian children under 3 - Infant's and parent's acceptance of different meat and meat-fortified food sources as a prelude to preventing iron deficiency in children - Use of malt to reduce viscosity in cereal-based weaning foods thus increasing consumption
World Food Programme	<ul style="list-style-type: none"> - Currently working with the government of Guatemala and a private sector partner to develop and distribute a powdered, cereal-based complementary food for mass distribution to all at-risk children in the country

SECTION I – DESCRIPTION OF APPROACHES

It became apparent early on in the phone interviews that there is not a single, universal definition of the term “approach” among those involved in either implementing, funding, or conducting research around complementary feeding. Therefore, there is a rather lengthy list of activities or interventions used to promote improved complementary feeding practices, many of which can actually be components of another, and most of which create synergy when used together. Some are refinements of others or adaptations of a standard approach for a specific setting. In this section, we describe first the interventions, then, three approaches to formative research which are useful in planning effective interventions for behavior change. The chart at the end of the section shows commonalities among the approaches, the setting in which they are useful, and a summary of scaling-up.

Essential Nutrition Actions

There is general agreement among those interviewed who are familiar with the Essential Nutrition Actions (ENA) that it is a framework rather than an approach. The ENA is not only comprised of an integrated package of scientifically proven actions encompassing infant and young child feeding, women’s nutrition and micronutrients, but also the principle of using every available contact within and outside the health service to reach women and their families to promote these actions. When the ENA framework is optimally applied, specific nutrition guidance is provided using effective behavior change and counseling techniques. Ideally, the two concepts which comprise ENA become a routine part of pre- and in-service training of health care workers, community volunteers, and others who are in a position to provide nutrition education.

ENA is more familiar to staff of PVOs and USAID-funded projects than to staff of other CAs, those implementing bi-laterally funded projects in specific countries, or donors other than USAID. BASICS and LINKAGES have promoted the ENA framework in various settings, and several PVOs are now applying it in the design of their nutrition interventions. The ENA framework allows for or actually encourages the use of any or several of the effective nutrition education approaches. It could be easily introduced at the national level, the major inputs being advocacy with policy makers and training--both of existing staff and through integration into pre-service training of health care workers and others--plus production of materials for education and counseling. In many countries, there are good existing educational materials which could be used at various contact points, thus, reducing cost of scaling up.

Integrated Management of Childhood Illness

The basic algorithm calls for weighing the child as one of the first steps in the process and then providing appropriate nutrition counseling to the caregiver, whether that be for feeding the sick child or improving general feeding practices. Although there has been considerable concern about shifting the emphasis of IMCI to include well children, including a suggested name change, in reality, IMCI is almost exclusively applied to children who present at clinics for treatment of illness. As such, it presents a good opportunity to stress appropriate feeding of the sick child.

The BASICS assessment of the status of IMCI implementation indicates that the nutrition part, particularly the counseling, is the weakest element of implementation. The WHO training package is being strengthened and BASICS is addressing the issue (see chart above).

The community module of IMCI, commonly known as C-IMCI or IMCI-c, proposes both community-based growth monitoring and education of mothers in appropriate and timely complementary feeding. In C-IMCI, the focus tends to be on feeding the well child although most adaptations include information of feeding the sick child. Message content varies greatly depending on the national or regional adaptation. Virtually all of these adaptations were made before the publication of the *Guiding Principles for Feeding the Breastfed Child*, and certainly before the recent publication of the *Guiding Principles for Feeding the Non-Breastfed Child*.

Growth Monitoring and Promotion and Variations

Of all the interventions being used for improving complementary feeding, growth monitoring and promotion remains the most prevalent. Growth monitoring and promotion (GMP) is based on either weight for age, or expected weight gain for age and involves periodically weighing children under five or under two. Weighing takes place either in a health facility, now most often in the context of IMCI, or at the community level. Ideally, GMP would be a contact point for promoting improved complementary feeding practices.

Lessons learned: Both the caregiver's understanding of the expected growth pattern and effective counseling with follow-up are critical to the success of GMP. The lesson learned since the inception of Child Survival two decades ago is that GMP conducted at crowded health facilities with harried staff rarely had any impact. When they were given neither feedback nor counseling, families quickly lost interest in attending. Another barrier to participation has been the cost in time and money incurred by families in going to the health facility. For these reasons, GMP is now widely conducted at the community level on a monthly basis, either by mobile health staff, or more commonly by trained community volunteers. In all instances, good training and supervision, particularly in the counseling component, are vital.

Results with large-scale application of GMP were assessed by Save the Children/UK and reported in the document *Thin on the Ground*. While not opposed to the concept of GM, they pointed out that, at scale, the programs assessed were having no impact due to the lack of an effective education component. A collaborative group has been formed to further study GMP at scale and recommend how to improve the approach at scale.

During the past decade, variants of community-based GMP with effective counseling tools useable by community volunteers with low levels of literacy have been developed, piloted, and scaled up. The most well-known of these are in Central America, known by the acronyms *AIN-C* or *AINM-C* or *AIEPI-AINM-C*. BASICS piloted and later evaluated *AIN-C* in Honduras. This approach was replicated widely throughout the country by PVOs with USAID child survival funding. PVO application of the approach was evaluated by the CORE Group in 2002 in order to derive lessons learned and document processes. Adaptations have been implemented by the government and NGOs in the neighboring countries. Honduras, El Salvador and Guatemala are receiving World Bank funding for further scale-up.

Lessons learned: The success of these variants of GMP seems to be due to well-designed counseling materials and the selection, training, and supervision of volunteers. A key element for success is individual counseling rather than group education. In Guatemala, the *AINM-C* protocol is for mothers to have individual appointments with the community health worker (CHW) for bringing children for monthly weighing or for the CHW to do the weighing during regularly scheduled monthly home visits. Either way allows for unhurried individual counseling. The CORE assessment of *AIN-C* work in Honduras found that each CHW needed very frequent supervision during the initial months of implementation following the training and that new volunteers were more successful at adopting the approach than those with experience in traditional GMP and giving group education.

Additional pilot testing and adaptation may be necessary for replication in countries with lower levels of literacy among the potential volunteers. Scaling-up involves strengthening quality of supervision and overcoming barriers to initial frequent supervision, such as lack of transportation, supervisor work loads, etc.

Evaluations of the introduction of *AIN-C* in Honduras showed that this approach with the counseling was very effective in changing behaviors. Unfortunately, the final report from BASICS is not yet published; however, the final evaluations from Mercy Corps, CRS, and ARC are available from the Child Survival Technical Support (CSTS) Project. The evaluations showed dramatic changes in complementary feeding practices (using standardized indicators and KPC tool) when the approach was applied on a scale of 300- 500 communities. The report of the pilot of *AINM-C* shows similarly positive results in a population about that size.

Community IMCI (C-IMCI) contains a growth monitoring component. However, in this approach, it is not the focal point of community education as it is in the Central American variants of GMP. *C-IMCI* intends to educate and mobilize families around all the major threats to child health, most often using mothers' groups or home visits to achieve that end. The community health volunteers do not necessarily have the tools or training for effective nutrition counseling. In Guatemala, the two approaches (*AINM-C* and *C-IMCI*) have, in essence, been combined and also maternal health messages added.

Lesson learned: While both *C-IMCI* and *AIN-C* or *AINM-C* come with neatly packaged generic education or counseling messages for IYCF, the impact will be much greater if some research is done on sub-populations to define the actual feeding issues. The community health workers in that region can then be trained to focus on those issues rather than all the generic messages.

GMP and all its variations, including *C-IMCI*, have been, and continue to be, implemented by both public and private or NGO health delivery systems, through PVO Child Survival programs, and in the context of food distribution (Food for Peace, World Food Programme, and USDA) programs. GMP is an essential component of the PD/Hearth program described below. Many countries already have large scale growth monitoring programs; the challenge lies in sustaining them and improving their quality.

Positive Deviance/Hearth

Positive Deviance/Hearth (PD/Hearth) was developed in Haiti and later refined by Save the Children in Vietnam in the early 90s. BASICS I validated results in four countries and supported replication by other PVOs and in government programs in West Africa. Extensive evaluation research has been conducted in Vietnam and published. The approach has now spread, on a pilot or limited basis, to 34 countries. The most intensive effort at scaling up is currently underway by the government of Indonesia and collaborating NGOs and PVOs. As with all approaches, scaling up requires maintaining quality training and supervision.

PD/ Hearth has 3 goals: 1) rehabilitate malnourished children (weight for age), 2) enable families to sustain well-nourished status at home afterwards, and 3) prevent future malnutrition in the community. A key component of PD/Hearth is using a formative research participatory approach known as Positive Deviance Inquiry (PDI) in each community to allow staff and volunteers to learn the good feeding, caring and health behaviors from poor families of well-nourished children which can be practiced by anyone in the community. These “positive deviant behaviors” can be transmitted to and internalized by participants in the Hearth component of the program. After children are identified and receive de-worming and micronutrient supplements, they come with their caregiver to a daily session for 10-12 consecutive days. During these sessions the caregivers participate in preparing and feeding a nutrient-dense meal. They receive support and counseling from the volunteers to learn the PD behaviors as well as responsive feeding, hygiene, and other health topics. Caregivers must contribute food or materials daily as another learning tool. After the 10-12 day session, they receive frequent follow-up visits at home for the next two weeks. Children who do not gain adequate weight repeat the session or are referred to medical care to assess for underlying illness. PD/Hearth is self-limiting in that need for the programs ends as soon as all malnourished children in the community are recuperated. It must be linked with health facilities, growth monitoring and continued nutrition education, which will continue. The CORE Group has published a comprehensive guide and a recent addendum outlining the fourteen essential elements of the methodology. Steps are underway to promote universally-used indicators. Currently, they vary by country.

Lessons learned: Because it is labor-intensive, PD/Hearth is most appropriate for cohesive communities where there are more than 30% of children under two or three years of age with moderate malnutrition. Where PD/Hearth has “failed,” it is due either to attempted implementation in an inappropriate setting, or to taking short-cuts with the methodology.

Community-based Therapeutic Care

Community-based Therapeutic Care (CTC) is a recently developed approach to treating severe, uncomplicated malnutrition (wasting) at home, rather than admitting the child to in-patient Therapeutic Feeding Centers. The latter are known to be costly and to have high rates of recidivism. CTC not only greatly reduces the cost and expands coverage, but also shows higher rates of recovery and more sustained recovery. There is evidence, not yet well documented, that indicates CTC brings about behavior change on the part of the caregiver and family. CTC has been used primarily by emergency-relief NGOs in emergency settings such as Darfur and Niger. Pilots are underway in Ethiopia and Malawi to adapt the approach to non-emergency settings. A limiting factor is that CTC

relies on a ready-to-use-therapeutic food (Plumpy Nut) which must be imported from France. Some efforts are underway to promote local manufacture of RUTF, but the presence of aflatoxin in locally-grown peanuts is a concern.

The first step in CTC is to screen malnourished children to identify the severe cases and then to conduct medical exams to assess complications. Children with medical complications are admitted to a stabilization center. Children without complications can be enrolled in CTC. Their caregiver is given a two-week supply of RUTF with instructions of how much to feed each day. Ideally, the family will receive home visits during the two weeks from a health worker. At the end of the two weeks, the caregiver returns to the health facility where the child is assessed again, and another two-week supply of RUTF is dispensed. At that visit, the caregiver may receive nutrition and health education or counseling or that may happen during home visits. Children leave the program once they have reached an acceptable weight for height.

CTC has worked best with internally displaced persons or in refugee camps where there is access to medical care and all participants are close together allowing for home visits and follow-up. There have also been successful experiences in non-camp settings. More evaluation research is needed to document sustained recovery rates and reported behavior changes before the approach is promoted for development settings.

Women's Groups

A very traditional approach for promoting improved complementary feeding practices is the use of women's groups. These groups are most often convened at the community center, but sometimes at the health facility. Their success in changing behaviors is very dependent on the facilitation skills of the volunteer or health worker organizing the group. They range from project-driven to almost-empowerment of women leaders, from only IEC presentation of "messages" to actual reflection/discussion of underlying causes and realistic negotiation for behavior change, and from "peer" groups to whoever shows up on a particular day. As with GMP, some variants have emerged which are more effective.

One variant is linking nutrition education to groups which are coming together for a more motivating purpose. The best example of this is Freedom from Hunger's *Credit with Education* Approach. Women who are involved in micro-lending or savings groups must participate in an educational session on a regular basis. With LINKAGES support, Freedom from Hunger developed some adaptable educational modules on breastfeeding and complementary feeding topics, which can be facilitated by persons (credit promoters) who have no health or nutrition background. The key to the success of this approach may be the explicit use of adult learning principles in the modules.

Another variation on the women's group approach is an adaptation of the *WARMI methodology* originally created in Bolivia around maternal health issues. This approach empowers women to examine issues among themselves, discuss them with spouses and community leaders, and take group action. In peri-urban Peru, group members determined that the children of working mothers were most apt to be malnourished (when left with siblings as caretakers) and established an affordable day care center where young children could be adequately fed and cared for. (ADRA)

The women's group approach is now often complemented by the inclusion or separate **targeting of other decision-makers in families**, such as the children's father or grandmother. This approach acknowledges that women need family support in trying or succeeding with new behaviors, or that women, particularly young mothers, cannot in their culture make even simple decisions to change a practice, use family resources, or seek outside care or education.

Mother-to-mother support groups are most often identified with breastfeeding, however; most also promote timely and appropriate complementary feeding. As the group leaders, breastfeeding counselors often receive additional training on complementary feeding topics. The peer support, which is so effective in helping mother breastfeed successfully, is also very helpful to caregivers who confront feeding issues and lack familiar support for appropriate feeding. (CARE Nicaragua and Peru.)

Lessons learned: Scaling-up any of the women's group approaches requires either an existing network of community health workers or volunteers, or creating such a widespread network. Due to work loads, often disperse catchment areas, and lack of transportation, it is rare that facility-based health workers create and maintain effective women's groups. However, where a community system is in place (Indonesia's *posyandus*, India's *anganwadi* workers, or the plethora of local NGOs in South Asia), scale-up might be possible.

Information Dissemination

Information dissemination (IEC) is a cross-cutting element in most of the approaches described above. While clearly not very effective in changing behavior by itself, information dissemination is commonly used to spread complementary messages. Health facilities in many countries have posters and small hand-out *print or pictorial materials*. NGOs sometimes produce print materials, including those researched by the CHANGE project known as "mother reminder materials."

Mass media has often been used, particularly by governments, to promote breastfeeding; however, not one current instance of its use to promote complementary feeding was found during preparation of this paper. It may be more widely used when *social marketing* of micronutrient products or special weaning foods begins on a larger scale.

Direct Distribution of Micronutrients

In many countries, provision of micronutrient supplements (Vitamin A, Iron) has been fully integrated into health service delivery with technical assistance focused on improving logistics and monitoring. Where the government is not assuming this responsibility and in emergency relief programs, PVOs and NGOs are still engaged in direct distribution. In addition, there are a number of pilot programs testing the efficacy of a multi-micronutrient supplement that can be added at home to the child's food. The most common of these is known as "sprinkles." The trials are showing that mother acceptance is good and that children are growing better than control groups (see research section below). Long-term success of this type of product will lie with an effective, reliable distribution and/or marketing system. There are many lessons to be learned from disappointing government logistics for other distribution (ORS, vaccines) and from limited success of social marketing of products such as insecticide-treated materials to prevent malaria. These lessons learned would also apply to distribution of special weaning foods.

Counseling and Negotiated Behavior Change

Counseling and negotiated behavior change (NBC) are actually cross-cutting components of the other approaches. Counseling, which infers one-on-one contact, occurs with IMCI, GMP, home visits, CTC, etc. It is integral to *AIN-C*. Health personnel with good counseling skills can make the most of all contacts with caregivers and their children. Negotiated behavior change is most often done during counseling but has also been successful when working in group settings, such as PD/Hearth. With negotiated behavior change, the mother or caregiver is given choices of small doable actions to try on her own. She agrees to try the action for a determined amount of time. At the next contact, the health worker or volunteer discusses her efforts, including barriers or benefits encountered. Together, the caregiver and health worker come up with solutions to barriers, and the caregiver may re-try the action or try a different one which will have the same or a similar result.

Lessons learned: Keys to the success of counseling, and particularly NBC, are the skills of the counselor and adequate and on-going follow-up with the caregiver. The latter is most effective if it can be done at the home. As previously mentioned, effective counseling requires good training and frequent supervision until skills are internalized.

While NBC very often has been shown to result in significant behavior change, there are limitations to scaling-up simply due to the sheer numbers of caregivers needing counseling compared to the number of health personnel available in developing countries to either directly provide the counseling or to train and adequately supervise community volunteers to do it well. While it has been done very successfully during pilot projects and NGO projects, there is little or no documentation of how well counseling continues after these projects, with their ability to provide intensive supervision, end. Another challenge is that counseling or NBC has little potential in areas with such high food insecurity that there is simply no appropriate food available.

Formative Research Methods for Complementary Feeding

The following formative research methods are used to tailor messages to the local situation and to identify determinants, which are the factors which either positively or negatively influence someone to adopt a new behavior. Unfortunately, outside of pilot projects, they are often neglected in favor of generic messages.

Trials of Improved Practices (TIPs) is considered a consultative research approach, in other words, caregivers similar to those who will be targeted by the nutrition education strategy are “consulted” about which potential behavior changes are feasible for them. First, after a current feeding problem is identified through observations, home visits, and focus groups or even quantitative surveys, qualitative methods such as observation and key informants are used to come up with a list of potentially feasible behaviors to address the problem. These are then presented through counseling to a convenience sample of caregivers with the feeding problem. They are asked to agree to try one or more specific behaviors for one or two weeks. The researcher/counselor notes which behaviors they will try and other observations, such as who else was present when they talked to the caregiver. The researcher/counselor returns at the end of the time period and discusses the experience with the caregiver, noting not only which behavior was more accepted but also any factors which helped with adoption of the practice, such as support from other family members who

heard the initial dialogue. Impediments to adoption are also noted. After interviewing all who tried the behavior, the researchers select only those behaviors accepted by the majority as those to be promoted through the behavior change strategy and also take into account in the design the enabling factors identified. TIPs has frequently revealed that when properly motivated, families will often try behaviors that project staff thought were not feasible for them, i.e., very poor families buying red meat occasionally.

In spite of some very successful use of TIPs, this approach is not widely used, perhaps due to lack of understanding of the methodology. Common misconceptions are that the sample size must be statistically significant and randomly chosen, and that TIPs must be conducted by outside (unbiased) researchers. In reality, TIPs requires a sample of only about fifty, and that can be a convenience sample as long as those included are very representative of the rest of the population that will eventually be targeted. The methodology lends itself very well to being conducted by existing field staff, and in fact, serves as a learning experience to help them understand behavior change. The PAHO IYCF guidance called PROPAN is doing much to disseminate the concept of TIPs to MOH personnel in Latin America and the Caribbean. The SARA Project is using TIPs in their HIV work in Mozambique. CARE has used TIPs with good results in India in a large project covering 7 states, in a child survival project in Niger, and in a national anemia project in Tajikistan.

Positive deviance inquiry (without the Hearth) is another useful formative research tool that is being used by PVOs, governments, and BASICS. As described earlier, positive deviance starts with identifying well-nourished children among very poor families in a community. Using a detailed observation and discussion guide, staff with very low literacy can make home visits to discern which feeding, caring, and health practices in those families are different enough to account for the well-nourished status of the child. The composite of these “positive deviant behaviors” from several families is then promoted to the families of malnourished children.

In some cases, a specific nutrient dense food is identified, but more often, feeding behaviors or a combination of feeding and caring practices are identified. By participating in the positive deviance inquiry process, staff and volunteers become convinced that such behaviors are possible for poor families in their community to adopt.

Doer/non-doer analysis, promoted by the CHANGE project and now used by many PVOs, comes from behavior change research methods. This is a very straight forward method of identifying what enables or impedes people in adopting new behaviors. An equal number of people who already practice the behavior (doers) and who do not (non-doers) are selected from the proposed target population. In the case of complementary feeding, this would be caregivers of young children. The sample does not have to be large, perhaps ten to twenty individuals, each of whom is asked the same five questions. The responses of the doers are then compared to those of non-doers and reviewed to find significant differences. The behavior change strategy then focuses on those differences, whether perceived benefits or very real barriers.

Summary of Current Approaches to Improving Complementary Feeding

	Well child	Periodic Weighing	Individual Counseling	NBC	IEC	Peer Support	Qualitative Research	Community -based	Dependent on Functional MOH for scale	Successfully Scaled-up*
Clinical GM		x	x		x				x	x
Comm. GMP	x	x	x	x	x			x		?
AIN- C/ AINM-C	x	x	x	x				x		x
IMCI		x	x	x					x	
C-IMCI	x	x	x		x			x	x	
CTC		x	x					x		
PD/Hearth		x	x	x		x	x	x		x
Women's Groups	x				x	x	x	x		
Social Marketing	x						x			x
Fortified Foods	x				x					x
Micronutrient Supplementation	x								x	x

*Successful = documented behavior changes in complementary feeding and hygiene or in nutritional status in a scaled-up program

Scaling-Up

The term “scale” or “going to scale” has different meanings for different approaches and this needs to be more clearly defined by USAID and other donors. In the case of many approaches, it means (ideally) reaching every mother with a child under two in a particular country. In the case of social marketing, it may mean reaching only those of a certain socio-economic status. In the case of special fortified paps, it means reaching all who need them, i.e., children at risk for malnutrition. In PD/Hearth, going to scale means reaching all communities with more than 30% moderate malnutrition based on weight for age.

A challenge for any effort at scaling up is maintaining the quality at scale as in pilot or small-scale programs.

SECTION II – CURRENT ACTIONS & RESEARCH FOR COMPLEMENTARY FEEDING

Multilaterals

Proponents of IYCF within these institutions stated that there are policy constraints within their own institutions; however, they felt that there has been some shift towards appreciating the importance of complementary feeding. The World Bank is making IYCF a priority for the nutrition programs it does fund, investing heavily in GMP programs in both Latin America and Africa. While the Asian Development Bank continues to support micronutrient fortification, it is also supporting regional collaboration around IYCF and development of a fortified complementary food for SE Asia. Both WHO and UNICEF are more optimistic than a year ago about national government acceptance of the Global Strategy for IYCF. UNICEF has made a strategic decision to package breastfeeding and complementary feeding as integral components of child survival, thus, ending long-term vertical programming. The World Food Programme is supporting development of complementary/weaning foods for mass distribution, to assure that the commodities it can provide reach children at an age when they are vulnerable to malnutrition.

USAID-funded Projects

LINKAGES and BASICS have been largely responsible for promoting the Essential Nutrition Actions framework with some excellent evaluative research and reports documenting the efficacy of ENA projects in various countries. The inclusion of ENA in pre-service training in LINKAGES' Ethiopia program is notable for the potential long-term impact. LINKAGES feels that both the Madagascar and Ethiopia projects were particular successes, while the complementary feeding components of the Bolivia and Ghana projects were also successes. While continuing to promote ENA, BASICS III is also focusing on strengthening the nutrition component of IMCI. BASICS is also looking at further work on the expected-weight-gain concept that was integrated into *AIN-C* as a means of improving growth monitoring programs.

FANTA has invested in developing and validating indicators for complementary feeding in collaboration with IFPRI. Work continues on validation of dietary diversity as a proxy for dietary adequacy. As a result of the indicator work, FANTA has assisted in revising the DHS survey and will soon revise the KPC used by Child Survival and Title II projects. FANTA is also providing direct technical support to the Title II programs in Central America to strengthen IYCF within the MCH component of those programs.

Bilateral Projects

USAID Guatemala funded URC to adapt the Honduras *AIN-C* approach for Guatemala. A version called *AIEPI-AINM-C* has been developed and tested and is now being scaled-up in priority areas of the country with funding from both USAID and the World Bank.

In Haiti, with Title II funding, IFPRI is looking at the difference in impact between a food program targeting nutrition education and food only to the families of children identified as malnourished vs. targeting all families of under-twos in an at-risk area. The effort has involved designing the interventions after an in-depth qualitative study of current complementary feeding practices.

The following table illustrates the interventions currently being used by 4 major PVOs to promote complementary feeding in a total of 25 projects including Child Survival grants, Title II, and emergencies. Seven of the eighteen are funded by sources other than U.S. government and three are funded by OFDA. Note that not all of the approaches are being used in all projects. With the exception of the three emergency projects, all are being implemented in partnership with national governments, thus, introducing to or strengthening the approaches of the MOH.

Approaches being used by PVOs to Improve Complementary Feeding

	CARE	Concern	ADRA	Mercy Corps
GMP - Health facility level	X	X	X	X
Community-based	X	X	X	X
<i>AIN-C/AINM-C</i>	X		X	X
Mass media				
Education Sessions for Mothers Groups	X	X	X	X
Home visits by volunteers to counsel mothers or caregivers	X	X	X	
Educ. of fathers, grandmothers, leaders	X	X		X
Dissemination of print materials	X	X		X
Trials of Improved Practices (TIPs)				X
PD/Hearth		X	X	X
Positive Deviance as formative research	X	X	X	
Community Therapeutic Care (CTC)		X		X
Mother-to-mother support groups	X		X	X
Social marketing		X	X	
Direct distribution of micronutrients		X		
Essential Nutrition Actions (ENA)	X	X	X	X
Gardens, agriculture	X	X	X	X

Of the 33 projects funded through USAID’s Child Survival Health Grant Program, only eight specifically mentioned using ENA in their project design. This may be as much a limitation of terminology, since most of the headquarters staff interviewed who represent 14 of the 33 projects are generally familiar with ENA and reported using the concepts. A finding from the interviews is that while PVOs are more familiar with the range of approaches than staff at CAs and bi-laterals, not all PVOs are aware of the WHO Guiding Principles for Complementary Feeding nor use them as a basis for messages. However, the project indicators, which are mandated by the Child Survival Grants Program, follow the guidelines and would lead the PVOs to choose appropriate messages. The Child Survival project indicators are measured using the standardized KPC instrument, which has been recently revised by FANTA and IFPRI. Additional revisions will be made this year based on continued work by FANTA and IFPRI on indicators for diet diversity and adequacy.

The PVOs who provided the data for the chart above all stated that their best results in changing behaviors have come from PD/Hearth and from community-based growth monitoring, specifically the AIN-C and AINM-C version. They feel that these methods empower mothers to understand their child’s growth and to take concrete actions. Concern also found behavior changes with CTC. ADRA has had success with cooking demonstrations within the context of women’s groups, and CARE has had success with mother-to-mother support groups for both breastfeeding and complementary feeding behaviors. Concern has found that using Positive

Deviance as a formative research tool has enhanced effectiveness of behavior change interventions. The PVOs based this discussion of success on findings from baseline and endline quantitative surveys using the standardized KPC survey or from findings from periodic monitoring surveys of the same indicators using either lot quality assurance sampling (LQAS) or sentinel site monitoring.

PVOs would like training or on-line instruction on TIPs. Another suggestion was to have a single user-friendly package of all the tools or approaches for promoting complementary feeding. Both the PVOs and CAs with whom they collaborate lament the lack of documentation of the PVO efforts. Many excellent applications of approaches are never documented or shared with anyone other than donors. Assistance with documentation would enrich the body of programming knowledge.

Application of the Guiding Principles and Indicators

The IMCI and *AIN-C* packaged approaches were developed and were well-along in implementation before the Guiding Principles were published. The *AINM-C* package was adjusted after the Guiding Principles became available. PAHO has done much to promote application of the Guiding Principles through ProPAN in Latin America; however, adoption of the indicators lags. As mentioned above, most PVOs are using some of the Guiding Principles and related indicators simply because of the dictates of the Child Survival grants program to use the standardized KPC survey. They are primarily stressing diet diversity and food consistency, feeding frequency, timeliness of introduction, and continued breastfeeding. In Title II programs, the emphasis is often hygiene rather than feeding. Other organizations such as BASICS do not seem to be focusing on the Guiding Principles or their indicators. There is no evidence that anyone, other than the Latin American governments, may be trying to promote all of them. This may be practical since current practices vary, and it may be more useful to direct efforts to those areas that are weak.

Research Projects

Kay Dewey's current research at UC-Davis is more focused around breastfeeding in Peru, but her Ghana research is evaluating the acceptability and effectiveness of different home-applied micronutrient supplementation: sprinkles, a crushable tablet, and a ready-to-use food called Nutri-butter. Preliminary results show that children on the latter experienced effects on growth and motor development but that those on the sprinkles and tablet did not. All had a similar effect on iron status. Her work on the effect of delaying clamping the umbilical cord for only two minutes shows that it improves iron status of breastfed infants for up to six months. This is useful to counter the pressure to introduce iron-source foods prior to six months. Kay Dewey will be on sabbatical next year and is interested in looking at policy issues around IYCF, particularly complementary feeding.

Laura Caulfield's current research focuses on evaluation of the process of implementing complementary feeding interventions. She is interested in developing a subset of indicators that can be used to monitor the quality of implementation and whether the intervention or program is being implemented as designed. In other research, she is involved in the on-going evaluation of the Integrated Nutrition and Health Project in India where they found it useful to follow a cohort of children as a means of evaluation rather than having a control group.

Studies at the Instituto de Investigación Nutricional in Peru related to complementary feeding are looking at ways to increase iron and zinc intake through meat consumption. The Instituto is assessing acceptability of a meat flour both from palatability and food safety perspectives and are evaluating acceptability of some meat-fortified weaning foods. They are also investigating use of malt to reduce viscosity of cereal-based weaning foods in order for a young child to consume more.

SECTION III – SUGGESTIONS FOR PRIORITY ACTIONS FOR IMPROVING COMPLEMENTARY FEEDING

Not only the researchers, but also all others interviewed, except CAs, were asked what they feel are three priority actions to advance complementary feeding in the next five years. All responses are listed here. Duplicative responses have been combined with a number indicating how many responded that way.

Research

There were no duplicative responses in this category; hence, no clear priorities emerged.

1. More evaluation research to show results.
2. More research on responsive feeding.
3. Research on complementary feeding for non-breastfed infants of HIV+ women.
4. Stronger links between research and action and the identification of gaps.
5. Field research on the “next steps” – marketing of “sprinkles” and similar products.
6. A study that examines what influences compliance with counseling received. There is much published on this for the Western world, but not for developing countries.
7. Evaluation going out to the level of morbidity rates or decreased severity of illness, including association of growth faltering with burden of malaria, pneumonia, etc. to influence policy makers.

Policy and Funding

The priority for this category was resoundingly for more funding and the closely related need to convince policy makers of the value of investing in improving complementary feeding.

8. Research results to influence policy-makers.
9. More funding for program-oriented research.
10. More funding for research and implementation.
11. Evidence-based results that show nutrition interventions can be scaled-up. (“EPI and Vitamin A proponents don’t believe IYCF approaches can be scaled up.” – Ian Darton-Hill)
12. Internalize the “rights” to exclusive breastfeeding and adequate complementary feeding into every health program.
13. Get the economic and safety net arguments into the nutrition policy dialogue.
14. Within the field of nutrition, a shift in understanding the consequences of moderate and mild malnutrition instead of focusing on micronutrients.

Implementation

The only priority in this area that was repeated (by five individuals) was the need to move beyond pilots to scale, taking into account the local constraints for funding and supervision that always re-emerge when donor funding ends. All the other responses listed are individual.

15. More funding and interest in food-based approaches or integration of food and supplements like sprinkles.
16. More and shared consensus on the evidence of which approaches or integration of approaches is effective. Opportunities for organizations to connect, share strategies (complementary not competitive.)
17. More funding for implementation of effective programs at scale.
18. It's time to move beyond pilots and really focus on going to scale. – repeated by 4 people
19. Focus on streamlining systems and training that will continue to function within the local constraints (limited MOH personnel and resources) once external funding and TA ends.
20. Equip caregivers with the knowledge, motivation and resources to become empowered to make changes. Many current approaches are not empowering.
21. Cease underestimating how much caregivers can learn and share all the Guiding Principles with them.
22. Address the issues that prevent mothers from complying with recommendations i.e., workloads, shortage of cooking fuel, time away from home, etc.
23. Strengthen NGO/PVO efforts because many are very good models.
24. More technical assistance to governments and PVOs on feeding children of HIV+ mothers or mothers who don't know their status in high prevalence areas.
25. Integrate ENA and the Guiding Principles into pre-service training as well as in-service.
26. Move ENA forward through the local networks which must be established in each country.
27. Start with breastfeeding because there will be results to see and it links well with micronutrients, complementary feeding, and PMTCT.
28. Use a comprehensive care approach from prenatal through the first year of life – use the same peer counselor or health provider all the way through.
29. More work on ways to facilitate continued breastfeeding, particularly for mothers in the workplace.
30. Minimize the training time needed to orient staff to new norms.

LIST OF CONTACTS

Organization	Contacts
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Johns Hopkins SPH	Laurie Caulfield
LINKAGES	Vicky Quinn
SARA Project	Ellen Piwoz (via e-mail)
UC- Davis	Kay Dewey
UNICEF	Ian Darton Hill, Moazzem Hossain, Nancy Terreri
URC	Peggy Koniz-Booher
WHO	Randa Saadeh
World Bank	Rae Galloway, Alesandra Marini

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