UPHOLD
UGANDA PROGRAM FOR HUMAN AND HOLISTIC DEVELOPMENT

Uganda Community-Based Growth Promotion:
Program Review

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Executive Summary

The Uganda Program for Human and Holistic Development (UPHOLD), a USAID-funded program working in 34 districts of Uganda, supports community-based growth promotion (CBGP) in selected districts to help empower communities to prevent malnutrition among children under two years of age and to serve as a catalyst for solving problems of illness, poor feeding practices, or other childcare concerns at the community and household level. A total of 1,290 growth promoters were trained in 524 villages within 6 districts and they established monthly growth promotion sessions.

A program Review was conducted to assess program operation, examine lessons learned, and measure the potential impact of CBGP. Data were collected from growth promotion registers from 20 randomly sampled villages in four districts covering 1,249 children 0–23 months old. A total of 180 counseling sessions were observed, each followed by an exit interview with a caretaker.

Villages with consistent participation among the under-two population had improved child growth trends. From September 2006 to April 2007, overall malnutrition levels (weight-for-age below –2 Z-score; 2005 WHO standards) declined from 12.8 percent (n=748) to 7.9 percent (n=680) after 8 months of program implementation. All mothers were counseled in conjunction with monthly weighing. Three-quarters of the mothers received messages relevant to the age and well-being of their children that addressed feeding practices and other health and nutrition needs. Villages that achieved the best results had higher rates of child participation and well-established support supervision mechanisms.

Community-based growth promotion activities are making a difference in child growth and nutrition status within households and communities. Weighing children on a monthly basis draws attention to child growth and health. Furthermore, providing mothers with relevant messages on child feeding, health, and care promotes key child survival interventions, which yield results for children. Making some small adjustments in the current operational aspects of the program could greatly expand its positive impact within villages that have ongoing programs. Introducing CBGP to additional districts, sub-counties, and villages, and broadening the scope of the current program to include other child health issues beyond feeding and immunization, offer the potential for even greater improvements in child health and nutrition throughout the country.

Table of Contents

List of Tables

List of Figures

Acknowledgements

This Community Based Growth Promotion Review would not have been possible without the hard work and strong collaboration of the community growth promoters and their trainers and supervisors. We thank them for their dedication and commitment to community-based growth promotion (CBGP) in Uganda. Despite the fact that this Review has been conducted as UPHOLD support for child health in Uganda is coming to an end, we commend the view of Health District personnel and volunteers that this Review provides lessons learned and recommendations to strengthen the ongoing implementation of this program.

Special thanks go to the team of data collectors in each of the districts who helped to collect a great deal of useful information in a very short period of time. These individuals include: Christine Orone-Kanya, National Ministry of Health; Martin Ndifuna, UPHOLD Eastern Regional Office; Alex Kalyesubula, Abdul Kasule, and Janepher Fachan, Luwero district Health Office; Sam Wagoina, Maila Juma, Fred Kadama, and Mary Nabirye, Bugiri district; Samuel Basalirwa, Milly Gabbula, and Walaka Basoga Wilson, Idudi Development Association, Mayuge district; and Olivia Busingye, Fantastic Tumwebaze, and Deus Madudu, District Health Office and KAARO, Kiruhura.

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Acronyms

ADB	Africa Development Bank
BASICS	Basic Support for Institutionalizing Child Survival
CIE	Community Involvement in Education
CBGP	Community-Based Growth Promotion
CSO	civil society organization
DHO	District Health Officer
IDDA	Idudi Development Association
ITNs	insecticide-treated nets
LC1	Local Council 1 (Village level)
NCHS	National Center for Health Statistics
No.	number
SC	sub-county
SPSS	Statistical Package for the Social Sciences
TB	tuberculosis
UDHS	Uganda Demographic and Health Survey
UPHOLD	Uganda Program for Human and Holistic Development
USAID	United States Agency for International Development
VHT	Village Health Team
WHO	World Health Organization

Highlights

Promoting the Growth of Children in Uganda

Building on prior work under USAID's Basic Support for Institutionalizing Child Survival (BASICS) project and drawing on growth promotion experience worldwide as summarized by The Manoff Group, the Uganda Program for Human and Holistic Development (UPHOLD) began its support for community-based growth promotion (CBGP) on a small scale in Bugiri District in 2004. As of April 2007, UPHOLD had trained more than 1,200 community growth promoters and introduced the approach in more than 500 villages in 5 districts, serving approximately 15,000 children under two years of age on a monthly basis. A Review of the program was conducted by UPHOLD in May 2007. This Review demonstrates that the growth promotion approach used by UPHOLD has great potential to prevent malnutrition and maintain child health in Uganda.

Overview of Review Methodology and Sample

Data including child age, weight, and growth were collected from the CBGP registers in 20 randomly sampled villages in 4 districts. A total of 180 counseling sessions were observed and exit interviews conducted with caretakers in 18 additional villages. Key informant interviews were held with staff at the district and sub-county level as well as with growth promoters. In total, data were collected from more than 1,200 children under two years of age who were enrolled in the CBGP program in these villages from September 2006 to April 2007, and more than 100 volunteers, staff, and other health representatives provided qualitative information on the operation and effectiveness of the CBGP program through key informant interviews and during district-level orientation and dissemination meetings.

Program Coverage and Participation

All of the CBGP registers reviewed were focused exclusively on children from birth to 23 months; children moved out of the program once they reached age two. Program coverage was high, reaching 90 percent of all children under two years at the outset of the program in all districts. However, program coverage declined over time in some areas, as not all villages registered newborns on a timely and regular basis. Five of the study villages did not enroll any newborn children during the Review period, the major reason being that the promoters lacked additional village registers. Among the other villages it is estimated that on average about 75 percent of newborn children were covered by the program.

Participation was good in some villages; eight of the 20 villages reached the 80 percent benchmark in at least six of the eight months reviewed. Eight villages never attained even 60 percent in any month. An overall downward trend was seen between September 2006 and March 2007, with participation rates improving again in April. Weather conditions (rain) and peaks in agricultural labor (harvesting and planting seasons) were the major reasons cited for people not attending sessions, followed by village events (burials, market days) and lack of interest due to unmet expectations or incorrect perceptions of the program.

Child Growth Trends

The Review showed that promoters across all four districts covered by the Review are effectively using the tools available to calculate children's minimum target weight gain. The adequacy of a child's growth guides the monthly growth promotion sessions with mothers. In all cases, the

focus is on an individual child's weight gain and not on the level of malnutrition. In any given month, the Review revealed that about two-thirds of children in all four districts had gained adequate weight. Communities with better participation achieved better growth trend results for children: The average rate of adequate growth in any given month in communities with high participation was 73 percent, compared to 57 percent in communities with low participation. Recuperating from growth faltering was also associated with program participation: Recuperation rates were 63 percent in communities with high participation compared to 36 percent in communities with poor participation.

Growth Promotion through Counseling

Growth promoters in all four districts had access to and utilized tools, including a set of counseling cards, to provide advice to mothers on an individual basis on feeding, childcare and health. In the overwhelming majority of counseling sessions observed, mothers were given messages that were relevant to the age and health status of the child. The observations showed—and the exit interviews confirmed—that about half of the counseling sessions concluded in an agreement between the mother and growth promoter. Growth promoters appeared to give more attention to children who were faltering in growth compared to those who were growing well. The counseling sessions with children who were not growing well were more likely to be conducted using a counseling card in order to provide relevant and specific guidance and to reach a specific agreement. Mothers of these children also affirmed more often that they had learned something new in the session.

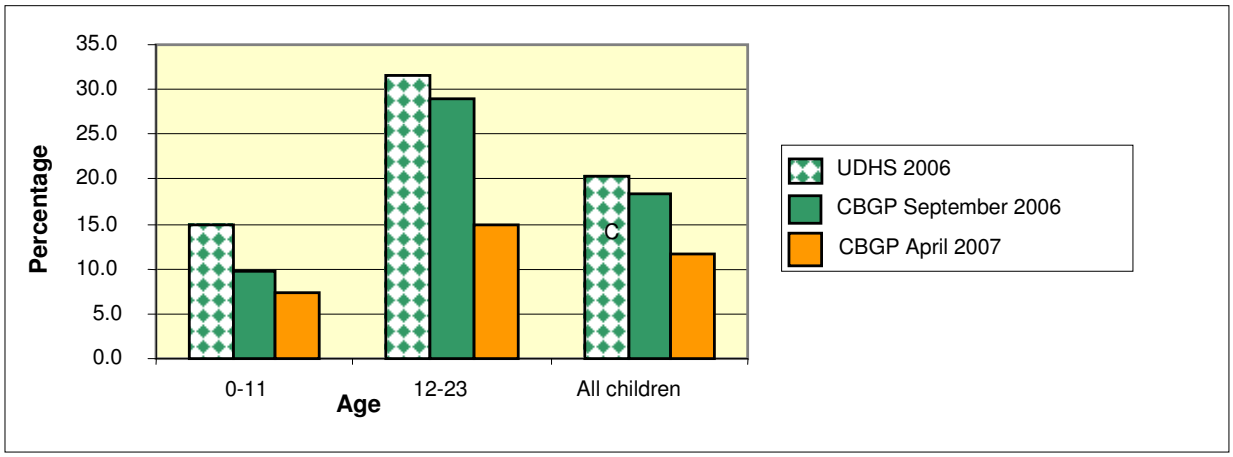
Positive Impact on Nutrition Status

The CBGP activities seem to be making a difference in child growth and nutrition status. The proportion of children who were malnourished (less than -2 Z-scores, WHO 2005 standard) declined from 12.8 to 7.9 percent. This reflects a 38 percent improvement in malnutrition over the eight-month period. The age composition of the sample at baseline and endline was significantly different as a result of the incomplete enrollment of newborn children over the study period. However, the positive impact on nutrition status was evident in both age groups: the decline in malnutrition was from 11.3 to 7.3 percent in children 0–11 months, and from 14.8 to 8.4 percent in children 12–23 months. The failure of some villages to register newborns presents a potential bias toward lower nutrition status in the nutrition analysis, as younger children tend to have better nutrition status than older children. All things being equal, the endline population would be expected to have a higher proportion of malnourished children compared to the baseline population, based on the age distribution alone. Therefore, these results may underestimate the potential positive impact of CBGP on nutrition in the community.

Nutrition Status Compared to Uganda DHS

Using the 1999 WHO/NCHS standards also used for the Uganda Demographic and Health Survey (UDHS), malnutrition rates in the CBGP program declined from 18.3 percent at baseline to 11.6 percent at endline. The proportion of malnourished children at baseline is slightly lower than the UDHS average of 20.4 percent, perhaps explained by the fact that the Review did not include any districts in the north where the highest rates of malnutrition are found.

Figure 1: Proportion of Malnourished Children by Age: UDHS Compared to CBGP Samples



CBGP and Immunization Coverage

Health center staff and health officials at national, district, and sub-county levels have praised the CBGP program for its positive impact on immunization coverage. Growth promoters check the immunization status of the children attending the growth promotion sessions, and refer those who are due for immunization to the nearest health center or outreach post. Identification of immunization status was done correctly for 70 percent of the children whose counseling session was observed.

Cost of CBGP

The estimated cost to start up the CBGP program in three sub-counties in one district is $40,251. This is approximately $268 per village and $5.37 per child, with an estimated 50 children under age two participating in CBGP per village per year. Including the supervision and support costs for the first year, the total cost is estimated at $56,200 in the three sub-counties, $375 per village, and $7.50 per child under two. For subsequent years, the recurrent costs to maintain the program in these villages are estimated at $14,226, or $95 per village and $1.90 per child under two.

The Future of CBGP in Uganda

Community-based growth promotion activities are making a difference in child growth and nutrition status. Weighing children on a monthly basis draws attention to child growth and health, and providing mothers with relevant messages on child feeding, health, and care promotes key child survival interventions, which are yielding results for children. Making some small adjustments in the current operational aspects of the program could greatly expand the positive impact within villages that have ongoing programs. Introducing CBGP to additional districts, sub-counties, and villages, and broadening the scope of the current program to include other child health issues beyond feeding and immunization, offer the potential for even greater improvements in child health and nutrition throughout the country.

Implementation of new policies under development in the Ministry of Health—including the Child Survival Strategy and the Road Map to reduction of Neonatal and Maternal Mortality—would benefit from the UPHOLD experience in CBGP. The outcome of this Review suggests the value of this CBGP approach to improving child nutrition and health.

Community-Based Growth Promotion: Key Recommendations

- Register all children under two years of age in the community to give each child the opportunity to participate in the program.
- Strengthen the system of replenishing supplies, especially registers, so that new children can be enrolled and the program can continue beyond 12 months.
- Identify within the community the best ways to reach all children on a monthly basis including establishing larger teams of promoters, encouraging participation through community mobilization, home visits to children who missed the session, linking growth promotion to other services such as de-worming, or providing other incentives for participation.
- Utilize home visits for enrolling newborn children to promote key newborn and postnatal care practices. The first weighing should take place at the next growth promotion session when the child is one month old.
- Further develop the counseling skills of promoters through support supervision and additional training.
- Expand the focus of counseling to include messages promoting health interventions such as immunization and prevention and treatment of malaria as well as newborn care and nutrition for the lactating mother, in addition to child feeding practices.
- Emphasize with promoters the importance of following-up on all children who are not gaining adequate weight.
- Encourage the presence of a vaccinator at the monthly growth promotion sessions to help integrate health service delivery in communities.
- Reinforce linkages between the health sector, particularly the district health team and health center staff, and community growth promoters and supervisors.
- Acknowledge the work of the growth promoters at local council meetings and other public gatherings to maintain high levels of interest and motivation.
- Incorporate this CBGP model into the village health team (VHT) strategy of the Ministry of Health (MOH) and include CBGP as a key intervention under the Child Survival Strategy.

1. Introduction

1.1 History and Development of Community-Based Growth Promotion in Uganda

Despite all efforts to improve child survival, growth, and development, Uganda still has high infant and under-five mortality rates, at 88 and 152 per 1,000 life births, respectively (UDHS 2001). Most child deaths could be prevented, as malaria, diarrhea, and pneumonia remain leading causes of morbidity and mortality, and 60 percent of child death is, directly or indirectly, attributed to malnutrition. The relative risk of death increases as the severity of malnutrition worsens; however, mild to moderate malnutrition has been reported to account for more than 80 percent of these deaths (World Bank, 1996). The Uganda Program for Human and Holistic Development (UPHOLD) funded by United States Agency for International Development (USAID) provided support for a community-based growth promotion (CBGP) program to help empower communities to prevent malnutrition among children under two years of age and to serve as a catalyst for solving problems of illness, poor feeding practices, or other childcare concerns at the community and household level. The CBGP program supports the village health team (VHT) approach in Uganda, which aims at bridging the gap between health service delivery and the household.

The antecedents to the UPHOLD CBGP program were the World Bank-supported Nutrition and Early Childhood project and the USAID-funded BASICS project. The World Bank project, implemented from 1997 to 2003, focused on preventing malnutrition and promoting good health through a range of interventions including community-based growth monitoring of children less than three years old. In 2002, the USAID BASICS project introduced a CBGP program in 45 communities in Luwero, Masindi, and Kumi districts that drew on the improvements and lessons learned from large-scale growth promotion programs in other countries, including: monitoring children less than two years old (as opposed to those up to age three or five), focusing on adequate weight gain in lieu of nutrition status, strengthening individual counseling services, and promoting community participation and action.

1.2 The UPHOLD Community-Based Growth Promotion Program

The foundation of the UPHOLD CBGP program is weighing and promoting the growth of all children under the age of two on a monthly basis in the community. At monthly village weighing sessions, and through other means such as home visits, community growth promoters identify children with inadequate growth, counsel caretakers on the causes of poor growth, and agree on actions to be taken to restore children to adequate growth and health. Community growth promoters are trained in and equipped with a set of tools (see Table 1) to use in conducting these monthly sessions and in providing support to the community in meeting the health needs of children. The set of counseling cards—originally developed under BASICS and focused on feeding practices—was expanded to include antenatal care and birth preparedness, newborn and postnatal care, immunization, hygiene and sanitation, use of insecticide-treated nets (ITNs), danger signs and home care for sick children (fever, diarrhea and respiratory tract infections), child spacing, HIV counseling and testing, and conflict resolution.

Community growth promoters generally work in teams of two or three within their village, ideally covering 30–40 children under two per team. In many parishes (geographical areas

similar to districts), growth promoters collaborate with their parish peers to conduct the monthly sessions. The growth promoters are supported by two trainers/supervisors from the sub-county who collaborate with district-level trainers. The initial training of growth promoters is a six-day, skill-oriented training. A cascade training approach is used: At the district level, national trainers train a team of district and sub-county personnel who then take responsibility to train growth promoters in selected sub-counties and villages. To supplement the support provided by the sub-county and district level supervisors, a parish coordinator is identified from within the group of community growth promoters and given one additional day of training in basic supervisory skills, data collection, and reporting. These parish supervisors play a major role in collecting and compiling the monthly village summary reports, reviewing them for correctness and submitting them to the sub-county supervisor.

Table 1: Growth Promotion Tool Kit

	Item	Description
1	Weighing Scale	Salter-Type with set of five weighing pants
2	Growth Promotion Handbook	Provides all of the information growth promoters need to implement the program at the village level
3	Child Health Counseling Cards	A set of 16 spiral-bound cards that provide specific messages related to child health and nutrition that are used on an individual basis with mothers and caretakers
4	Village Growth Promotion Register	Notebook designed to easily record and track the growth and immunization status of children on a monthly basis. Contains space for 30 children for 12 monthly sessions
5	Minimum Weight Gain Table	A laminated one-page table showing the minimum expected weight in 1 and 2 months since the previous weighing for children between 1.8 and 14.3 kg
6	Summary Sheets - Growth	A one-page bar graph that summarizes monthly register data showing numbers of children registered, weighed and their growth trends
7	Summary Sheets - Immunization	A one-page bar graph that summarizes monthly register data showing the number of children whose immunization status was checked and the status
8	Referral Sheets	Small sheets that growth promoters fill in and give to mothers of sick children who need additional health care indicating reason for referral
9	Child Health Cards	The standard Uganda Child Health Card that tracks child growth and immunization status
10	T-shirt, Storage Bag, and Basic Stationery	Basic supplies for recognition and to facilitate the work of the promoters

The UPHOLD CBGP program was introduced in 6 of Uganda's 79 districts. The districts were selected for various reasons. In Bugiri, the program was an extension of the limited support UPHOLD provided to 20 villages in 2004. In Luwero, the UPHOLD program was building on and expanding the work in CBGP initiated by BASICS in 15 villages in 2003. In Arua, CBGP was introduced to reinforce the VHTs rolled out in the district with Africa Development Bank (ADB) support. In addition, two of UPHOLD's civil society organization (CSO) child health grantees working in Mbarara[1] and Mayuge had a growth promotion component in their work

[1] These two CSOs are Kaaro Rural Development Organization in Mbarara and IDDA in Mayuge. Nine of the ten sub-counties where Kaaro operates are now located in the new Kiruhura district; one is in Ibanda. For this review Kiruhura and Ibanda were considered as one implementation area, from this point on this district will be referred to as Kiruhura.

plans. They received technical support from UPHOLD for CBGP implementation in these two districts. As of April 2007, UPHOLD had supported the training of more than 1,200 community growth promoters in more than 500 villages in these five districts, serving approximately 15,000 children on a monthly basis.

Table 2: UPHOLD Support for CBGP as of April 2007

District	Number of Sub-Counties	Number of Villages	Number Of Trainers			Number of Promoters	Approximate Training Dates
			District	SC	Total	Total	
Arua	1	48	2	26	28	94	Dec 06-Jan 07
Bugiri	3	130	4	8	12	390	July-Dec 06
Luwero	3	119	7	12	19	329	July-Dec 06
Mayuge	1	83	11	0	11	130	Feb 06
Kiruhura	5	144	4	2	6	288	June-Aug 06
Total	**13**	**524**	**28**	**48**	**76**	**1,231**	

2. Review Methodology

2.1 Objectives

The two main objectives of the CBGP Review were to assess:

- The operation of the program by examining the levels of program coverage and child participation, and promoters' skills in counseling caretakers, and by surveying the opinions of personnel involved in the program;

- The impact of the CBGP program on the coverage of child health actions such as immunization on growth trends according to monthly weight gain data, and on nutritional status based on child weight-for-age data from September 2006 compared to April 2007.

2.2 Study Period

Only one district, Mayuge, had been implementing the CBGP program for a full year by April 2007. In order to involve more districts in the Review, eight months of implementation between September 2006 and April 2007 were chosen as the Review timeframe. The number of villages eligible for the Review based on this criterion was 230 of the 524 villages that had initiated CBGP through UPHOLD.

2.3 Sample Size and Data Collection

The Register Review methodology, earlier developed for the purpose of evaluating CBGP programs and used before in Uganda by BASICS[2], was adopted for the primary data collection. Five villages were randomly selected in each district from the list of villages that had been implementing CBGP since September 2006. The Arua district was completely excluded from the

[2] BASICS II, Karen van Roekel, Growth Promotion Register Review, Uganda, 2003.

Review, since training took place in December 2006 and January 2007. Thus, a total of 20 villages were included in the Review. The number of villages sampled was based on previous experience with CBGP reviews. These reviews have strong quantitative elements, but are not formal evaluations. The aim is to understand what is happening programmatically: the majority of the indicators are related to process and apply to all of the children rather than specific sub-sets of children. Sufficient data were collected to examine outcomes and impact for the whole population but not to be disaggregated by district.

Qualitative data were collected via observations of growth promoter counseling sessions, exit interviews with caretakers, and interviews with key informants involved in the program. For the observations and exit interviews, an additional five villages were selected in each of the four districts based on the availability of a monthly growth promotion session during the village register data collection phase of the Review. Interviews based on semi-structured guides were conducted with one district trainer and two sub-county supervisors in each district, and with the promoters from the villages participating in the Register Review. Informal discussions were also held with three of the four District Health Officers (DHO) to obtain their impressions of the CBGP program as well as their thoughts and ideas regarding the expansion and/or sustainability of the CBGP activities following UPHOLD direct support.

2.4 Data Analysis

The foundation for the analysis of the data collected from the village registers drew on a review of the BASICS-supported Uganda program[3] as well as other reviews of large-scale CBGP programs.[4] These reviews have established a set of standard indicators that are used to track progress and assess the operation of CBGP programs. The indicators include: coverage rate; participation rate; rate of newborn registration; rates of adequate, inadequate, and persistent inadequate growth; and recuperation rate. (See Annex 1 for a detailed description of these indicators.)

The nutrition status of children in the program in September 2006 was compared to the nutrition status of children in the program in April 2007. The weight-for-age data for these two cohorts of children were analyzed with WHO's Anthro 2005 software and Z-scores for all children were calculated using the new WHO 2005 reference standards as well as the 1999 WHO/NCHS reference standard.

The data and information from the observations, exit interviews, and key informant discussions were summarized and analyzed for trends using Excel and SPSS software. Qualitative responses from mothers on issues discussed and agreed on during counseling sessions were coded on relevance for the age and health status of the child on a scale of not, little, or very relevant, and a judgment was made on the level of specificity. (See Annex 2 for a copy of the survey instruments.)

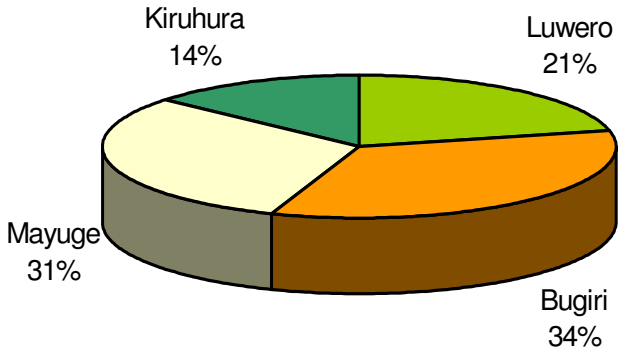
[3] Karen van Roekel, 2003.
[4] BASICS II, AIN Program.

3 Sample Description

3.1 Children in the Register Review

The Register Review included all children under the age of two listed in the registers of the sampled villages over an eight-month period. For the majority of the sampled villages, the eight-month period was from September 2006 to April 2007. In Mayuge district, in four of the five sampled villages, the eight-month register data collected covered the period August 2006 to March 2007 rather than September 2006 to April 2007. Mayuge district was the first to initiate the CBGP program and the first registers they received were completely full by the end of March 2007. Unfortunately, these villages did not receive new registers in advance of April activities. The program continued to function in April; promoters recorded April data in separate notebooks. However, for the purpose of this Review it was decided that for consistency and completeness it was preferable to use the August 2006 to September 2007 data from the official registers for these four villages.

Figure 2: Distribution of Children in the Review by District (N=1249)



Overall, 1249 children were entered into the registers over the eight-month study period, including 427 in Bugiri, 266 in Luwero, 386 in Mayuge, and 170 in Kiruhura district. Two-thirds of the sample came from Bugiri and Mayuge districts (***Figure 2***). Villages in those districts generally have large numbers of children under 2, sometimes exceeding 100. Only 14 percent of the children came from Kiruhura, where all villages are small. The number of children under 2 in a village ranged from 25 to 120, with an average of 50 children per village in a given month (***Table 3***).

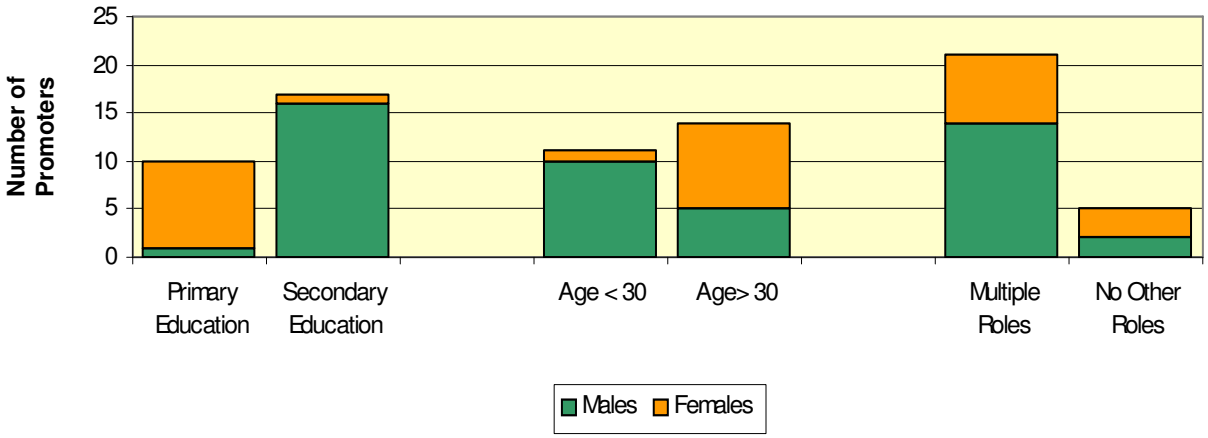
Table 3: Number of Children in Register Review by District and Village

District	Sub-County	Village	Number Children 0-23 Months	District	Sub-County	Village	Number Children 0-23 Months
Bugiri	Bulesa	Nakabaale A	97	**Luwero**	Kamira	Kabunyata	81
		Bulende	60			Namungia	42
		Namiguna A	90			Kakoola	29
	Kapyanga	Buwofu	120			Keera	72
	Namkoma	Matovua	60		Bamunanika	Kangulumira	42
Bugiri Total			**427**	**Luwero Total**			**266**
Kiruhura	Kashongi	Rwozi	30	**Mayuge**	Kigandalo	Nakasuwa	90
		Ekikagate	41			Nawampongo	30
		Orutooma	40			Naigeria	72
		Mooya II	25			Kinawambuzi	134
		Ekikone	34			Nanvunano	60
Kiruhura Total			**170**	**Mayuge Total**			**386**
Total All Districts: 1249							

3.2 Community Volunteers, Trainers and Caretakers Interviewed or Observed

For the observations and exit interviews, a total of 18 villages were visited on the day of their monthly growth promotion session in the four districts; 5 villages each in Bugiri and Mayuge and 4 each in Luwero and Kiruhura. One selected village in Luwero had postponed the session due to a death in the village, and one in Kiruhura could not be reached due to bad weather and terrain. In each village, ten counseling sessions were observed and the caretakers from these sessions were interviewed. In some villages, one growth promoter was observed for ten counseling sessions, while in other villages two counselors were observed for five sessions each. In total, the Review analyzed the results of 180 observations and exit interviews involving 27 different village promoters.

Figure 3: Characteristics of Promoters Observed by Gender



Among the 27 growth promoters observed for the review, 16 (59 percent) were male and 11 (41 percent) were female. This sample is slightly skewed in favor of males compared to all of the promoters trained under UPHOLD, of whom 52 percent were male and 48 percent female. In the sample, male and female promoters differed in their level of education, age, and in the number of other roles they played in the community (***Figure 3***). All except one male promoter had more than a primary education whereas only one female promoter had gone on to secondary school. Female promoters tended to be older than male promoters. Almost all growth promoters played other voluntary roles in the community, mainly as community medicine distributor for home-based management of fever, or as VHT members. Among the male promoters observed, 14 (88 percent) had at least one other role in the community; whereas 8 (73 percent) female promoters played other roles.

4 Program Coverage and Participation Findings

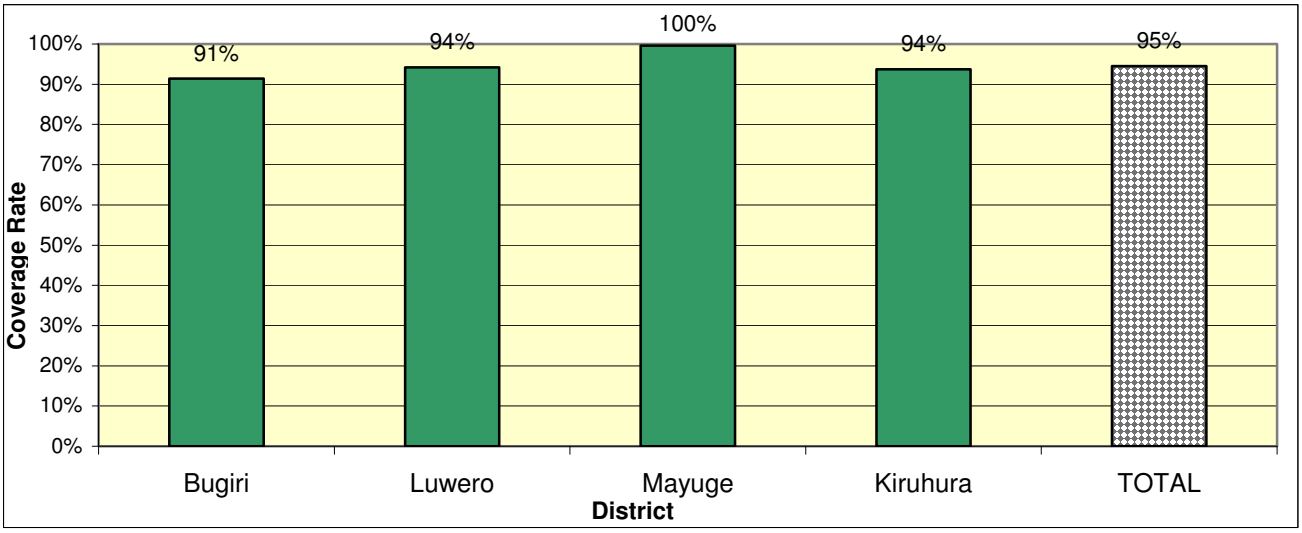
Community-based growth promotion is based on the understanding that children under the age of two grow rapidly; needing to gain as much as a half-kilogram every month for healthy growth. Child growth is a proxy for child health: those who don't grow adequately are at increased risk for malnutrition, which is associated with increased morbidity and mortality. Since a child's health status can change quickly in the first two years of life, growth monitoring of children under the age of two should occur monthly.

4.1 Coverage of Baseline Children

For a CBGP program to effectively prevent malnutrition in a community, all children under the age of two should have the opportunity to participate on a monthly basis. To assess program coverage, the proportion of children who were weighed at least once since the baseline, between August/September 2006 and March/April 2007, was compared to the total number of children registered at baseline. At the start of the CBGP program, each village conducted a house-to-house census and registered all children under age two in the community. Seven of the twenty villages attained the 100 percent coverage benchmark, and only four villages had less than 90 percent coverage, with the lowest reported coverage of 78 percent in a village in Bugiri. The

average program coverage across the four districts was 95 percent, with the highest coverage in Mayuge district (100 percent) and the lowest in Bugiri district (91 percent) (***Figure 4***).

Figure 4: Program Coverage Rate by District



4.2 Coverage of Newborns

Program coverage is not static, as the target population is constantly changing. Children reach two years of age and "age out" of the program and new children are born in the village every month. The expectation is that in any given month, all children under the age of two are included in the register. Registering and enrolling newborn children as soon as possible after birth, preferably by one month of age, is an important element of the CBGP program. Newborn registration was assessed by comparing the proportion of newborn children who were registered during the eight-month study period to the expected number of newborn children in the village over the course of the study period. Expected births for the study period were assumed to be two-thirds of the number of children born in the 12 months preceding the baseline.

On average, it was found that about half of the expected children across the 20 communities born between September 2006 and April 2007 entered the program (***Table 4***). Three villages did not register any new children since the baseline (Matovu and Buwofu in Bugiri and Nawampogo in Mayuge). At baseline these villages registered 60, 120, and 30 children, respectively, filling 2, 4, and 1 registers completely. Two other villages did not register any newborn children during the study period (Namiguwa in Bugiri and Nanvunano in Mayuge). Both of these villages had been in the habit of registering new children, but once their registers were full, they suspended that effort.

The villages that did enroll newborns as soon as possible after birth reported a well-functioning home visit system focused primarily on weighing the children. Excluding the five villages that did not enroll any newborn children, the remaining 15 villages covered about 75 percent of the newborns.

Table 4: Expected Compared to Registered Newborn Children

District	Village	Expected Number Newborn Births	Actual Number Newborn Register	% of Expect	District	Village	Expected Number Newborn Births	Actual Number Newborn Register	% of Expect
Bugiri	Nakabaale A	23	23	100%	**Luwero**	Keera	21	23	109%
	Matovu	22	0	0%		Kakoola	7	3	43%
	Bulende	18	8	44%		Namungia	11	10	91%
	Namiguwa	32	0	0%		Kabunyata	17	18	106%
	Buwofu	45	0	0%		Kangulumira	5	10	200%
Bugiri All		**139**	**31**	**22%**	**Luwero All**		**59**	**64**	**108%**
Kiruhura	Rwozi	10	7	70%	**Mayuge**	Nakasuwa	26	12	46%
	Ekikagate	16	10	63%		Nawampongo	9	0	0%
	Orutooma	11	10	91%		Naigeria	24	12	50%
	Mooya II	10	4	40%		Kinawambuzi	38	30	79%
	Ekikone	11	4	36%		Nanvunano	26	0	0%
Kiruhura All		**58**	**35**	**60%**	**Mayuge All**		**123**	**54**	**44%**
Total All Districts: 49% of newborns registered									

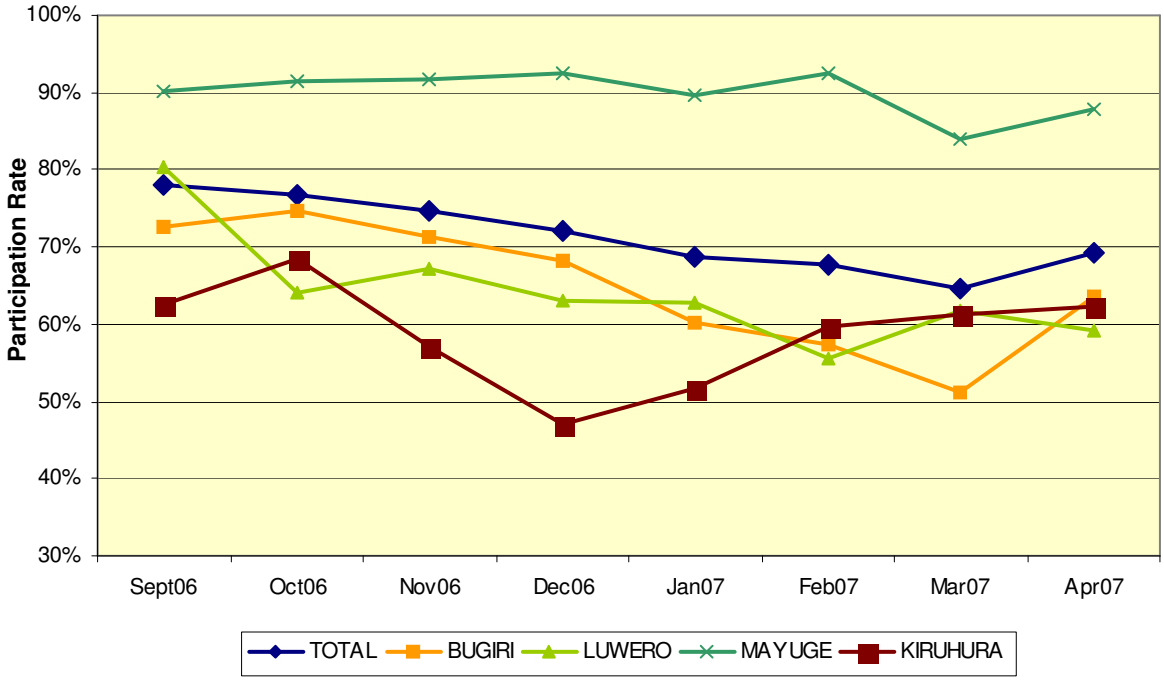
4.3 Participation Rates

Program participation is measured by comparing the number of children weighed in any given month to the total number of children under two years of age in the register for that month. The benchmark for program participation is 80 percent; in any given month at least 80 percent of children registered for the program should be weighed if the program is to be effective.[5] Similarly, any given child should participate at least 80 percent of the time, *i.e.* have his/her growth assessed at least ten out of twelve months.

An overall downward trend in participation was seen between September 2006 and March 2007, with participation rates improving again in April (***Figure 5***). The average participation rate in any given month for the eight-month period covered by the review was 72 percent. Only the Mayuge district attained 80 percent participation, on average, in each of the eight months reviewed. The highest level of participation across all four districts was in September at 78 percent, which was the first monthly session for 10 out of the 20 villages. The lowest was in March at 65 percent, during the planting season when women have a higher agricultural workload. A similar decline in participation rates would be expected in July, which is the main harvesting season.

[5] Marcia Griffiths, personal communication

Figure 5: Rates of Child Participation by District, September 2006–April 2007



Participation at the village level was very good in nearly half of the villages: eight of the twenty villages reached the 80 percent benchmark in at least six of the eight months reviewed. However, six villages never attained even 60 percent participation in any month (***Table 5***).

Table 5: Rates of Child Participation by Village

District	Village	Average (%)	No Months >80%	District	Village	Average %	No Months >80%
Bugiri	Nakabaale A	91	7	**Luwero**	Kabunyata	76	4
	Bulende	32	0		Namungia	52	1
	Namiguwa A	100	8		Kakoola	66	3
	Buwofu	34	0		Keera	45	0
	Matovu A	77	6		Kangulumira	96	8
District Average		**67%**		**District Average**		**67%**	
Kiruhura	Rwozi	56	0	**Mayuge**	Nakasuwa	91	6
	Ekikagate	56	0		Nawampongo	100	8
	Orutooma	45	0		Naigeria	83	5
	Mooya II	51	1		Kinawambuzi	99	8
	Ekikone	88	6		Nanvunano	74	1
District Average		**59%**		**District Average**		**89%**	
All District Average: 72 percent							

4.4 Participation Issues

Obstacles to reaching children under two years of age with the growth promotion program include low attendance at the monthly growth promotion sessions as a result of weather conditions (rain) and peaks in agricultural labor (harvesting and planting seasons), long distance to the weighing site, and lack of interest due to unmet expectations or incorrect perceptions of the program. Home visits or additional monthly weighing sessions have been effective in increasing participation rates in some villages when dates of the regular session conflict with funerals or other community events. In addition, some villages have implemented innovative approaches to increase attendance at monthly weighing sessions by offering incentives for consistent monthly participation (***Box 1***).

Box 1: Using Incentives to Increase Participation

In Mayuge district, the civil society organization Idudi Development Association (IDDA) helped communities implement several innovative approaches to ensuring consistent high attendance at the monthly growth-promotion sessions. Drama shows were created and performed to raise awareness of the importance of growth promotion and other child health services. These performances were targeted at the poor performing parish-level health centers during the months of Child Days in May and November. In addition, IDDA targeted the distribution of ITNs to mothers of children who had attended the growth promotion sessions for four consecutive months, completed their child's immunizations on time, kept their child health card clean, and who were able to repeat messages accurately related to child health. This incentive system raised mothers' interest in the growth promotion sessions and increased attendance.

4.5 Lessons Learned

Community-based growth promotion programs are well established in some communities, and through a few minor adjustments in program operation and supervision support, the potential exists in many other communities for better coverage and more consistent participation. Furthermore, the potential to use the CBGP program as an effective vehicle to reach children and families with other health interventions and support is for the most part untapped. To increase program **c**overage and participation and to expand on the value of the CBGP program:

- Conduct a complete village census at the initiation of the program to ensure that all children under the age of two have the opportunity to participate in the program.
- Support the enrollment of newborn children in growth promotion activities by one month of age.
- Utilize home visits to enroll newborn children early after birth to provide support for newborn and postpartum care and begin monthly weighing at one month of age.
- Develop and /or strengthen the system of replenishment of supplies, particularly registers, as the lack of registers was a major reason that promoters did not register newborns.
- Clarify the register format, as errors in the registers were due to lack of space to enter birth weights in the registers.

- Establish larger teams of promoters in larger villages or identify other ways in the community to facilitate enrolling newborn children early and reaching 80 percent or more of all children under two each month.
- Emphasize the importance of consistent, monthly participation of all children under the age of two, including encouraging the use of home visits to children who do not attend monthly sessions.
- Use community feedback meetings and/or link growth promotion to services that are in high demand, such as the bi-annual deworming, as a means toward increasing coverage and participation.
- Identify other approaches and incentives based on individual community circumstances to ensure that at least 80 percent of children participate every month.

5 Growth Trend Findings

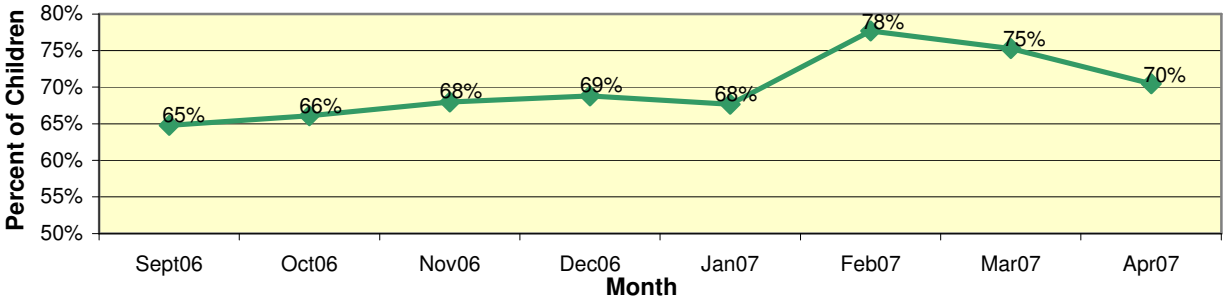
5.1 Background

When children are weighed on a regular basis, the focus is on the adequacy of their weight gain month to month rather than on nutrition status. An effective CBGP program equips community volunteers with the capacity to assess the adequacy of a child's weight gain month to month and the tools to provide guidance to caretakers based on that child's growth and health status. A reference tool (table of minimum expected weight gain) provides the expected weight for a child based on the child's weight in the previous month or two months. The promoter compares the actual weight to the expected weight to determine if the child is growing well or is faltering in growth. The rate of adequate growth in the community is the proportion of children with adequate growth in any given month compared to the total number of children whose growth trend could be established (weighed in the current month as well as the previous month or two months prior). The inverse, the total number of children in that month who did not gain adequate weight compared to all children whose growth trend could be established in that month, is the rate of inadequate growth.

5.2 Rates of Adequate Growth

In any given month, about two-thirds of the children in all four districts had gained adequate weight (***Figure 6***). This does not mean that the same children were growing well and gaining each month but rather that on average, in each month about one-third of children in the overall population reviewed were not growing well. The proportion of children growing well varied somewhat by the time of year: in February and March, only about 25 percent of children were not growing adequately. There was a five percent increase in the proportion of children with adequate growth from the beginning of the review period in September 2006 to the end in April 2007, from 65 to 70 percent.

Figure 6: Percent of Children with Adequate Growth, September 2006–April 2007 (Average for all 4 districts)



The rates of adequate growth vary by district and village with much lower rates in Kiruhura (58 percent) and Luwero (64 percent) districts compared to Bugiri (71 percent) and Mayuge (74 percent) (***Table 6***). Kiruhura district, which had the lowest participation rates (59 percent), also had the lowest proportion of children with adequate growth, whereas Mayuge district, which had the highest participation rates (89 percent), reported the highest adequate growth rates (74 percent). Within the districts, the range in proportion of children with adequate growth is uniformly low in Kiruhura; all villages are 58 percent or below. The other districts show more variability.

Table 6: Rates of Adequate Growth by Village and District, September 2006–April 2007

District	Village	Low %	Ave-rage %	High %	District	Village	Low %	Ave-rage %	High %
Bugiri	Nakabaale A	40	62	82	**Luwero**	Kabunyata	41	58	76
	Bulende	0*	48	92		Namungia	35	58	83
	Namiguna A	63	85	98		Kakoola	56*	68	88
	Buwofu	38	54	69		Keera	43	59	72
	Matovua	52	71	91		Kangulumira	57	74	85
Bugiri All			**71%**		**Luwero All**			**64%**	
Kiruhura	Rwozi	41	58	91	**Mayuge**	Nakasuwa	45	64	75
	Ekikagate	24	55	100		Nawampongo	79	95	100
	Orutooma	25*	51	93		Naigeria	49	63	72
	Mooya II	0*	38	64		Kinawambuzi	49	69	81
	Ekikone	22	52	83		Nanvunano	70	76	84
Kiruhura All			**58%**		**Mayuge All**			**74%**	
Total All Districts: 70 percent									

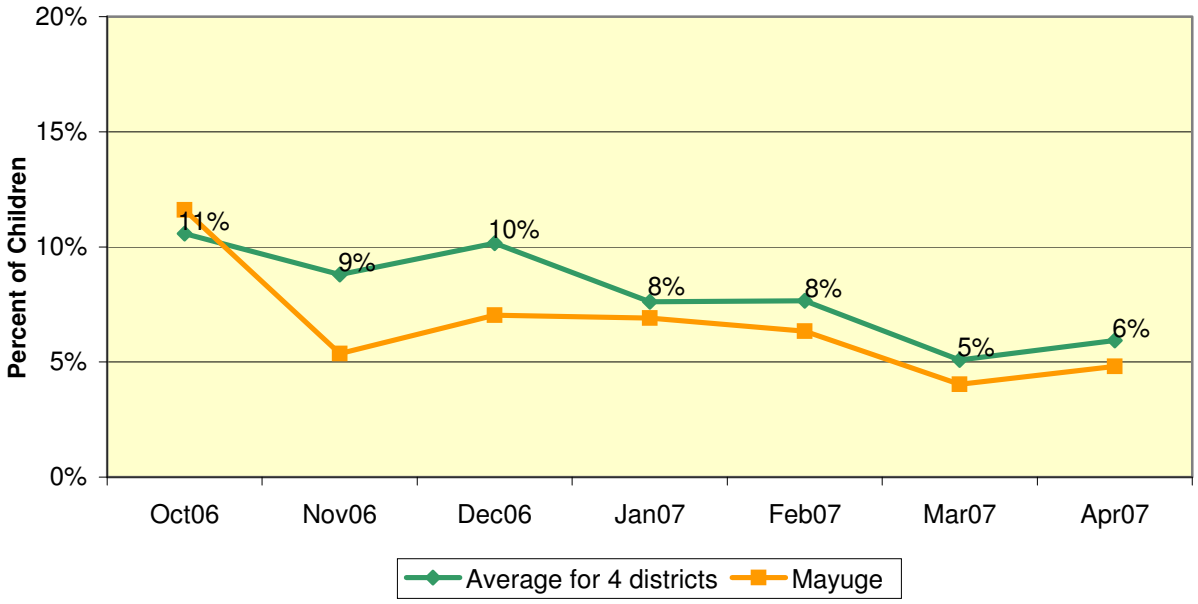
* Includes fewer than 10 children

5.3 Persistent Inadequate Growth

A child is particularly at risk if he or she has not gained adequate weight for two consecutive months. Overall, in any given month, the proportion of children who experienced persistent inadequate growth (faltering growth for two or more consecutive months), out of the total number of children whose growth could be established, is about eight percent. This varies from a high of 11 percent in October 2006 to a low of five percent in March 2007. The trend over the review period shows a five percent decline in the proportion of children with persistent

inadequate growth in any given month from October 2006 (the first month with sufficient data) to April 2007 (***Figure 7***). The number of children in the sample with persistent inadequate growth in any given month in a village or the district is too small to draw conclusions at this level. The lack of data in some communities and districts is due to the irregular participation of children, such that growth trends cannot be determined. In Mayuge, the only district that attained 80 percent participation, the slightly downward trend between October 2006 and April 2007—from 12 percent to 5 percent—may reflect the effectiveness of the program.

Figure 7: Percent of Children with Persistent Inadequate Growth, All Districts



5.4 Recuperation Rates

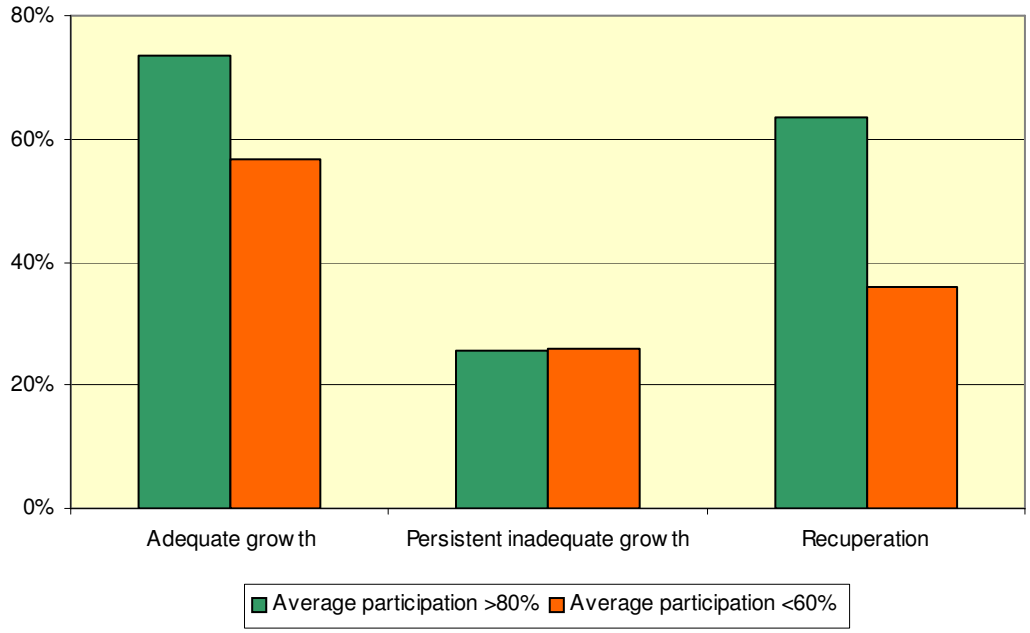
Perhaps the best measure of success of a CBGP program is how many children recuperate following an episode of growth faltering. This rate is calculated by taking the total number of children in a given month whose growth had faltered in the previous month, and measuring the percentage of those children growing adequately. Similar to data on persistent inadequate growth, data were limited due to inconsistent participation, and the results should be interpreted with caution. Overall, the results for the period October 2006 to April 2007 show that for any given month, the recuperation rate is about 48 percent—about half the children who had faltered in growth the previous month recuperated in the subsequent month. Among the other half, 25 percent experienced growth faltering again and the remaining 27 percent was not weighed the month after they had faltered. District recuperation rates on average over the eight months range from 41 to 54 percent, based on very limited data (***Table 7***).

Table 7: Recuperation Rates by District October 2006 to April 2007

District	Low	Average	High	Average no of children	District	Low	Average	High	Average no of children
Bugiri	42%	54%	63%	40	**Luwero**	33%	43%	53%	19
Kiruhura	20%	41%	56%	12	**Mayuge**	37%	50%	61%	33
All Districts	40%	**48%**	54%	104					

5.5 Growth Trends and Program Participation

High program participation rates seem to be linked to improved growth trends (***Figure 8: Program Participation and Growth Trends***



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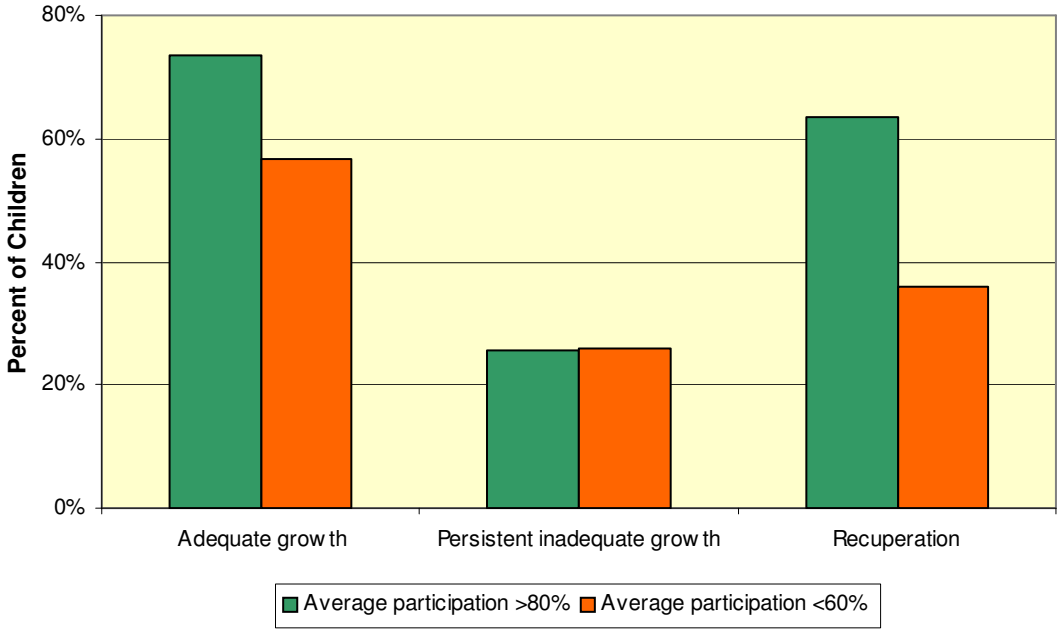
Comparing the growth trends of children in the eight villages with the highest participation (80 percent or above) with the growth trends of children in the eight villages with the lowest participation (less than 60 percent), villages with high participation reported higher adequate growth rates and higher recuperation rates. The average rate of adequate growth in any given month in communities with high participation was 73 percent, compared to 57 percent in communities with poor levels of participation. The impact on children recuperating from growth faltering was even more significant. On average, high participation communities had a recuperation rate of 63 percent in any given month compared to 36 percent in communities with low participation.

Figure 8: Program Participation and Growth Trends



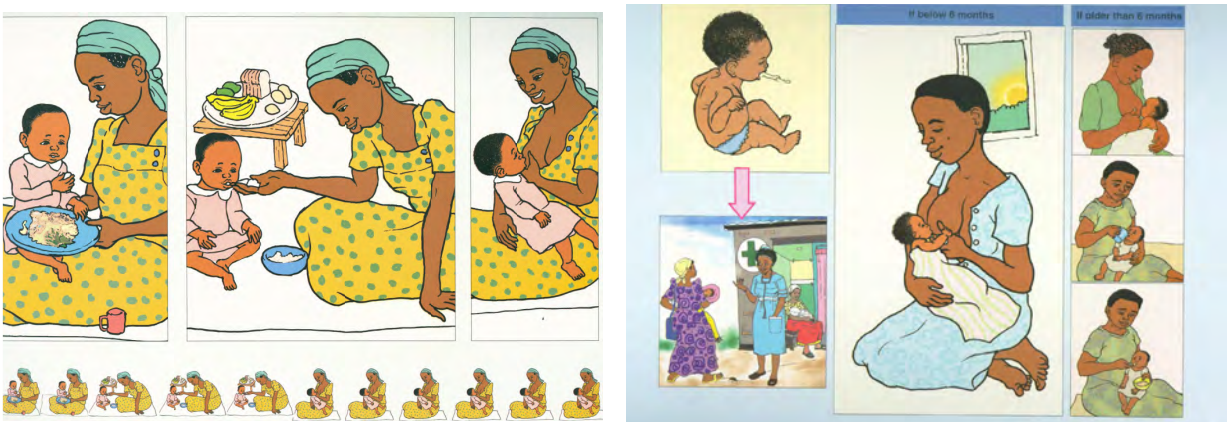
5.6 Lessons Learned

The information on growth trends shows that a significant proportion of children under the age of two experience growth faltering in any given month, and about 10 percent of children experience persistent inadequate weight gain for two months or more. Within a relatively short time, the CBGP program had a positive impact on the overall proportion of children in any given month that experienced faltering growth. Communities with better participation achieved better growth trend results for children. Recuperation rates are particularly sensitive to consistent participation in the program: Communities that successfully reached children on a monthly basis saw more recuperation from growth faltering and better growth trends overall. Ensuring high participation, therefore, is an important factor in preventing growth faltering in children. To achieve the most beneficial impact on growth trends promoters should:

- Ensure that all children and caretakers are reached on a monthly basis to prevent growth faltering and improve recuperation when growth faltering occurs.
- Pay particular attention to children who have experienced growth faltering, especially those with persistent inadequate growth: seek out these children and caretakers to ensure that they participate regularly in the program.

6 Growth Promoters' Counseling Skills Findings

6.1 Counseling Process and Tools



Counseling cards on feeding and sick child care

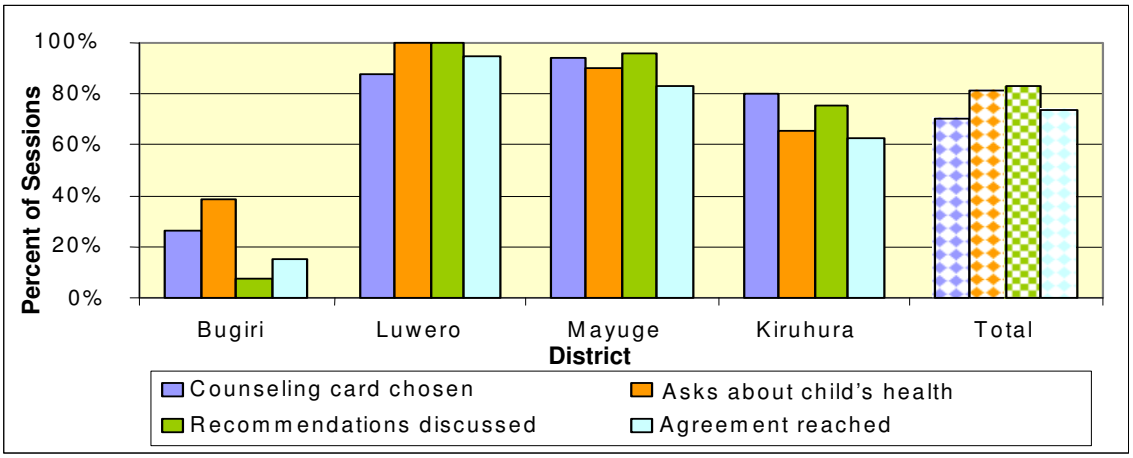
Overall, promoters across all four districts had access to and utilized the tools—a set of counseling cards in local language—to provide counseling advice to caretakers on an individual basis during the monthly growth promotion sessions. Growth promoters were trained in a set of procedures to follow when conducting counseling with caretakers (***Table 8***).

Table 8: Expected Process for Growth Promoters' Counseling Sessions

List of Counseling Procedures			
1	Asks if Child Gained Weight	8	Discusses Recommendations
2	Uses the Child Health Card	9	Uses Pictures in Discussion
3	Asks about the Child's Health	10	Involves Mother in Discussion
4	Chooses Counseling Card	11	Reaches an Agreement with Mother
5	Asks Questions Listed on the Card	12	Asks Mother to Repeat Agreement
6	Listens to Mother's Responses	13	Informs Mother When to Return
7	Praises Mother for Things Well Done		

Some of the key counseling procedures appear to be more commonly followed than others. Overall, growth promoters praised the mothers for things well done 88 percent of the time and discussed the recommendations listed on the counseling card 83 percent of the time. Less frequently, only 59 percent of the time, they asked the questions listed on the card. The variation among districts in adhering to the counseling process was significant: Bugiri[6] was observed using counseling cards 26 percent of the time, compared to the average across all districts of 72 percent (***Figure 9***).

Figure 9: Growth Promoter Counseling Procedures Performance



Based on the observations, the performance of promoters was rated on a scale of 1 to 13 according to how well they followed the expected counseling procedures. Overall, the promoters achieved a rating of 7.6 out of 13. This varied considerably by district: Bugiri achieved a performance rating of 2.2; Kiruhura, 8.4; Mayuge, 9.3; and Luwero, 11.0. Both Luwero and Mayuge have had more experience in CBGP—Luwero through the BASICS project, and Mayuge as the first district to initiate the UPHOLD program. The age of the promoter does not appear to affect performance. However, promoters with more than a primary education did a better job following the process, scoring on average 8.1 compared to promoters with only a primary education that scored 4.9. Since male promoters are more educated than the female

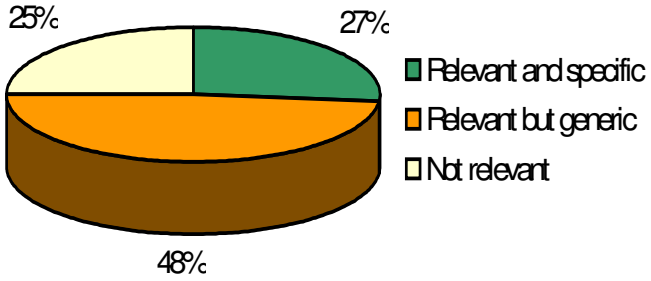
[6] The reason why Bugiri's counseling practices were so different from the other districts is unclear. However, we noted that district-level support supervision was weaker compared to the other districts. Also, the initial, introduction of the CBGP activities in 2004 was done without the full set of training and implementation materials which may have affected the district commitment to the subsequent program training and follow-up.

promoters, this difference is also apparent when comparing males to females: males scored 8.6 compared to 5.2 for females. Finally, promoters that play other roles in the village performed better than those who didn't play other roles, and the more roles played, the better the performance. Those who didn't play any other role scored 3.9, those with one other role scored 7.5 and promoters who had more than one other role scored 9.5.

6.2 Nutrition Messages

In the overwhelming majority of counseling sessions observed, mothers were given messages that were relevant to the age and health status of the child (***Figure 10***). However, these messages were often generic, providing general guidance on feeding, rather than more specific, tailored guidance based on the particular circumstances of each child and family situation. The exception, in some cases, was the provision of more specific guidance on the frequency of breastfeeding and support for continuing exclusive breastfeeding for children up to six months of age. Some promoters also provided more specific messages on mixing and mashing different food types together to improve complementary feeding. Over half of the mothers interviewed (52 percent) said that they had learned something new during the counseling session (***Figure 11***).

Figure 10: Relevance and Specificity of Topics Discussed during Counseling Sessions



Box 2: Counseling Improves Feeding Practices

A mother of a two-month old child in Mayuge had started giving the child tea and milk. She was advised by her neighbor, who had been attending growth promotion sessions, not to do this, but rather to only breastfeed. The mother sought confirmation from the growth promoter who explained to her that the more frequently she lets the baby drink from her breast, the more milk she will produce, and that, indeed, she would be able to exclusively breastfeed the baby for the first six months. The mom agreed to try this.

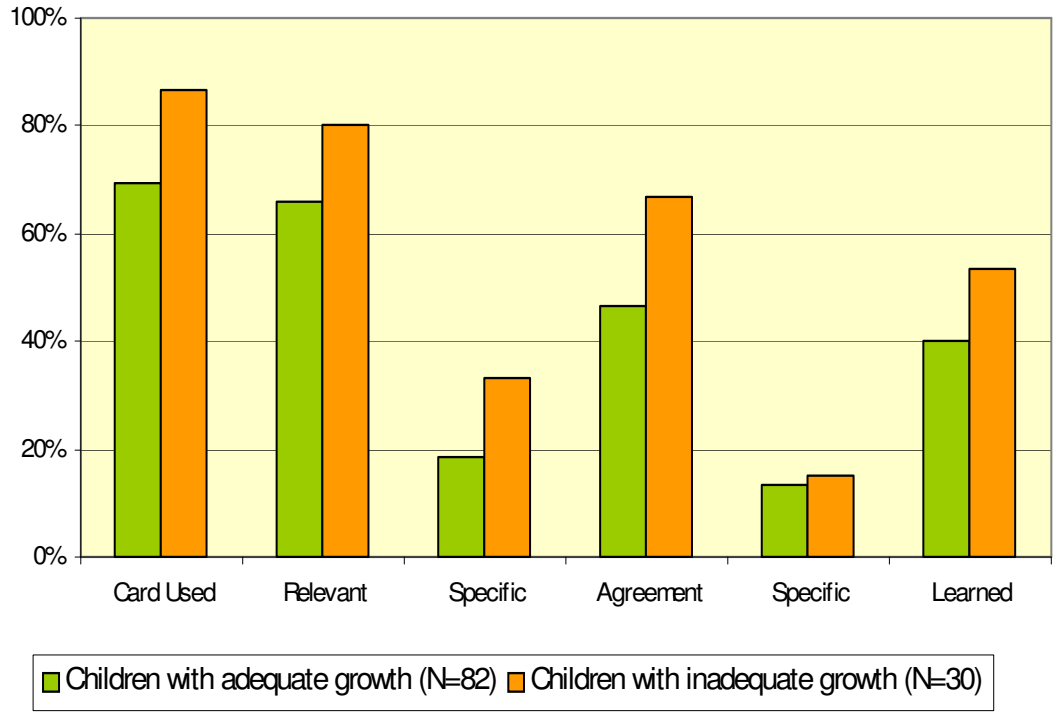
A mother of a seven-month old boy in Kiruhura who had begun to falter in growth was advised to start giving her child supplementary foods in addition to continuing to breastfeed. The mother learned how to mash and mix locally available foods like beans and greens that she had never thought of giving to her child. The mother was excited to learn that she was able to feed her child well with the foods she had available in her home.

The observations showed that about half (52 percent) of the counseling sessions concluded in an agreement between the mother and growth promoter, and exit interviews with mothers confirmed this. Furthermore, mothers were able to state what they had agreed upon with the growth promoter. However, only 8 percent of these agreements were classified as specific; the majority was general advice such as to continue exclusively breastfeeding the child.

Growth promoters appear to give more attention to children who were faltering

in growth than to those who were growing well. The counseling sessions with children who were not growing well were more likely to be conducted using a counseling card, to be relevant and specific, and to reach a specific agreement. Mothers of these children also affirmed more often that they had learned something new in the session.

Figure 11: Improved Counseling for Children with Inadequate Growth



6.3 Referral

Growth promoters regularly identify and refer sick children to the health unit. The major reasons for referral are children with persistent malaria (*i.e.* not responding to Homapack), diarrhea, inadequate weight gain for two or more months, and children who are due for immunization. At sub-county, district, and national levels, health professionals confirmed that CBGP had a positive impact on early healthcare-seeking behavior. Whereas growth promoters universally use the referral card (described in ***Table 1***), the tear-off section is rarely filled in by the health center and returned to the mother to facilitate follow up with the promoter. Health Center staff may not be aware of the expectation to fill in and return the tear-off section of the referral sheet to the mother. Some health centers, particularly in Mayuge district, provide priority care to mothers who come with a referral card: they do not have to line up, but rather can go straight to the health worker. This serves as an incentive for mothers to go through the growth promoter when seeking health care. Health center staff may need additional training on the CBGP program to understand their role in bridging the gap between the health center and the community.

6.4 Lessons Learned

Growth promoters vary in their capacity to use the counseling tools and procedures to provide guidance to caretakers during growth promotion sessions. Promoters who play other health roles and those with more than a primary education appear to have greater capacity in the counseling procedures. Mothers all agreed that it was good for them to come and bring their children to the growth promotion session. Knowing whether the child was growing well (had gained adequate weight) was the major reason given for participating; very few mentioned the advice and support they received in the counseling session. Most growth promoters were only able to provide general guidance on feeding and care of children rather than specific, tailored messages for each individual child and caretaker. Promoters focused extra attention on the advice and guidance that they provided to caretakers of children who had not gained adequate weight. CBGP also positively influences the healthcare-seeking behavior and with some more improvements can play a significant role to bridge the gap between the health center and the community. To continue to build on the potential for counseling to better support mothers and other caretakers in meeting the health and nutrition needs of children, promoters should be supported to:

- Discuss issues related to newborn and postpartum care during the first visits, and to encourage the mothers to bring their children to the growth promotion session when the child is one month old for the first weighing.
- Increase their counseling capacity by building on experience, taking advantage of support supervision mechanisms, and receiving additional training.
- Learn to take into account other factors affecting the growth trend of individual children—for example, recent illness, change in family status—to be able to provide more tailored counseling and advice to caretakers.
- Expand on messages provided beyond those related to routine feeding, to include those related to feeding during or after illness, and other health issues, such as prevention and treatment of malaria and immunization, as well as the care and nutrition of the lactating mother.
- Reinforce the linkages between the health sector and the village growth promoters by providing additional orientation and follow-up through support supervision meetings.

7 Local Support for CBGP

7.1 Growth Promoters

Most communities were successful in identifying volunteers to play the role of growth promoter. Once promoters were identified, they were overwhelmingly committed to their role in the program. Eighteen out of twenty promoters said they liked being growth promoters, while six out of twenty said it was difficult. The promoters particularly liked being known and respected in the community, the high quality tools and materials, gaining knowledge and skills related to child health and care, and effective collaboration with parish colleagues and supervisors. The challenges mentioned mainly related to social mobilization of communities and home visit follow ups without means of transport, and, in some instances, collaboration with the local council executives. All but one confirmed they would continue to work as growth promoters, although a few suggested that umbrellas, gumboots, and bicycles would be helpful.

7.2 Community Involvement and Action

Community feedback meetings are not yet fully established. A total of 13 of 20 villages had conducted community feedback meetings, mainly in Mayuge and Luwero. Some villages feel it is better to provide feedback as part of the routine Local Council 1 (LC1) meetings. Community actions that have resulted from these meetings include the organization and distribution of subsidized ITNs from a partner organization and the treatment of a water source and additional families boiling drinking water. Providing general information to the community about the program is still an important element of these meetings. They also help manage perceptions of some community members that the program provides food, medicine, or other commodities.

Other UPHOLD-supported health programs have taken a community-based approach to increase the access to and utilization of services including: community medicine distributors who treat children who present with fever (malaria treatment); volunteers who supervise tuberculosis patients to take their medication; reproductive health workers who promote family planning, distribute condoms, and encourage women to go for antenatal care and deliver at health facilities; and others who support people living with HIV. Often volunteers work on a number of projects. The UPHOLD-supported education work also included a community-based element specifically designed to increase the involvement of the community in education.[7] The CBGP feedback meetings could draw on the Community Involvement in Education (CIE) approach and collaborate with CIE representatives to increase and enhance the community actions aimed at improving child health in the community.

7.3 Support Supervision

Support supervision visits help promoters to correct mistakes that they made in their registers, improve their counseling skills, and motivate them to do their work well. The Bugiri district experienced major issues in support supervision, particularly at the district level, as two out of the three district supervisors were temporarily assigned outside the district and the third had many administrative responsibilities that took priority over providing support supervision. In contrast, in Luwero, where CBGP also is implemented through the local government, a strong district team is in place that provides enthusiastic leadership to the sub-counties. Districts and sub-counties that reported less support supervision and follow up had the most problems with counseling and registration of newborns. The well-performing areas had well-established support supervision mechanisms.

[7] See Community Involvement in Education (CIE), UPHOLD.

Box 3: Sustaining CBGP through the Commitment of Community Leaders

In Luwero, a former vaccinator was trained in growth promotion under the BASICS project and became a parish coordinator. Under his leadership, after BASICS closed in 2003, the parish continued CBGP implementation without external financial and technical support until the UPHOLD program was initiated in July 2006. During the UPHOLD refresher training for the formerly trained growth promoters under BASICS, five out of the six villages in this parish presented clean and complete data for the period January to July 2006. This parish coordinator was promoted to sub-county coordinator and his sub-county is the highest performing in the district. This CBGP program was sustained, and has become a model program, in large part due to the commitment of this supervisor. His dedication is a major motivating factor for the growth promoters in his area.

7.4 Lessons Learned

The spirit of voluntarism is alive and well in Uganda. Many of the motivating factors mentioned by the growth promoters are non-material. Growth promoters almost universally expressed their ongoing commitment to the program. Most said that they would continue to be a promoter for life. Therefore, commitment of growth promoters is not a major obstacle to program sustainability. Community involvement in the CBGP program can produce community action to address child health needs. In one area where CBGP was initiated several years prior to UPHOLD support, the village has taken specific actions to address factors affecting the growth of children. Going forward it will be important to:

- Ensure that growth promoters receive the supervision support and other means to validate their role in the village and help motivate them in their work;
- Guarantee that growth promoters receive complete, high-quality toolkits that support them in their voluntary roles;
- Strengthen the role of the DHT to make sure that the leadership and coordination is in place to sustain the program and ensure its effectiveness.
- Encourage and build the skills of the growth promoters to conduct community feedback meetings that effectively raise community understanding and interest in CBGP and provide a platform to identify and implement supportive community actions.

8 Potential for Impact on Child Health

The overall measure of success of a CBGP program is an improvement in nutrition status in the community. This review collected weight-for-age data for all children in the village registers under the age of two who were weighed in September 2006 and again in April 2007. This is a cross-sectional, self-selected sample, as children who are over the age of two moved out of the program and newborn children entered the program over this period, although not at the expected rate, as some communities did not register newborns (see section 4.2). The weight-for-age data were entered into WHO Anthro software 2005 and nutrition status of the two cohorts compared to both the 2005 WHO and the 1999 WHO/NCHS reference standards. Only children under 24

months were included in the analysis. The new cut-offs recommended by WHO for data exclusion were used, and no children were excluded as none fell outside the below –6 or above +5 weight-for-age.[8]

8.1 Description of the Children in Nutrition Status Analysis

The number of children weighed in September 2006 and April 2007 declined over the eight month period by about 10 percent, from 748 in September to 680 in April (***Table 9***). This is partly due to the lack of registration of newborn children as well as the slight decline in monthly attendance from 78 to 70 percent between September and April. Bugiri district, which had three villages that did not enroll newborns, comprised 34 percent of the endline sample compared to 38 percent at baseline. Kirihura district made up 10 percent of the baseline and 13 percent of the endline while the other two districts remained virtually unchanged.

Table 9: Number of Children in the Nutrition Analysis by Sex, Age and District

	Baseline August/Sept 2006		Endline March/April 2007			Baseline August/Sept 2006		Endline March/April 2007	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Males	389	52%	340	50%	Bugiri	285	38%	228	34%
Females	359	48%	340	50%	Kiruhura	72	10%	90	13%
0-11 months	416	56%	300	44%	Luwero	138	18%	134	18%
12-23 months	332	44%	380	56%	Mayuge	253	34%	289	35%
Total						**748**		**680**	

Both the baseline and endline populations had a relatively equal proportion of males and females. The biggest difference in the two cohorts is the shift to an older population at the endline compared to the baseline. At baseline, 56 percent of registered children were 0–11 months old and 44 percent were 12–23 months old, while 8 months later 44 percent of registered children were 0–11 months old and 56 percent were 12–23 months old. The mean age for the baseline is 11.29 months compared to 12.80 months in the endline. The failure of some villages to register newborns biases the results of the nutrition analysis as younger children tend to have better nutrition status than older children. Therefore, all things being equal, the endline population would be more likely to have a higher proportion of malnourished children compared to the baseline population, based on the age distribution alone.

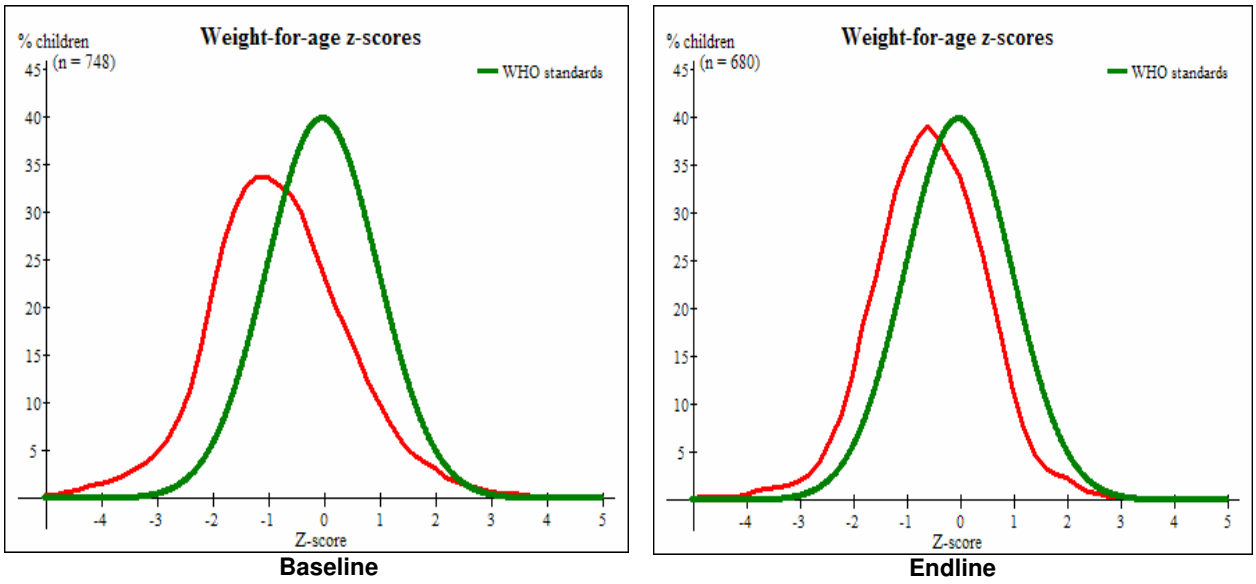
8.2 Weight-for-Age Results

Over the eight-month review period from the baseline of September 2006 (on the left below) to the endline of April 2007 (on the right below) weight-for-age Z-scores of children improved as shown below (***Figure 12***). These distributions show that over the eight-month period there is a shift in the population (shown by the red line) toward the 2005 WHO standard (in green). More specifically, the mean weight-for-age z-score improved from -0.7935 to -0.5549 for the study population as a whole that includes both undernourished and well-nourished children.

[8] www.who.int

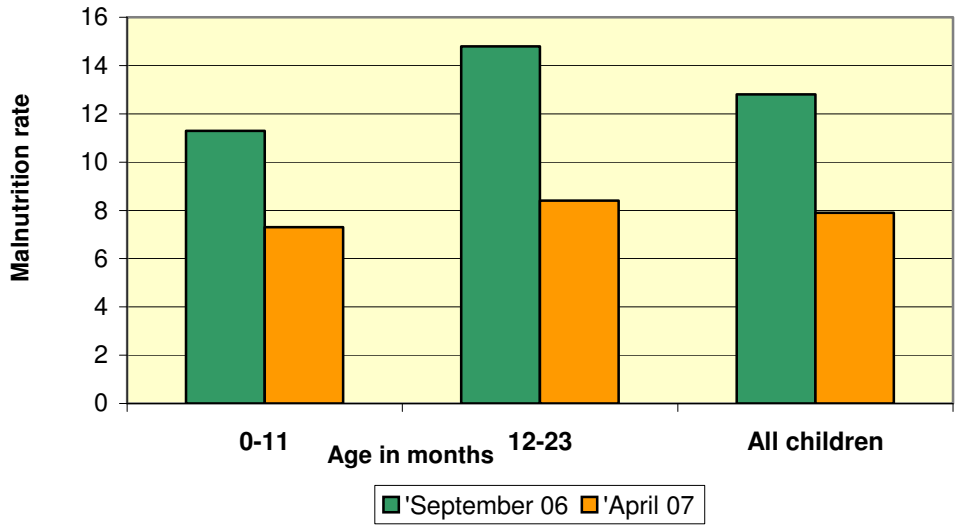
The proportion of children who were malnourished children declined from 12.8 to 7.9 percent (as defined as those with -2 z-scores or below). This reflects a 38 percent change/improvement in malnutrition over the eight month period.

Figure 12: Weight-for Age Distributions at Baseline and Endline, WHO 2005 Standard



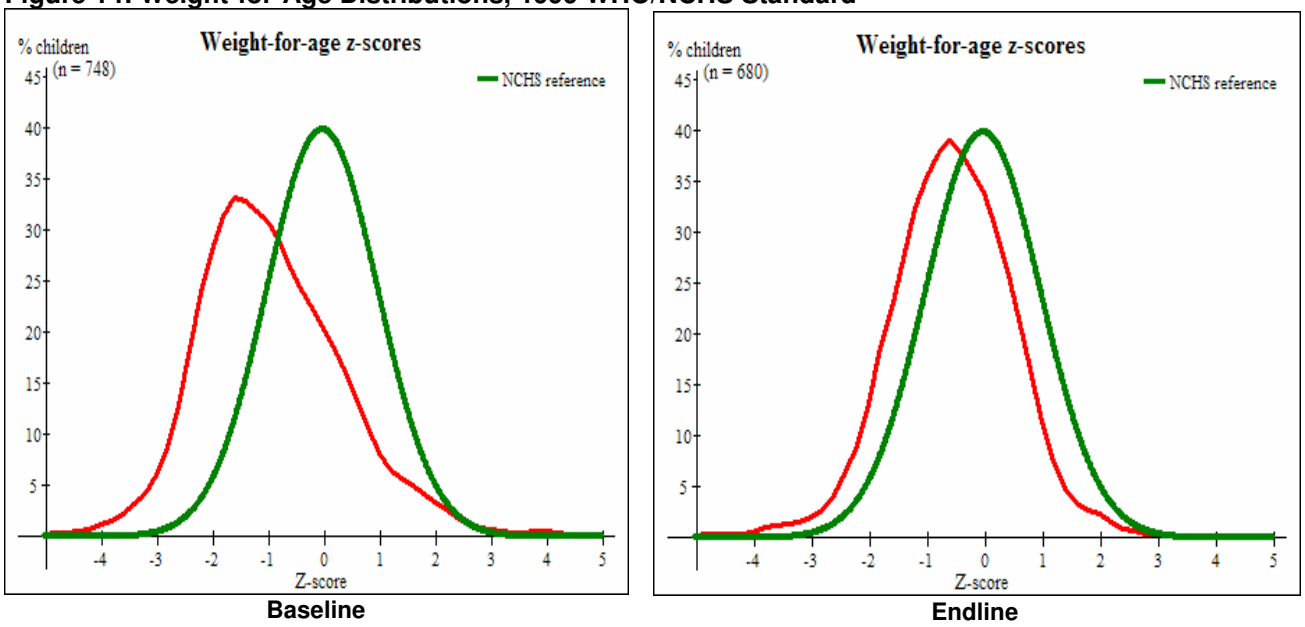
Improvement is evident in both age groups. Malnutrition decreased from 11.3 to 7.3 percent for children under 12 months and from 14.8 to 8.4 percent for children 12–24 months, a 35 and 43 percent change/improvement in nutrition status, respectively (***Figure 13***). The sample sizes are too small to be statistically significant when the data are disaggregated by district. However, the trend in improvement in malnutrition is apparent across all the districts.

Figure 13: Change in Nutrition Status (%< -2SD) from September 2006 to April 2007



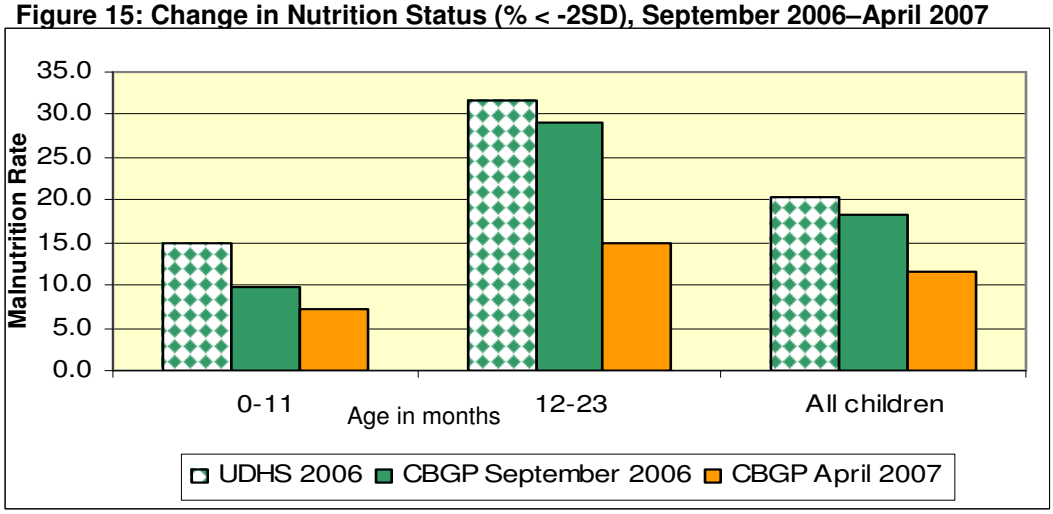
The weight-for-age data were also compared to the WHO/NCHS 1999 reference population since this standard was used for the Uganda DHS 2006. The same positive trend is apparent from this analysis as well, and the decline in malnutrition significant.

Figure 14: Weight-for-Age Distributions, 1999 WHO/NCHS Standard



Using this standard, malnutrition declines from 18.3 percent at baseline to 11.6 percent eight months later. This reflects a 37 percent improvement in malnutrition. The biggest improvement is seen in children 12–23 months: in September, 29 percent of children 0-23 months of age were malnourished (less than -2 Z-scores) compared to 15 percent in April. For children 0-11 months the improvement in malnutrition was from 9.8 in September to 7.3 percent in April. The proportion of malnourished children at baseline is slightly lower than the UDHS average of 20.4 percent, perhaps explained by the fact that the Review did not include any districts in the north where the highest rates of malnutrition are found.

Figure 15: Change in Nutrition Status (% < -2SD), September 2006–April 2007



8.3 Impact on Immunization

During each of the monthly weighing sessions, growth promoters check the immunization status of each child under one and determine whether or not the child is due for immunization. If due, the child is referred to the nearest health center or outreach post to be vaccinated. For 91 out of the 130 children (70 percent) for whom this process was checked at the exit interview, it had been done correctly. Health center staff and national, district, and sub-county health professionals claim that immunization coverage has improved as a result of the CBGP activities. This could not be confirmed since official immunization data are incomplete at the community level. Health managers in several districts suggested consolidating the integration of immunization services with growth promotion by ensuring that a vaccinator be present during each of the village growth promotion sessions. This would be in addition to the comprehensive monthly outreach services provided at parish level.

8.4 Lessons Learned

CBGP activities seem to be making a difference in child growth and nutrition status. After an implementation period of just eight months, a significant decline in malnutrition rates (low weight-for-age) was seen. The decline from September 2006 to April 2007 could not be explained by seasonal effects, as April is generally more food-insecure then September. April also has higher prevalence of malaria and diarrhea linked to the seasonal rains. Self-selection bias may explain part of the decline; however overall, this Review provides evidence that the improvement in nutrition is associated with the CBGP program. Regular weighing of children under two has drawn attention to the growth and well-being of children, made mothers more aware of feeding practices and, in some cases, supported mothers in changing feeding behaviors. The majority of mothers received relevant messages related to preventive and curative practices that are known to have an impact on child survival. For ongoing program success it will be important to:

- Sustain the monthly growth promotion activities while ensuring high, consistent child participation.
- Continue reinforcing growth promoters' counseling and negotiation skills to improve their capacity to promote and support effective child survival interventions.
- Consolidate the integration of immunization services during the monthly growth promotion sessions.

9 Program Costs

9.1 Activity-Based Cost Centers

The costs of the CBGP program were estimated through an activity-based costing approach.[9] The major activities required for the start-up and ongoing implementation of CBGP are listed below.

[9] John Fiedler, A Cost Analysis of the Honduras Community-Based Integrated Child Care Program, World Bank, May 2003.

Table 10: Activity-Based Cost Centers of the UPHOLD CBGP Program

Start-Up Activities 1–6	
1	**District Orientation and Planning**
	Start-up, one-day meeting at the district level involving 2 national level facilitators, 10 district health team staff and 3 sub-county representatives (one per sub-county of focus).
2	**Training of District and Sub-county Trainers**
	The major training of trainers is a six-day, residential training involving 3 national facilitators, 5 district trainees, 2 health sub-district trainees and 6 sub-county trainees.
3	**Sub-County Orientation and Planning**
	One-day sub-county level meeting with 1 district facilitator, 2 sub-county facilitators, 10 sub-county representatives, and 6 parish representatives (one per parish). Following this meeting, the parish representatives introduce CBGP in the villages and identify the growth promoters. One meeting per sub-county.
4	**Training of Growth Promoters and Health Center Staff**
	The six-day initial training for community growth promoters facilitated by 2 district and 2 sub-county trainers. Training is done in groups of 30 promoters from 10 villages, and includes 2 health unit staff. An average of 15 sessions are needed to cover 3 sub counties.
5	**Orientation for Parish Coordinators**
	One-day meeting at the district level for parish coordinators. Meeting is facilitated by district and sub-county trainers and involves parish coordinators, one from each parish (estimated 6 per sub-county) and two health center staff. One meeting per district.
6	**Monthly Growth Promotion Sessions in the Community**
	The only cost included for this activity is the cost of the Village Toolkit which includes everything needed for a team of 3 promoters. No lunch or monthly allowance has been given to the growth promoters.
On-Going Implementation: Activities 7–10	
7	**Supervisory Visits**
	District Supervisor to Sub-County: District trainers visit each of the three sub-counties once in two months for the first 6 months, followed by quarterly visits (5 visits per sub-county = 15 visits per year).
	Sub-County Supervisor to Parish: Sub-county trainers visit each parish under his/her responsibility once in two months for the first 6 months, followed by quarterly visits (5 visits per parish = 100 visits per year).
	Parish Supervisors to the Village: Parish supervisors coordinate and support the villages under her/his responsibility and collect the village data on a monthly basis. S/he receives a monthly transport allowance for this.
8	**Quarterly Review Meetings**
	Meetings held with promoters, trainers/supervisors and health staff on a quarterly basis to review data and provide continuous training. Sixty meetings per year – 10 communities per meeting with 30 growth promoters.
9	**Re-training to Replace Promoters and/or Refresh Skills:**
	Estimated need for two refresher or replenishment training per district for 30 promoters each. Same as the original growth promoter training (activity 4 above).
10	**Replenishment of consumables**
	Includes new kits for new promoters and replenishment of registers, etc. for continuing promoters.

These ten distinct activities form the foundation for the analysis of the costs of the UPHOLD CBGP program. This cost analysis is based primarily on UPHOLD support for these activities and the materials required. In some cases, these are projected costs since the UPHOLD program has not been functioning on a large scale for an entire year. Personnel costs, with the exception of the facilitation allowance for the training facilitators, are not included in this assessment. Salaries and/or time of technical assistants, Ministry of Health and Local Government staff, growth promoters, and community members, which could be substantial, are not included in this estimate. Some of these costs would be important to evaluate when considering the expansion of this program.

9.2 Cost per Three Sub-Counties

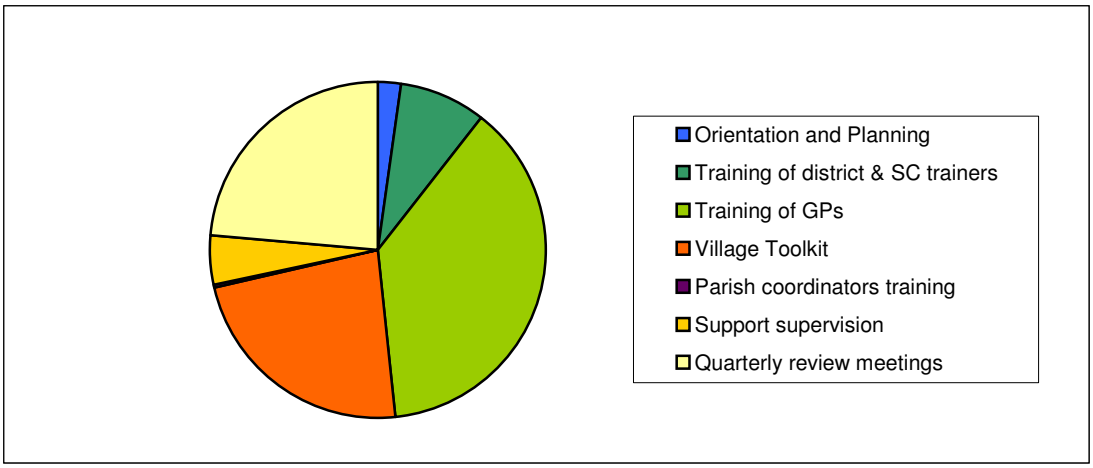
The number of sub-counties, parishes, and villages as well as children under two years of age per village varies across the 79 districts in Uganda. Based on the UPHOLD implementation experience, for this analysis it is assumed that the program would be introduced in increments of 3 sub-counties per district, with an average of 20 parishes and 150 villages per district. The total cost for this "unit of implementation" is presented below, by activity, for the first year and subsequent years.

Table 11: Activity Costs and Projections (in Uganda Shillings except where noted)

	Cost per Activity	Cost per Implementation Unit	Cost per Sub-County	Cost per Village	Cost per village (in US$)*
District orientation and planning meeting (1)	1,024,000	1,024,000	341,000	6,800	3.89
Training of district and sub-county trainers (1)	8,010,000	8,010,000	2,670,000	53,400	30.51
Sub-county sensitization meetings (3)	409,000	1,227,000	409,000	8,200	4.69
Training of community growth promoters (15)	2,490,000	37,350,000	12,450,000	249,000	142.29
Monthly growth promotion sessions at village level (150)	150,000	22,500,000	7,500,000	150,000	85.71
Parish coordinator training (1)	329,000	329,000	110,000	2,200	1.26
Sub-Total Start-up Cost for Year One		**70,440,000**	**23,480,000**	**469,600**	**268.34**
First year intensive support supervision		4,570,000	1,523,000	30,500	17.43
Quarterly review meetings for continuous training (60)	389,000	23,340,000	7,780,000	135,600	77.49
Total cost for the first year of implementation		**98,350,000**	**32,800,000**	**655,700**	**374.69**
Support supervision subsequent years		3,896,000	1,298,500	26,000	14.86
Bi-annual review meetings (30)	389,000	11,670,000	3,390,000	77,800	44.46
Training to replace 10% drop-out (2)	2,490,000	4,980,000	1,660,000	33,200	18.97
Replenishing supplies (150)	29,000	4,350,000	1,450,000	29,000	16.57
Total recurrent cost		**24,896,000**	**8,300,000**	**166,000**	**94.86**

*1750 Ugandan Shillings = US $1.00

Figure 16: Distribution of Start-Up Costs



The major start-up costs include the initial training and equipping of community growth promoters, together accounting for 61 percent of the cost in the first year. Continuous training to reinforce knowledge and skills of community growth promoters through quarterly and later bi-annual review meetings is a major component of the recurrent cost.

Based on these assumptions and UPHOLD cost estimates, the analysis shows that the estimated cost to start up the CBGP program in three sub-counties in one implementation unit as defined (activities 1-6) is Uganda Shillings 70 million (US$40,251). Including the supervision and support costs of the program (activities 7-8) brings the total cost to just over Uganda Shillings 98 million (US$ 56,200), which is US$375 per village. The cost per child for the start-up year of the program, assuming 50 children under two years of age pass through the CBGP per village, per year is US$7.50. In subsequent years, the recurrent costs to maintain the program are estimated at Uganda Shillings 25 million (US$14,226) for three sub-counties, which is about US$95 per village and $1.90 per child under two.

Although the start-up costs may appear high, the initial investment in the quality training and supplies can be expected to yield a return over a long period of time. After the first year, the costs are lower, and they would be expected to continue to drop further as communities become more experienced and are able to sustain the activities with minimal support. The fact that this Review shows an impact on child nutrition in less than one year suggests that the initial investment in a high-quality program reaps benefits immediately as well as in the future.

10 Conclusions and Lessons Learned

The UPHOLD CBGP program has been remarkably successful in a very short period of time. The positive impact on nutrition status and health is evident from the analysis of growth trends and nutritional status among the target population. Communities are extremely supportive of the CBGP program as evidenced by the commitment of the volunteer growth promoters to the

participation of mothers and other caretakers in the growth promotion sessions to the well-functioning support supervision mechanisms in some districts.

These signals suggest that the CBGP program has the potential to make a significant contribution to improving child health in Uganda. Although the UPHOLD experience has been short-lived, it has provided a firm foundation for the continuation and expansion of CBGP in Uganda. A critical mass of communities has been trained, the materials have been developed, tested, and found to be effective, and the mechanisms for support supervision are in place. Based on the lessons learned through this Review, addressing some straightforward operational issues would help to immediately make the program even more effective and increase the benefits to child health in the community. In addition, building on this initial base of experience, there are a number of ways in which the program can be enhanced and linked to other community-based health activities and actions to achieve even better child health outcomes.

Annex 1: Definition of Indicators

Issue	Indicator	Nominator	Denominator
Reduction in the prevalence of malnutrition (low weight-for-age)	Proportion of children 6-12 and 12-24 months who participate in CBGP with weigh-average (W/A) below –2 z-score in Sept 06 and April 07	No children 6-12 and 12-24 months with W/A below –2 z-score in Sept 06 and April 07	Total no. of children 6-12 and 12-24 months weighed in Sept 06 and April 07
Program coverage	Proportion of children registered in CBGP out of total number living in community	No. children <2 registered in the GP registers at any time during study period	No children <2 living in the same villages as per the baseline
Effectiveness of on-going registration	Estimated number of 'missed' registrations	This is calculated as the expected number of births for a 7-months period (Oct06-Apr07) minus the number of births recorded in the Registers between Oct06 and Apr07.	
Intensity of participation	Proportion of children registered in CBGP who are actually weighed during the study period	No. children weighed in each month of study period	Total no. children registered in each month of study period
Adequate growth	Proportion of children who participate in CBGP with adequate growth during the study period	No. of children with adequate growth in each month of study period	Total no. children with growth trend in each month of study period
Persistent inadequate growth	Proportion of children with inadequate growth for 2 consecutive months	No. of children with repeated inadequate growth in each month of study period	Total no. children with growth trend in each month of study period
		No. of children with repeated inadequate growth in each month of study period	Total no. children with inadequate growth in each month of study period
Recuperation rate	Proportion of children who re-establish adequate growth after a month of faltering	No. of times children reported adequate growth after a month of faltering	No. of times children reported inadequate growth (Oct06-Mar07)
Increased immunization coverage	Proportion of children who participate in CBGP who had missed one or more immunizations	No. children <1 year who had missed one or more immunizations in each month of study period	No. children <1 year whose immunization status was checked in each month of study period

Annex 2: Observations and Exit Interview Instruments

Growth Promotion Counseling Observation Guide

Introductory remark to the counselor/growth promoter: My name is ……. Working with ……. District health team. I am here on behalf of the UPHOLD program to learn about growth monitoring in order to identify areas for program improvement. Please feel free and do not get be worried about my presence since I am not here to judge you. Is it ok if I sat in the session where you are involved in counseling of the mothers?
If the counselor/growth promoter agrees, proceed with the observations.

District: _____ Parish: _____ Sub-county: _____ Village: _____	Date of session: _____
Name of observer: _____	
1. Name of the growth promoter/counselor:	
2. Sex:	[ ] Male [ ] Female
3. Age:	
4. Level of highest education:	
5. Do you play any other role in the village? (**Tick all that apply**)	[ ] CMD [ ] RH volunteer [ ] VHT member [ ] TBA [ ] CORPS [ ] _____
6. Did you attend the initial 6-days training for growth promotion? If yes, when was that?	[] yes [] No _____ (month)/ 200__
7. Did you attend any (quarterly) review / continuous training meeting(s)?	[ ] None attended (**go to # 9**) [ ] One attended [ ] Two or more attended
8. What were topics covered during those review / continuous training meeting(s)	[ ] Common mistakes in the register [ ] Immunization [ ] Counseling [ ] Optimal breastfeeding [ ] Complementary feeding [ ] Feeding of sick child [ ] _____
9. Do you always do the counseling every month?	[ ] Yes [ ] No
10. How do you get information on whether the child gained adequate weight or not?	[] from the mother [] from the fellow growth promoter

1. Does the growth promoter ask the mother whether the child gained ***adequate*** weight over the past month?	[ ] Yes [ ] No
2. Did the child gain adequate weight?	[ ] Yes [ ] No [ ] Don't know
3. Does the growth promoter use the Child Health card to explain the growth of the child to the mother?	[ ] Yes [ ] No
4. Does the growth promoter ask about the health of the child?	[ ] Yes [ ] No
5. Does the growth promoter choose a counseling card?	[ ] Yes [ ] No ***(skip to 16)***
6. If yes, does the GP ask the questions indicated on the counseling card?	[ ] Yes [ ] No
7. Does the growth promoter listen to the answers provided by the mother?	[ ] Yes [ ] No
8. Does the growth promoter praise the mother for anything well done?	[ ] Yes [ ] No
9. Does the growth promoter discuss the recommendations listed on the card with the mother?	[ ] Yes [ ] No
10. Does the growth promoter actively use the pictures on the counseling card when asking questions and discussing recommendations?	[ ] Yes [ ] No Comments if any: _____ _____ _____ _____
11. Does the growth promoter actively involve the mother in the discussions / negotiation?	[ ] Yes [ ] No
12. Do the growth promoter and the mother reach a ***specific*** agreement on what the mother do over the next month?	[ ] Yes [ ] No Agreement reached: _____ _____ _____ _____ _____

13. Does the growth promoter ask the mother to repeat the agreement?	[ ] Yes [ ] No
14. Is the mother able to repeat the agreement correctly?	[ ] Yes [ ] No
15. Does the growth promoter inform the mother when to return?	[ ] Yes [ ] No
16. Any other observations / comments?	_____ _____ _____ _____ _____ _____

Growth Promotion Counseling Exit Interviews

Introductory remark to the mother.

My name is ……. working with ……. District health team. I am here on behalf of the UPHOLD program to learn about growth monitoring in order to identify areas for program improvement. I have a few questions to ask regarding your child and this activity. Please feel free and do not get worried since all the issues we shall discuss will be kept confidential. Is it ok to ask you a few questions about the session?

If the mother agrees go ahead and interview.

District: _____ Parish: _____ *Sub-county: _____ Village: _____*	*Date of Session:* _____
Name of research assistant: _____	
1. What are the names of your child? (probe for all the names used for the child)	
2. What relationship do you have with the child?	
3. How old is s/he?	_____ (in months)
4. How many times have you come to the growth promotion to have this child weighed?	
5. Did s/he gain adequate weight today?	[ ] Yes [ ] No [ ] Don't know
6. What did you discuss with the growth promoter today?	
7. Is this the first time you have discussed this? Did you learn anything new from the growth promoter today? If so, what did you learn?	
8. What did you agree to do between now and next growth promotion session? (probe for the specific details)	

9. Do you think it is possible for you to do what you agreed upon? If no, why not?	
10. Did the growth promoter refer you to the health center for any additional services? If yes, which services?	
11. Do you believe it will be possible for you to go the health unit? If not, why not?	
12. Do you believe it has been good for you and your child to come to the monthly weighing sessions? Why?/ Why not?	
13. What would you change in the growth promotion activities? (probe on the weighing, recording and the counseling process).	
Also ask for the Child Health Card of the child and check the following:	
14. Does the child have his or her Child Health Card?	[ ] Yes [ ] No
15. Which immunizations did the child receive so far, and on which dates?	[ ] BCG _____ [ ] DPT-HebB-Hib2 _____ [ ] Polio 0 _____ [ ] Polio 3 _____ [ ] Polio 1 _____ [ ] DPT-HebB-Hib3 _____ [ ] DPT-HebB-Hib1 _____ [ ] Measles _____ [ ] Polio 2 _____
16. What is the child's date of birth as indicated on the Child Health Card	_____ (day) / _____ (month) / 20__ (year)
Name of child in the records: _____ Age: _____ 17. How did the growth promotion record this child's immunization status in the register today? Up-to-date: [ ] Yes [ ] No [ ] not checked	

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