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NUTRITION FOR INFANTS AND CHILDREN

BASICS III

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What is this technical area and why is it important to child health?

Adequate nutrition is the intake and utilization of enough energy and nutrients, together with disease control, to maintain well-being, health, and productivity. “Malnutrition” includes generalized malnutrition (which manifests itself as stunting, underweight, and wasting in individuals) and deficiencies of micronutrients, such as vitamin A, iron, iodine, zinc, and folic acid. The most visible evidence of good nutrition is taller, stronger, healthier children who learn more in school and become productive, happy adults, who participate in society. Too little or too much consumption of energy and nutrients causes health damage. Individuals who are within acceptable norms for body size and biological indicators of micronutrient status are considered adequately nourished.¹

About half of all childhood deaths in developing countries are associated with malnutrition. Improving nutritional status would not only eliminate deaths due to malnutrition, but would also avert a significant proportion of deaths due to diarrhea, measles, pneumonia, and other common childhood diseases. Yet, the routine use of nutrition interventions in health programs remains low.

Health services in many countries are not adequate to deliver high quality nutrition interventions. And, successful community-based pilot programs in nutrition have been difficult to scale up and sustain. Moreover, many programs do not give sufficient attention to the constraints that can prevent caregivers from feeding their children properly, like beliefs that colostrum is bad for a newborn baby, family pressures to feed water instead of exclusive breastfeeding, or a heavy workload that gives mothers little time to prepare appropriate and nutritious complementary foods.

What was BASICS’ involvement in promoting nutrition?

USAID/BASICS’ nutrition program spanned ten countries, including:

- Afghanistan
- Cambodia
- India
- Iraq
- Madagascar
- Malawi
- Nigeria
- Rwanda
- Senegal
- Timor-Leste

¹ Nutrition Essentials: A Guide for Health Managers, 2004, BASICS, UNICEF and WHO, p.3.

The project’s approach in these country programs was to implement all of key components of the Essential Nutrition Actions (ENA). ENA is a strategy or approach to expand the coverage of six affordable and proven nutrition interventions through actions at health facilities, in communities, and through communications channels. ENA is a series of healthy behaviors for mothers that were defined as a package by USAID/BASICS for their relationship with morbidity and mortality, as well as the fact that these behaviors could be changed through cost-effective public health programs, and that their progress could be measured. Table 1 summarizes the key components, strategies and principles of ENA.

Table 1
Essential Nutrition Actions: Its Key Components, Strategies and Principles

What actions are included in ENA?	What strategies are used to deliver ENA?	What are the guiding principles of ENA?
<ul style="list-style-type: none"> • Immediate and exclusive <u>breast feeding</u> for six months • Appropriate <u>complementary feeding</u> from the age of six months through two years, with continued breast feeding • <u>Nutritional care of sick children</u>, including feeding during illness • <u>Recuperative feeding</u> • <u>Care of severely malnourished children</u> • <u>Adequate intake</u> of Vitamin A, Iron, and Iodine • <u>Maternal Nutrition</u> 	<ul style="list-style-type: none"> • To integrate nutrition into health systems, and system strengthening • Building Capacity and mobilizing communities • Utilizing multi-channel ongoing communications 	<ul style="list-style-type: none"> • Prioritize an age group. And here we have the age group of from pregnancy to two years, that key window of opportunity group. • Set a goal of reaching large scale coverage (i.e., at least 80%). • Maintain a frequency of contacts that are tailored to an age category and, whenever possible, add these to existing contacts. This is often expressed as, “Making all possible contacts at all the right ages, and giving all the right messages.” • Create awareness among policy makers, community leaders, and the public. • Prioritize prevention.

ENA is globally recognized as among the most cost-effective, proven approaches for improving child health and nutrition. And, most certainly, it has been a key contribution by the project to child health and nutrition. First of all, ENA has put

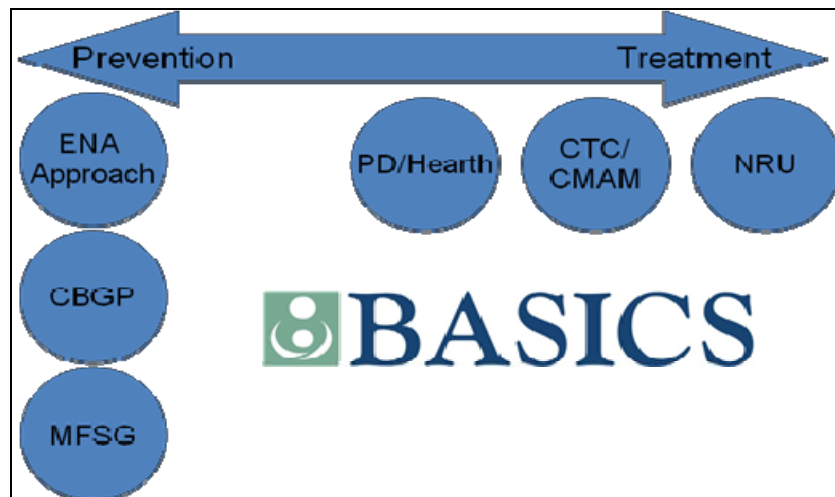
nutrition into a package, producing both synergy and economies of scale in programming. Secondly, ENA addresses all types of nutrition—it can be used to prevent insufficient weight gain, stunting, and micronutrient malnutrition. And, ultimately, it prevents under-nutrition instead of responding to it only once it occurs.

While USAID/BASICS implemented the ENA Approach, it's important to understand that a host of activities promote ENA, but programs generally don't implement ENA per se. That is, programs may concentrate on communications approaches through multiple channels, such as peer-to-peer at the community level or via mass media; and community-based growth promotion (CBGP) and PD/Hearth are also ENA programs. Thus, referring to ENA ultimately means the seven actions shown above which mothers can practice.

What is the implementation process?

USAID/BASICS interventions, particularly over the 5-year lifetime of the project, span the continuum from prevention to treatment. As shown in Figure 1, the prevention side includes the ENA approach, community-based growth promotion (CBGP), and, more recently, mother-father support groups. Positive Deviance/Hearth is found roughly in the middle; and, at the treatment end of the scale are Community Therapeutic Care (also known as Community-Based Management of Acute Malnutrition) and Nutrition Rehabilitation Units (also known as (Therapeutic Treating Centers).

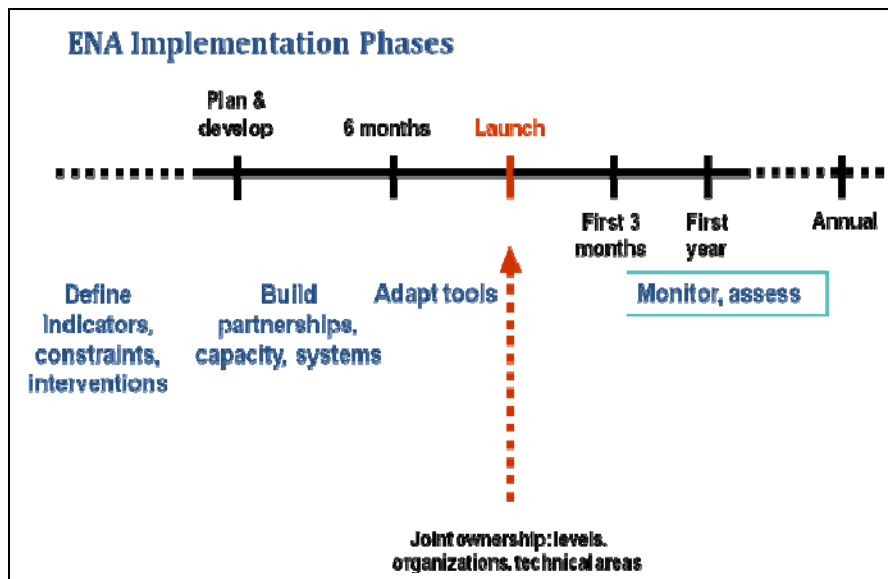
Figure 1
The Continuum of BASICS Nutrition Interventions



BASICS II in particular had a lot of country programs that followed the ENA approach, and developed a timeline for its introduction. As seen in Figure 2, it takes more than a year before program launch. Then, once the program has started trying to change

behaviors, it becomes important to periodically do rapid appraisal surveys (RAPs) in order to better understand if objectives are being met and, most importantly, if impact is being achieved.

Figure 2
Phases of Implementation of Essential Nutrition Actions



To answer whether contact is being made with mothers and whether contacts are changing behavior, USAID/BASICS approached RAPs in India’s Arissa State in a back-to-front fashion. That is, the project identified an area where nutritional status had improved and then sought to determine if the percentage of mothers practicing certain behaviors had improved over the same period. In turn, it was essential to determine if improved behaviors could be linked to the program elements that had been implemented by assessing whether mothers had indeed received contacts.

What have been the results in nutrition and what did we learn?

1. Community-based Growth Promotion

Community-based Growth Promotion (CBGP) is a community-based preventive health and nutrition program that actively engages families and the community in maintaining the adequate growth of children under two years of age, and in caring and treating sick children under five years of age. CBGP is focused on one key indicator: the Adequacy of Weight Gain (AWG) of any child under the age of two. Counseling in the program is based on the AWG and tailored according to weight gain status. Home visits are made

to children to follow up on problem children, to catch children who have not come for the monthly session. And, finally, under CBGP, there are quarterly meetings with the community itself to discuss their progress on AWG, as well as to talk about coverage, and how the community might be able to make collective responses to improvement.

It is important to note that counseling is quite regimented in CBGP. First the child is classified by their growth status (i.e., did they gain enough weight during the month?) Then, the caregiver's current feeding practices are assessed through an interview. Finally focus is placed on key feeding problems by offering mothers proven feeding options. The idea that these options are offered is key. Volunteers negotiate one or two changes that the caregiver agrees to try for the next month. Then, when she returns after a month, follow-up on results of the new practice is carried out, based on the child's growth status. Thus, if a mother tries something new and her child's growth improves at the same time, the new behavior is reinforced as a contributor to her child's health.

Obviously, counseling mothers on proper feeding is a fairly complicated thing, and the average volunteer is not going to be instantly that good at it. So, part of the genius of CBGP is to find ways to enable community volunteers to give good counseling. The process begins by finding out what problems exist with feeding practices and which of those problems contribute to growth failure. From there, solutions can be formulated and tested, and volunteer training can be undertaken based on validated solutions.

AIN-C (Honduras)

The Honduras AIN-C (*Atención Integral a la Niñez en la Comunidad* or Integrated Community Child Health Program) is a national-scale, community-based growth promotion program aimed at preventing under-nutrition in children below two years of age. AIN-C was initially launched in the mid 1990s and intensely supported by USAID over the period from 1998 to 2005.

Evaluation of the *AIN-C Program in Honduras* is based on an analysis of data collected in 2002, during USAID/BASICS' second contract cycle, but not concluded at the time. Given the importance of the AIN-C Program, analysis of the earlier data was taken up and completed during the final phase of USAID/BASICS.

Results demonstrated that AIN-C had a considerable, positive impact on young child feeding and care practices. For example, the proportion of caregivers who appropriately fed children aged 6 to 23 months, the percentage of children who were fully immunized by 13 months, and the percentage of children who received iron and vitamin A supplementation by 23 months were all significantly higher in the AIN-C group than among non-participants. There was also a positive impact on nutritional status, especially among children from poorer households and those who participated more regularly in the program. AIN-C participation was associated with a modest but positive effect on weight-for-height among poorer households, and intensity of participation (i.e.,

attendance at weighing sessions) was positively associated with weight-for-age, weight-for-height, and height-for-age.

An interesting challenge was encountered in arriving at the above conclusions. That is, looking at the original results without any controls, it would appear that AIN-C is harmful to children because better nutritional status was achieved in non-intervention districts. A primary reason for this was that the intervention and non-intervention groups were not equivalent. For ethical reasons, it is inappropriate to randomize children into an intervention groups and control groups when implementing an evidence-based health program of this type. So, comparisons must be made between entire communities that are participating in the intervention and those that are not. In this case, the control group chosen was ultimately a wealthier cohort that also lived in relatively close proximity to a health center. Moreover, in the absence of random sampling, different age distributions prevailed in each sample, which is quite critical given the association between age and nutritional status. Additionally, shifts in support during the program caused some communities to discontinue participation. Lastly, a number of non-participating communities adopted the intervention on the own based on its perceived success elsewhere.

The analysis of results was controlled for age and attempts were made to control for wealth using an index made up of a group of assets that a household owns. With these asset scores, it was discovered that that the effect of participation is about three times more frequent among poorer people than among wealthier people. Thus, it can be said that nutrition programs help poorer people overcome the lack of resources.

Furthermore, in the absence of geographic separations, participation intensity (i.e., the intensity of attendance at weighing counseling sessions) was used as an additional variable to distinguish between participants and non-participants. Participation intensity was calculated as the percentage of monthly weighing sessions in a year out of the total number possible; or twelve sessions for children over one year of age, and one session for each month of life in the case of younger children. Non-participation was obviously indicated by zero attendance. Based on the regression coefficients produced by this method, it was shown that complete participation in weighing sessions resulted in just slightly less than a 0.5 Z-score (standard deviation) improvement in nutritional status, which is fairly significant.²

Click [here](#) to read *AIN-Evaluation*

² One standard deviation below the median indicates mild malnutrition; two is equivalent to moderate malnutrition; and three is defined as severe malnutrition.

2. Mother/Father Support Groups

Under the ENA approach, mother support groups are one way of reaching the community and making contacts. Lessons learned from Mother Support Groups were laid out effectively in a report by Cynthia Green during the first phase of USAID/BASICS, in 1998.

Click [here](#) to read *Mother Support Groups: a Review of Experience in Developing Countries*.

Malawi

In Malawi, USAID/BASICS extended the mother support group concept to gain the involvement of men. These mother/father support groups (MFSG) target infants and children under 2 years of age and their mothers; pregnant girls and women; and HIV-exposed infants and children. The groups are facilitated by community volunteers who are selected by the village head. They are trained and supervised by the Ministry of Health and health surveillance assistants (HSAs).

The MFSGs focus on essential nutrition actions with an emphasis on HIV and infant feeding. They are linked to ENAs and health services because USAID/BASICS employed a two-component program that included a community aspect and a clinical aspect (linking ENA activities between the two levels). The groups have monthly meetings at which they weigh children and follow a counseling process similar to CBGP, focusing on: breast feeding counseling and support; demonstration of complementary food preparation and practice in complementary feeding; referring sick children to health surveillance assistants; and motivation for pregnant girls and women to seek HIV testing.

Also like CBGP, the MFSF approach includes outreach to the community through home visits. As of 2009 USAID/BASICS assisted in the establishment of 241 mother-father support groups and facilitators in two districts, and early results were good enough to stimulate advocacy efforts in two new districts. Because in Malawi there is very little in terms of this community-based nutrition, there is very little going on in terms of preventive nutrition.

Click [here](#) to read *Assessment of USAID/BASICS' Community Essential Nutrition Actions Program in Malawi*

3. PD/Hearth

A PD/Hearth intervention begins with a positive deviance inquiry, during which community members discover and identify the feeding practices of neighbors who have well-nourished children. A hearth is subsequently established as a venue where trained volunteers assist parents (and other caretakers) in preparing meals and snacks for their malnourished children, using the beneficial, locally-available foods that were identified through the positive deviance inquiry. Two-week participation in a hearth is common, and often contributes to rapid improvement in nutritional status for children, as well as better long-term feeding practices by caretakers at home.

Nigeria

To support PD/Hearth, USAID/BASICS assisted Food Basket Foundation International in the training of volunteers to conduct Positive Deviance Inquiries, conducting inquiries in three communities, and developing Hearth curricula and menus.

The results of the Positive Deviance Inquiries produced various positive deviant menus that can be used in the Hearth sessions, and were accompanied by a market survey to identify available and affordable ingredients to be used in the Hearth meals. The results were also useful for identifying key behaviors that appear to lead to better health and nutrition among children, including: practicing early and exclusive breastfeeding; give children a variety of available and affordable nutritious foods, and supervising feeding; initiating gradually increasing complementary feeding at six months; actively caring for children, including important roles for fathers and grandmothers; and ensuring good preventive and care-seeking practices in the home.

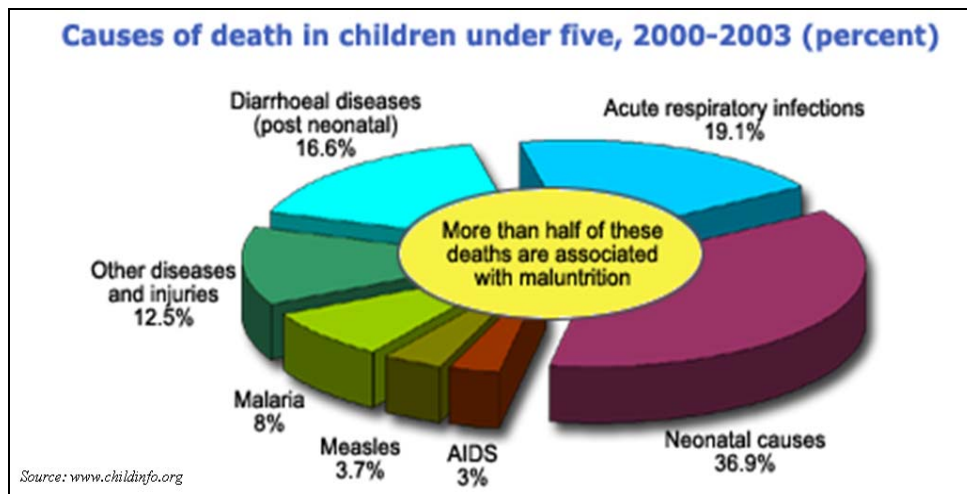
Limited data collection also showed that 133 caregiver-child pairs participated in PD/Hearth sessions in Nassarawa state in June 2007, and the enrolled children showed an average weight gain of 416g over the course of the Hearth sessions. In July, 143 caregiver-child pairs participated and average weight gain was 387g for these sessions. In Akwa-Ibom state, USAID/BASICS' implementation partner experienced difficulties in implementing PD/Hearth, primarily because caregivers were reluctant to contribute the essential "positive deviance foods."

Click [here](#) to read *Technical Assistance on the Positive Deviance Approach/Hearth Model in Nigeria*.

4. Community Based management of Acute Malnutrition

It is well-established that over half of all deaths in children under the age of five are associated with malnutrition. Figure 3 shows the causes of deaths in children under 5.

Figure 3
The Continuum of BASICS Nutrition Interventions



Yet, it is far less recognized that, although more than 50% of child deaths are associated with malnutrition, only 10% are associated with severe malnutrition. Moderate and mild malnutrition are killing the most children by far. Nonetheless, USAID/BASICS has witnessed an increase in attention to treating severe malnutrition, and a decreasing appreciation for prevention-based programming, all despite the project noting in 1997, “Programs directed only at treating severe malnutrition...will have only a minor impact on child mortality rates.”

Treatment of severe acute malnutrition is generally thought of as having four main components: social mobilization, supplementary feeding, outpatient therapeutic programs, and stabilization centers. Yet, one of the problems with treating severe acute malnutrition in the hospital is that opportunity costs are very high for families. For example, seeking treatment in hospitals often requires long distance travel, resulting in lost wages and inattention to other children at home during absences. Thus, children are often not brought to health facilities until they are severely ill, where the added problem of cross-infection occurs due to the high concentration of such sick children.

In the face of these challenges, the introduction of community-based approaches to the treatment of severe malnutrition was an important milestone, made possible by the development of Ready-To-Use Therapeutic Food (RUTF). According to the prevailing classification scheme, this basically allows home-based and outpatient treatment of all

children suffering acute malnutrition, but who are still able to eat or who are not suffering other severe complications.

Malawi

In collaboration with UNICEF and Malawi's CTC Advisory Services, USAID/BASICS is providing technical assistance for Community Based management of Acute Malnutrition in 5 districts, 2 of which the project started up and 3 of which it took over from others. In the 2 start-up districts, 2,500 children had been admitted into the program between 2007 and 2008.

Madagascar

In Madagascar CMAM was initially implemented in 2005 as a response to the consequences of natural disaster (i.e., cyclones) and again in 2007. With support from UNICEF, the program was then considered for nationwide scale-up on an ongoing, non-emergency basis, and a pilot program was initiated to inform expansion.

Partnering with the Ministry of Health and UNICEF, USAID/BASICS conducted a review of the program, which raised a number of concerns that suggested challenges for implementation of a universal CMAM intervention:

- 1) The proportion of children treated is quite low in comparison to what one would think from demographics to be the case load. So somehow the children are not being found.
- 2) The methods that were planned for screening didn't work. Not enough people to do it is one of the reasons.
- 3) In comparison with the international benchmarks, too many children died, too many mothers defaulted, and not enough kids recovered. So there's problems with putting this intervention into the field.

Click [here](#) to read *Madagascar's Pilot Program for Community Management of Acute Malnutrition: Evaluation Highlights*.

Discussion

There is no question that CMAM can save a significant number of lives and is currently a popular intervention amongst nutrition stakeholders globally. Yet, USAID/BASICS' experience would suggest that universal implementation of CMAM in any given country offers insufficient impact in relation to its cost and, particularly, diverts attention and resources away from the more basic need to prevent malnutrition in the first place.

With respect to cost, it is important to recognize that foods used to implement CMAM are estimated to cost \$30-\$45 per case, according to UNICEF and WHO. Thus, if you use Madagascar's annual estimated caseload of 40,000 as an example, that country's CMAM program would cost at least US\$1.2 million per year; a sum that realistically brings sustainability into question.

More importantly and as suggested above, severe malnutrition is not as much of a public health threat as moderate and mild malnutrition. In Malawi, for example, the government's plan to roll out community-based management of acute malnutrition nationwide noted that severe, acute malnutrition only affects about 0.5% of the country's under-5 population. It is also worth noting that any child who develops severe malnutrition is subject to a much higher likelihood of death (about 8 times as high as healthier children) in the short-term, and developmental and behavior side effects over the long-term. Thus, *preventing* as many cases of malnutrition as possible is all the more important.

Finally, it is worthwhile asking questions about the nature of malnutrition. Although the current global food crisis has raised awareness about household food security, the majority of children suffering from malnutrition are clearly more often victims of inappropriate feeding as opposed to poor access to nutrients. Thus, if food is not the root of the problem, food-based approaches like CMAM may indeed not be ideal as priority solutions.

Based on these issues and its field experiences, USAID/BASICS has concluded that:

- The costs of CMAM must be discussed and confronted by stakeholders. Ultimately, donors aggressively promoting such programs should realistically not expect Ministries of Health to bear their costs.
- Situational assessments at the national or sub-national level to investigate the magnitude of the acute malnutrition problem should be conducted to inform the feasibility and necessity of CMAM programs.
- High-coverage, preventive ENA promotion programs should be prioritized and CMAM should be limited to crisis response, unless ENA promotion programs are fully-funded and operational.
- Efforts should be focused on developing an integrated ENA/CMAM approach so that prevention and treatment are addressed in a more coordinated fashion.

What is the way forward?

The key elements of promoting nutrition and dealing with malnutrition consist of several key activities in countries and their ministries of health:

- Integrating nutrition into health policies
- Adopting the Essential Nutrition Actions approach
- Focusing on prevention of malnutrition
- Improving exclusive breast feeding results
- Ensuring complementary feeding
- Continuing breast feeding and feeding during diarrhea
- Promoting community-based growth promotion, including family and mother actions and support groups
- Enabling skills, job aids and solutions for counseling of mothers and care givers
- Having therapeutic feeding programs be on an outpatient basis, as possible.