MCHIP Egypt – SMART
End-of-Project Report

October 2011–June 2014

End-of-Project Report

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Submitted by:
MCHIP Egypt – SMART Program

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health, and health systems strengthening.

This report was made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-00. The contents are the responsibility of the Maternal and Child Health Integrated Program (MCHIP) and do not necessarily reflect the views of USAID or the United States Government.

Country Summary: Egypt

Selected Health and Demographic Data for Egypt	
Maternal mortality ratio*	54/100,000
Neonatal mortality rate	16/1,000
Infant mortality rate	25/1,000
Under-five mortality rate	28/1,000
Contraceptive prevalence rate	60%
≥1 ANC visit	74%
Exclusive breastfeeding for children under six months	53%
Under-five chronic malnutrition (stunting)	29%
Severe acute malnutrition	7%
Source: EDHS 2008	

Major Activities by Program

- Providing community-based maternal, newborn and child health, nutrition, and family planning services through local community development associations (CDAs) and community health workers (CHWs)
- Building partnerships with Egyptian professional associations to increase local knowledge and skills on key newborn health interventions
- Developing the technical capacity of CDAs, particularly in increasing demand for health services in local communities
- Carrying out research study on the underlying causes of stunting in target governorates
- Rolling out gender-sensitive programming integrated with health and nutrition interventions

Program Dates	October 2011–June 2014					
Total Mission Funding to Date by Area	US $10,400,000					
Geographic Coverage	Number of governorates	6	Number of districts	12	Number of villages/ total population	100/ ~two million people
Country and Headquarters Contacts	Dr. Issam El Adawi, Chief of Party (COP); Dr. Ali Abdel-Megeid, Deputy COP; Dr. Koki Agarwal, MCHIP Director; Anita Gibson, MCHIP Deputy Director; Angie Brasington, Community Health and Social Change Advisor; Vikas Dwivedi, M&E Advisor; Dr. Justine Kavle, Nutrition Senior Program Officer and Principal Investigator of the Stunting Study; Rae Galloway, MCHIP Nutrition Team Lead; Dr. Neena Khadka, Newborn Health Advisor; Jennifer Shindeldecker, Program Officer					

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Acronyms and Abbreviations

ABWA	Asyut Business Women's Association
ANC	Antenatal Care
CDA	Community Development Association
CHW	Community Health Worker
CIA	Central Intelligence Agency
COP	Chief of Party
CPR	Contraceptive Prevalence Rate
EBF	Exclusive Breastfeeding
EDHS	Egypt Demographic and Health Survey
ENC	Essential Newborn Care
FP	Family Planning
GWLA	Giving Without Limits Association
HAZ	Height-for-Age Z-score
HBB	Helping Babies Breathe
IEC	Information, Education, and Communication
IFA	Iron and Folic Acid
IYCF	Infant and Young Child Feeding
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
LCDA	Local Community Development Association
LE	Lower Egypt
M&E	Monitoring and Evaluation
MCHIP	Maternal and Child Health Integrated Program
MiL	Mother-in-law
MNCH	Maternal, Newborn (or Neonatal), and Child Health
MNCH-FP	Maternal, Newborn, and Child Health-Family Planning
MOHP	Ministry of Health and Population
MOSS	Ministry of Social Solidarity
MOU	Memorandum of Understanding
NA	Not Applicable
NGO	Nongovernmental Organization
ORS	Oral Rehydration Solution
PNC	Postnatal Care
PPFP	Postpartum Family Planning

SBCC	Social Behavior Change Communications
SD	Standard Deviation
SMART	Community-based Initiatives for a Healthy Life
Takamol	Integrated Reproductive Health Services project
TBD	To Be Determined
TIPS	Trials of Improved Practices
UCDA	Umbrella Community Development Association
UE	Upper Egypt
USAID	United States Agency for International Development
US $	United States Dollars
U2	Children Under Two Years of Age
WHC	Warm Hug Care (WHC)
WHO	World Health Organization

Acknowledgments

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SMART would like to acknowledge the close collaboration and contributions of the National Nutrition Institute throughout the course of this program. In addition, we would like to thank the staff of the following offices and organizations, which assisted in the realization of this program:

- Directorates of Midwifery Training, Neonatology, Health Education, and Primary Health Care – Ministry of Health and Population
- Governorate and District Health Directorates
- USAID/Egypt, Office of Health and Population team

Cooperating Partners

Egyptian National Associations

- Healthy Egyptians
- Egyptian Syndicate of Nurses
- Egyptian Lactation Consultants Association
- Egyptian Menopause Society
- Suez Canal University
- Egyptian Neonatal Network
- Al Azhar University – Medical School for Girls

National Professional Institutions

- National Nutrition Institute
- American University of Cairo

SMART would also like to acknowledge the significant contribution and commitment of the 112 Community Development Associations that were responsible for implementing the SMART activities. These are listed in detail in Annex 5. In addition, we would like to acknowledge our program staff:

Dr. Issam El Adawi	Chief Of Party
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Executive Summary

The United States Agency for International Development (USAID)/Egypt has supported Ministry of Health (MOH) maternal and child health programs in Egypt over the past 30 years, contributing to the notable decline in child and maternal mortality in the last two decades and improvements in several key maternal and child health indicators. However many challenges remain, including persistent high levels of child malnutrition: stunting among children under the age of five increased from 23% in 2005 to 29% in 2008 with increases concentrated in two regions (Lower Egypt and Frontier Governorates) according to the 2008 Egypt Demographic Health Survey (EDHS). The neonatal mortality rate has also stagnated despite declines in infant and under-five mortality.

The 2008 EDHS estimated neonatal mortality at 16 per 1,000 live births, a decrease in mortality of 33% from the 2000 EDHS estimate of 24 deaths per 1,000 live births. For the same period, infant mortality declined by 43% and under-five mortality by 48%. The neonatal mortality contribution to under-five mortality has therefore increased from 44% to 58% during the same time period.

Although almost all infants are breastfed, on average, only half are exclusively breastfed in the first six months. Feeding practices for children during the complementary feeding period (six to 23 months) are also not optimal—only 68% of children consumed the minimum number of food groups (a proxy for the quality of the diet) in 2008, and only 50% of children were fed the minimum number of meals per day (a proxy for energy intake). As a result, it is estimated that only 41% of all children are fed a minimally adequate diet in Egypt. Although most newborns are screened for iodine deficiencies, other newborn care interventions are not routinely provided. The major causes of neonatal death are preventable or treatable with simple, cost-effective interventions.

Preventing unintended pregnancies, particularly through pregnancy spacing, is a critical component of improving the health, nutrition, and survival of mothers and infants. According to the 2008 EDHS, 58% of currently married women 15 to 49 years of age were using a modern method of family planning (FP). Even though contraceptive use in Egypt has been increasing, overall trends in pregnancy spacing have not improved.

According to a 2010 gender assessment conducted by USAID/Egypt, persistent gender inequalities in Egypt continue to contribute to poor health outcomes for women, children, and even men. Unequal power relations based on gender are evident within families and communities, and are also reflected in health, educational, judicial, and economic institutions. These inequities severely affect women's capacity to make optimal decisions about their health care and the prevention of illness for themselves and their children. For instance, the 2008 EDHS reported that only 21% of ever-married women had knowledge of the danger signs during pregnancy and childbirth—vital information that should have been given to them during antenatal checkups.

Key SMART Activities

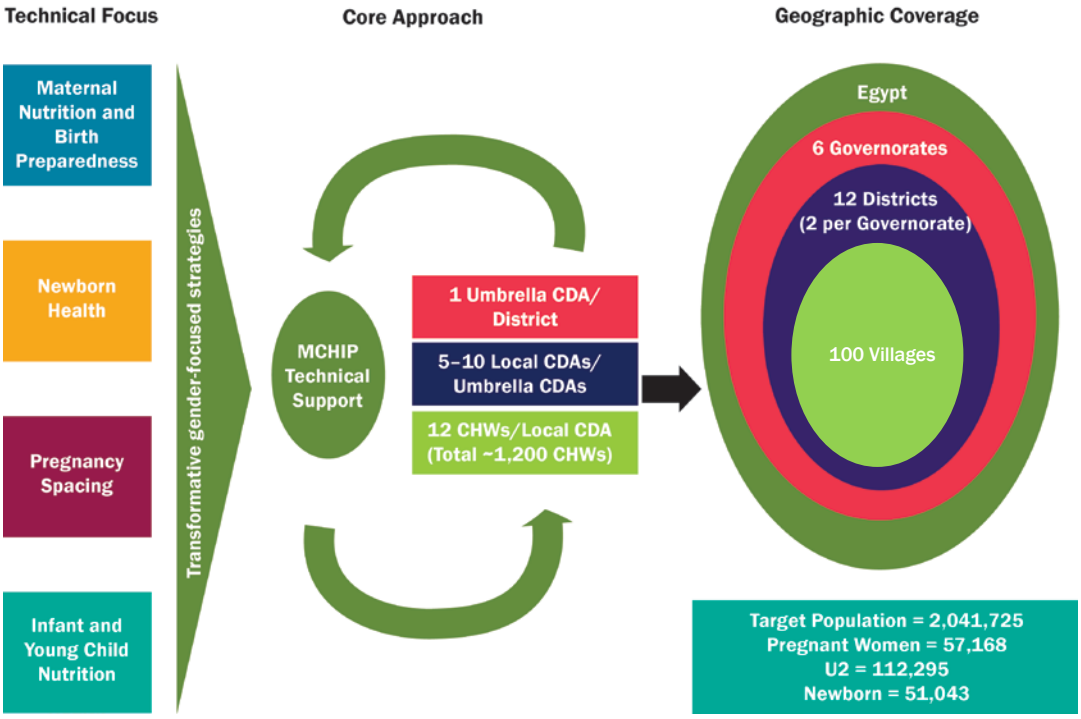
- Carry out community health outreach and communication activities that increase knowledge, skills, and practice of key maternal, neonatal, and child health behaviors, while creating demand for related services.
- Implement a nutrition education and rehabilitation program at the community level to address childhood malnutrition and stunting.
- Promote home-based neonatal care through a package of simple interventions that can save the lives of newborns, especially those delivered at home. Train outreach workers to counsel mothers about newborn care including, thermal regulation, cord care, kangaroo mother care for low birth weight, and initiation of breastfeeding within one hour after birth.
- Build capacity of local CDAs to respond to health care needs with a focus on sustainability.
- Conduct an in-depth study to understand the

In this context, SMART (Community-based Initiatives for a Healthy Life) was a two-and-a-half-year initiative under MCHIP that was implemented in six governorates of Egypt: Qalyubia and Sharqia in Lower Egypt, and Beni Suef, Asyut, Qena, and Sohag in Upper Egypt. Intervention areas were selected by considering malnutrition rates and low health indicators related to neonatal, child, and maternal health. SMART's aim was to reduce neonatal mortality and malnutrition for children under the age of two by increasing knowledge of and demand for quality antenatal care (ANC) services, neonatal care, and postnatal care (PNC), and providing nutritional information and support to caretakers of children under two years of age (U2) through a community approach. SMART sought to provide a package of proven, low-cost interventions during the first 1,000 days of life to improve children's health and nutrition.

For most of the duration of the SMART program—December 2011 through December 2013—Egypt was in a state of political upheaval, including a rise of religious conservatism in some SMART implementation areas. In this environment SMART sought to build on past experience working with local civil society organizations to provide direct implementation support to address malnutrition and newborn health with program activities that complemented services provided through the public health system. Building on the success of previous programs working with community development associations (CDAs), SMART partnered with 12 local organizations in the six governorates to implement community-based health initiatives. These 12 umbrella CDAs each oversaw an additional five to 10 local CDAs, building their capacity and supporting them to reach the community level effectively in all six governorates. The target population for SMART interventions was over two million people.

SMART's goal has been to improve neonatal health and child nutrition outcomes in Egypt, with a strategic objective to increase the use of key maternal, neonatal, and child health (MNCH) and nutrition behaviors and use of community-based MNCH-FP-Nutrition services. The integrated SMART approach is shown in Figure 1 below.

Figure 1. SMART Program Overview and Logic Framework



Key accomplishments include:

1. Improved access to and quality of key MNCH-FP-Nutrition services by private, community-based providers

    - Approximately 1,200 community health workers (CHWs) have been trained through a 10-day, competency-based training program followed by supportive supervision by a strong team of experienced supervisors with the goal of ensuring that CHWs are performing their tasks. CHWs are committed to delivering health messages to women, making home visits during which they provide health and nutrition guidance and refer women to clinics. CHWs also conduct group nutrition counseling and health education sessions, including cooking demonstrations, for pregnant women, women with children under two years of age, their husbands, and mothers-in-law.
    - SMART has had a 98% retention rate of CHWs, many of whom will continue their work with CDAs after the end of the program as a result of funds secured for future SMART-modelled programs.
    - Approximately 38,000 women and children have received free health care from UCDA-facilitated mobile clinics arranged in villages with limited access to public services. SMART funds supported logistics and additional training to providers to ensure quality ANC and child assessments delivered from mobile units.
    - Approximately 149,000 women and their families received health messages as part of group counseling sessions and monthly home visits.
    - Over 4,241 mothers who gave birth during the program period received their first PNC home visit by a CHW within two days of delivery (i.e., nearly all mothers who participated in the program).

2. Increased knowledge and use of key MNCH-FP-Nutrition behaviors by women and men

    - SMART has built upon the previous materials developed by USAID-funded health programs and produced a variety of well-researched publications about MNCH and nutrition. SMART collected these materials in an "e-Library," which was widely-disseminated to partners and stakeholders. These publications included the 1,000 Days[1] Protocol for physicians (shared with public and private sector doctors), a manual for nurses, CHW Guidelines and Health Messages, eight brochures on MNCH and nutrition, eight fact sheets for public information, and two posters. These publications have been well-utilized by key stakeholders and implementing partners.
    - Approximately 3,200 doctors, nurses, and CHWs have been trained in key SMART interventions, including essential newborn care (ENC), Helping Babies Breathe (HBB), kangaroo mother care (KMC), promotion of exclusive breastfeeding, healthy timing and spacing of pregnancy, nutrition counseling, and growth monitoring. Introduction of these interventions were accepted well among health care providers and have been utilized in their daily practices.
    - SMART collaborated with key national institutions including the National Nutrition Institute, Egyptian Association of Neonatology, and the Coalition of NGOs (nongovernmental organizations) against Pneumonia, and partnered with medical faculties of universities selected to include SMART key interventions in training programs for physicians.
    - The Egyptian MOHP expressed an interest in the SMART approach and is considering scaling up key nutrition and neonatal health interventions using SMART materials and foundation.

[1] The period of 1,000 days refers to the window of opportunity for intervening to prevent and address poor health and nutrition from conception through the first two years of life.

- Increased women's and men's knowledge of danger signs during a woman's pregnancy, delivery, and in newborns (see Table 3).

3. Increased capacity of CDAs to implement community-based strategies to improve MNCH-FP-Nutrition

   - SMART supported and strengthened the 12 Umbrella CDAs to implement their own MNCH activities and fundraise for new projects and initiatives. These 12 CDAs, in turn, supported 100 local CDAs working in 100 villages. As a testament to the significant impact that SMART has had in building capacity among the CDAs to implement programs and secure funds for future initiatives, a combined US $7.1 million has already been secured to fund an additional two years of programming to replicate the SMART model in areas not currently covered by the program.
     - In all six program governorates, 32 SMART partner CDAs were able to raise a total of 33,767,000 Egyptian Pounds (US $4.74 million) to scale up the SMART model for community-based MNCH activities. Funding sources included the Japanese Embassy and the Social Fund for Development. LCDAs reported that SMART's organizational development training package, which included modules on program needs assessment and design, proposal writing, financial management and sustainability planning, supported them to successfully seek additional funds, as did the opportunity to network with other CDAs in their geographic area.
     - Fifteen of the 32 SMART-funded CDAs have received additional funding from non-USAID sources for 28 complementary MNCH programs. The total value of these additional program activities equals 17,239,215 Egyptian Pounds (US $2.42 million).

4. Increased knowledge base of factors associated with stunting (including those that are gender-specific) and approaches to reduce stunting and neonatal mortality

   - SMART carried out a four-part study examining factors related to stunting within the Egypt context including the following:
     - Longitudinal study tracking 300 children's growth, health, and infant and young child nutrition practices during their first year of life
     - In-depth interviews with 120 pregnant and postpartum women
     - Trials of Improved Practices (TIPS) study with 150 mothers with children younger than two years of age to identify small-scale interventions mothers can take to improve their children's health and nutrition
     - In-depth interviews with 120 fathers, grandmothers, and health care workers
   - Four peer reviewed journal articles detailing results associated with the stunting study and SMART's community-based activities have been drafted.
   - SMART provided materials and training for professional associations, medical faculty and students, and for other strategic networks to increase awareness of MNCH as well as nutrition issues. Results of best practices under the program, such as simple and cost effective trainings to support evidence-based interventions like Kangaroo Mother Care (to enhance thermal regulation and promote optimal breastfeeding for premature and low birth-weight babies); Helping Babies Breathe (to assist babies who do not breathe spontaneously at birth); Child Nutrition and Development Counselling (to promote optimal Infant and Young Child Nutrition (IYCN) and education around child developmental milestones), and Post-Partum Family Planning, were shared broadly with key stakeholders at all levels, raising awareness of the widespread problems of preventable newborn death, childhood illness, and malnutrition and the simple measures that are available as solutions.

5. Improved awareness of the impact of gender roles in improving MNCH-FP-Nutrition outcomes

   - A gender analysis was completed to gain an understanding of the differences and inequalities between men and women in program planning, implementation, and assessment of the planned SMART program activities. Staff used gender analysis results to support CDA partners with further gender awareness training and design of community-based activities to encourage greater social equality. The results of this analysis are discussed in greater detail under Objective 5, later in this document.
   - SMART developed and supported implementation of an innovative "Family Solidarity Training Guide" with four units. Local CDAs received training and support to use the guide in all 100 SMART villages in six governorates. The training units provided the basis for CHWs to begin conversations about gender and family decision-making in a culturally appropriate and non-threatening manner.

Presented below (in Table 1) are key indicators that SMART tracked in the baseline and endline surveys. Findings from these evaluations demonstrate the SMART program's achievements in accelerating behavior change and improving knowledge about key areas that support newborn and maternal health including nutrition, despite the unrest and societal changes occurring in Egypt during the program period.

Please note that data presented in Table 1 are for survey respondents with children *less than 12 months in age*. This subset of respondents was optimally-exposed to the SMART intervention package beginning with home visits in pregnancy, continuing through childbirth and the postpartum period, and including breastfeeding support and nutrition promotion for their infants. Due to SMART's short intervention period, which spanned only 15 months, women whose children were 12 months or older during the end line survey would not have interacted significantly with CHWs during their pregnancies.

Table 1. Key SMART Program Indicators

INDICATOR	UPPER EGYPT			p-value	LOWER EGYPT			p-value
	BASELINE	ENDLINE	Difference		BASELINE	ENDLINE	Difference	
% of women who received ANC 4+	73.6 (794)	85.4 (875)	11.8	0.001	75.4 (808)	86.7 (799)	11.3	0.001
% of women who consumed 90+ IFA during recent pregnancy	32.5 (477)	41.7 (693)	9.2	0.001	32.0 (528)	45.1 (638)	13.1	0.001
% of women with knowledge of at least three complications during delivery	4.9 (792)	46.1 (875)	41.2	0.001	6.6 (801)	19.2 (799)	12.6	0.001
% of women whose child was delivered by skilled birth attendant	89.0 (794)	95.1 (875)	6.1	0.001	89.2 (808)	98.1 (799)	8.9	0.001
% of women breastfeeding their newborn within one hour of delivery	43.0 (702)	43.6 (794)	0.6	0.828	41.0 (566)	40.8 (618)	-0.2	0.941

INDICATOR	UPPER EGYPT			p-value	LOWER EGYPT			p-value
	BASELINE	ENDLINE	Difference		BASELINE	ENDLINE	Difference	
% of women practicing exclusive breastfeeding for children under six months	38.8 (351)	55.2 (433)	16.4	0.001	43.9 (367)	57.8 (422)	13.9	0.001
% of women feeding their children at least three food groups (a sign of nutritional diversity)*	5.4 (443)	18.8 (442)	13.4	0.001	10.8 (441)	15.9 (377)	5.1	0.001
% of women with knowledge of benefit of two plus years of spacing between pregnancies	66.3 (789)	82.7 (872)	16.4	0.001	64.6 (791)	89.2 (799)	24.6	0.001
Number of women**	794	875			808	799		

* includes: (1) milk or other dairy products; (2) eggs; and (3) any green, leafy vegetables or yellow or orange fruits and vegetables.

** number of women varies by responses, hence actual number given in parenthesis

Table 2. Services offered during ANC, as reported by surveyed women

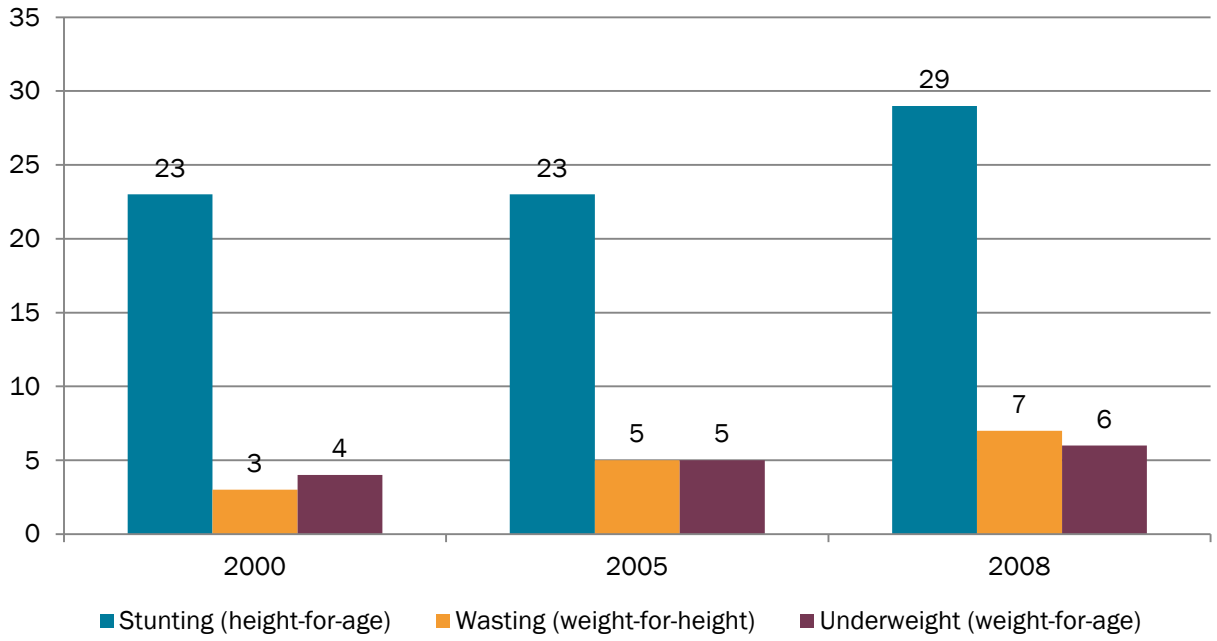
SERVICES OFFERED	UPPER EGYPT (%)			LOWER EGYPT (%)		
	BASELINE	ENDLINE	Difference	BASELINE	ENDLINE	Difference
Weight measured	66.7	90.4	23.7	76.2	94.6	18.4
Height measured	30.8	77.3	46.5	38.8	87.3	48.5
Blood pressure measured	79.0	89.7	10.7	85.2	93.1	7.9
Urine tested	67.4	79.9	12.5	77.5	90.0	12.5
Blood tested	69.0	86.7	17.7	80.3	90.7	10.4
Counseling on breastfeeding	60.7	85.1	24.4	60.4	90.9	30.5
Counseling on pregnancy spacing	49.6	80.8	31.2	52.5	86.3	33.8
Number of women	(794)	(875)	-	(808)	(799)	-

Although much work remains to be done to improve maternal and child health in Egypt, in a relatively short period the SMART program supported local organizations to create lasting change for Egyptian mothers and children by building the capacity of hundreds of community members and key individuals at the district and governorate levels who make decisions about and act upon health and nutrition issues. The strategic SMART approach of working through CHWs and CDAs, including building their capacity to fundraise for health programs, increases the likelihood that similar programming and demand for quality services will continue after the SMART program ends. The partnership developed with Egyptian professional associations for the rollout of training and the broad dissemination of key materials with service providers, pharmacies, governorate and district health managers, and national MOHP stakeholders will also help to ensure that what was developed under SMART will be used beyond the life of the program.

Introduction

The 2008 Egypt Demographic and Health Survey (EDHS) estimated neonatal mortality to be 16 per 1,000 live births, having decreased by 33% from the 2000 EDHS mortality estimates of 24. For the same period of time, infant mortality decreased by 40% and under-five mortality by 48%, indicating a substantially more rapid decline of infant and under-five mortality in comparison to neonatal mortality. Neonatal mortality's contribution to under-five mortality therefore increased from 40% to 58% during the same time period. Alarmingly, child malnutrition, particularly stunting, increased between 2005 and 2008 EDHS: in 2008, 29% of children under five were stunted (<-2 height-for-age Z-score [HAZ]), with 13% severely stunted (<-3 HAZ). The largest percentage of stunted children under five were found in Qalyubia, in Lower Egypt. (Figure 2 shows the incidence of child stunting in Egypt over an eight-year period, from 2000 to 2008.) Additionally, access to and knowledge of basic health and nutrition services, including family planning (FP), was low, and the need to enhance equity in terms of decision-making between men and women was a pressing one.

Figure 2. Trend in Nutritional Status of Children Under Five in Egypt *(EDHS 2000, 2005, 2008)*



The SMART (Community-based Initiatives for a Healthy Life) program built on successful community outreach activities established by previous United States Agency for International Development (USAID)-funded reproductive and maternal health programs, including Healthy Mother-Healthy Child (1992–2005), Communication for Healthy Living (2003–2011), and the Integrated Reproductive Health Services project (or "Takamol") (2006–2011). These programs created a cadre of well-trained reproductive health and maternal and child health care personnel and helped to increase demand for facility births and FP. Each program worked with and through local nongovernmental organizations (NGOs), known in Egypt as community development associations (CDAs), to complement and create demand for public sector health care services, and increase the adoption of key healthy practices.

The SMART program saw a clear need to reinforce early (first trimester) and frequent—four or more (4+) antenatal care (ANC) visits—and improve the quality of ANC interventions delivered

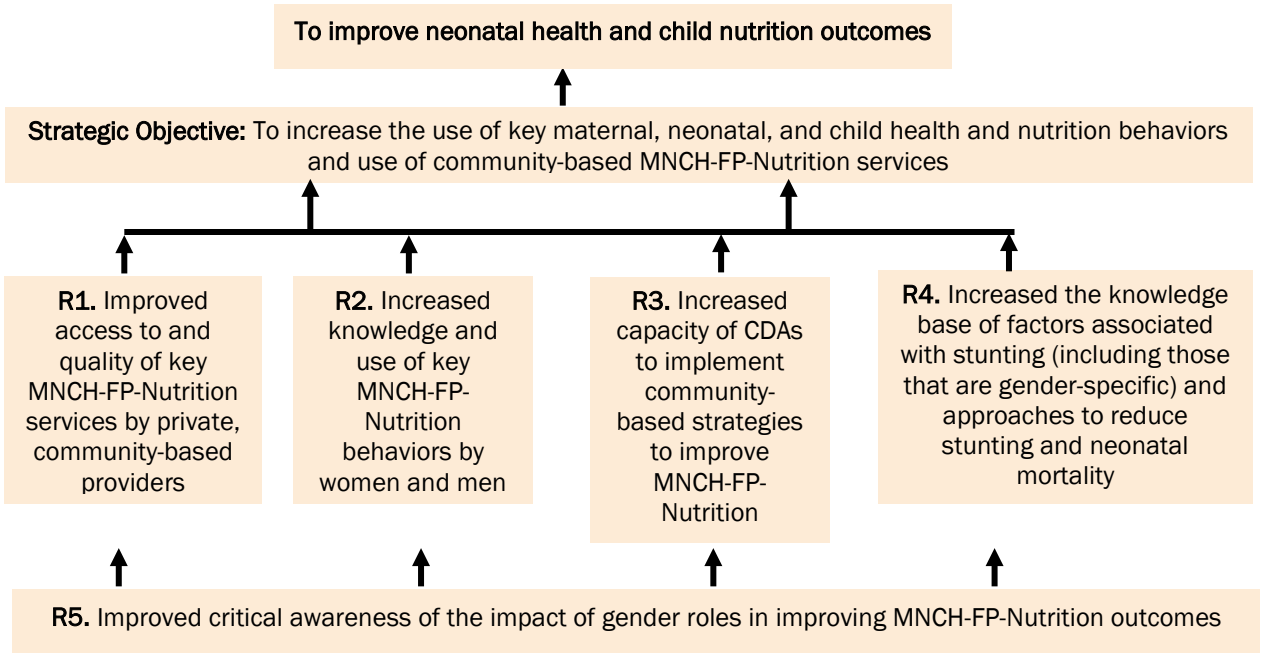
by private providers, including provision of tetanus toxoid vaccine and counseling pregnant women about danger signs, birth preparedness, essential newborn care (ENC), breastfeeding and complementary feeding, postnatal care (PNC), and FP. The program also sought to promote a healthy diet during pregnancy and post-pregnancy and to increase coverage of early breastfeeding practices. SMART baseline findings also reinforced the importance of emphasizing *postpartum* family planning (PPFP), at facility and at community levels; and providing counseling not only to women, but also to their husbands, mothers-in-law, and important members of the community, such as religious leaders.

SMART provided an integrated package of interventions that directly benefited key vulnerable populations, including low-income households and women and children, and that invested in learning. To gain an understanding of the underlying causes for the increase in stunting, SMART conducted research comparing various aspects of maternal health and nutrition, access to food, infant and young child feeding habits, and neonatal care across the six governorates.

SMART worked through and with CDAs, private health care providers and community outreach workers and focused on building the organizational and technical capacity of governorate-level umbrella NGOs to enable them to support local CDAs at the village level.

The overall goal of SMART was to improve neonatal health and child nutrition in Egypt through the increase of key maternal, neonatal, child health, and nutrition behaviors as well as the use of community-based MNCH-FP-Nutrition services (See Figure 3: SMART Results Framework.)

Figure 3. SMART Results Framework



SMART's aim was to ensure that communities are able to use community-based strategies and approaches to improve maternal and child health, neonatal health, and nutrition issues, including pregnancy spacing. Therefore, a key objective of SMART was to continue to enhance local organizations' capacities so that by the end of the program some, if not all, of the associations would be able to sustain interventions to improve maternal, newborn, FP, and nutrition health in their communities and through local health care workers.

Gender-transformative and sensitive programming was also a focus of SMART interventions. The main objective of SMART in relation to gender was to improve community awareness of how traditional gender roles impact maternal, newborn, and child health (MNCH)-FP-Nutrition outcomes. Accordingly, SMART supported UCDAs to conduct Gender Analyses in each governorate and used the results to inform transformative gender strategies that examined, questioned, and stimulated dialogue within communities around gender norms that limit positive health outcomes and create imbalances of power regarding decision-making. These strategies sought to ensure gender equity (including constructive male involvement) and also to improve MNCH health results in the community.

The SMART program promoted evidence-based interventions and built on communities' capabilities to take charge of their own health by empowering them with the information and skills they need to achieve their health goals. As part of our investment in learning, SMART began a multipronged study to explore the underlying causes of stunting among young children in Lower Egypt and to make recommendations for addressing the issue.

SMART also worked with private pharmacies as a way to increase awareness of the availability of key FP commodities and iron and folic acid (IFA) supplements for pregnant women. In addition, SMART worked with them to improve awareness and increase knowledge of childhood malnutrition and its prevention and management. LCDAs identified pharmacists and key commodities during the initial needs assessment and social mapping exercises that formed the basis of their program proposals. They used this information to invite pharmacists to orientations, which helped engage them in developing solutions to local supply and demand issues affecting women's and children's health. SMART built the capacity of pharmacists to provide counseling to women and couples about the appropriate use of FP methods and IFA. Pharmacists appreciated SMART CDAs involving them, and saw this as recognition of their critical role in promoting and protecting health in their community.

SMART focused geographically in districts and governorates with the highest rates of chronic malnutrition as evidenced by the 2008 EDHS or other available data. SMART also focused on areas hardest hit by the recent economic downturn—areas in which poverty rates are high and to which migrant workers are returning. These workers are returning either because tourism has decreased in Egypt or they are returning from abroad (from Libya or elsewhere).

Priority governorates were identified by considering the following factors: 1) malnutrition rates; 2) poverty rates; 3) migration return rates; and 4) lower health indicators (contraceptive prevalence rate [CPR], ANC, pregnancy spacing, teenage pregnancy, deliveries by skilled providers, availability of ANC, and maternal mortality). Special consideration was given to examining and responding to the high stunting rates in Lower Egypt. Priority governorates in the SMART program included: Qalyubia and Sharqia in Lower Egypt; and Asyut, Beni Suef, Qena and Sohag in Upper Egypt.

SMART conducted baseline and endline surveys that provided informative and comparative analysis of the availability, accessibility, and utilization of MNCH-FP services and behaviors in the six targeted governorates before and after program interventions. The survey covered approximately 6,400 mothers of children under the age of 24 months, 6,400 children under 24 months, and 3,200 fathers of children under the age of 24 months. The study participants were selected randomly from 12 intervention districts and six control districts in the six target governorates. The baseline and endline surveys were complemented by qualitative research, which helped to document changes in the knowledge, behavior, and quality of MNCH-FP nutrition services. The SMART program's investment in qualitative and quantitative research enabled tracking of improvements in outcome indicators over the life of the program.

Major Accomplishments

Objective 1: Improved access to and quality of key MNCH-FP-Nutrition services by private, community-based providers

Key achievements and contributions to improved health outcomes

- Twelve hundred female community health workers (CHWs) delivered health education services in a population of over two million. SMART-trained CHWs provided pregnant women and mothers of children under two with MNH-FP and nutrition counselling at home and in group sessions within their neighborhoods. Three out of every four women surveyed in UE said that a SMART CHW visited their home at least once in a month in the past six months, and over half of women in LE reported the same (76.4 UE/ 53.8 LE).
- Men and women in SMART communities knew danger signs and reported increased practice of healthy behaviors compared to counterparts in non-SMART areas. Endline survey results showed significant increases in consumption of IFA during pregnancy, ANC coverage, use of a skilled birth attendant at delivery, exclusive breastfeeding, and children fed a diverse diet (as seen in Table 1 and Figures 4, 5, and 11).
- Another 4,300 doctors and nurses working in SMART communities and medical faculties received training on MNH-FP Nutrition so that they could reinforce and promote healthy behaviors during routine ANC, PNC, delivery and child care visits.
- Approximately 38,000 women and children in SMART communities received primary health care services from UCDA-facilitated mobile clinics arranged in villages with limited access to public services. Originally the target was 7,000 women and children served. However, as baseline assessments showed that the need was greater than originally anticipated, SMART shifted resources to meet this need.

In Egypt, about 87% of early childhood deaths take place in the first year of life, and more than half (58%) occur in the first month of life. Although most women deliver in a health care facility, postnatal follow-up visits are not routine, and are often of poor quality. According to the baseline survey, only 19% of women received a second postnatal visit within seven days after delivery, suggesting that few women are visited at home. Moreover, only 16.5% of newborns received all five of the following ENC practices: clean cord cutting; clean cord care; wiping/drying the baby at birth; wrapping with a warm, clean cloth; and immediate breastfeeding. Moreover, many physicians fail to counsel women of the importance of proper nutrition for themselves and their young children, especially about how to promote optimal growth and prevent stunting in children. Additionally, according to the baseline survey, although 72% of women reported receiving some iron pills during pregnancy, only 33% received at least 90 pills. Breastfeeding and pregnancy spacing counseling had lower coverage—only 51% and 59%, respectively.

In this context, the SMART program developed and disseminated simple MNCH/FP messages through partnerships with medical faculties in eight universities, public presentations, and mass media. Obstetricians, gynecologists, and pediatricians were trained in evidence-based MNCH practices, including ENC, Helping Babies Breath, and kangaroo mother care. SMART also developed strong working relationships with Egyptian professional organizations, including the National Neonatology Association, the National Nutrition Institute, the Egyptian Association of Breastfeeding, and the Egyptian Syndicate of Nurses.

To facilitate and improve the quality of provider training, SMART developed training guides for doctors, nurses, and community health workers (CHWs), which focus on nutrition for pregnant and postpartum women, and for children from birth to the age of two years, and include up-to-date

information about newborn care, vaccinations, and contraceptive methods. The guidelines were rolled out in training sessions and in universities and medical faculties in partnership with cooperating professional associations.

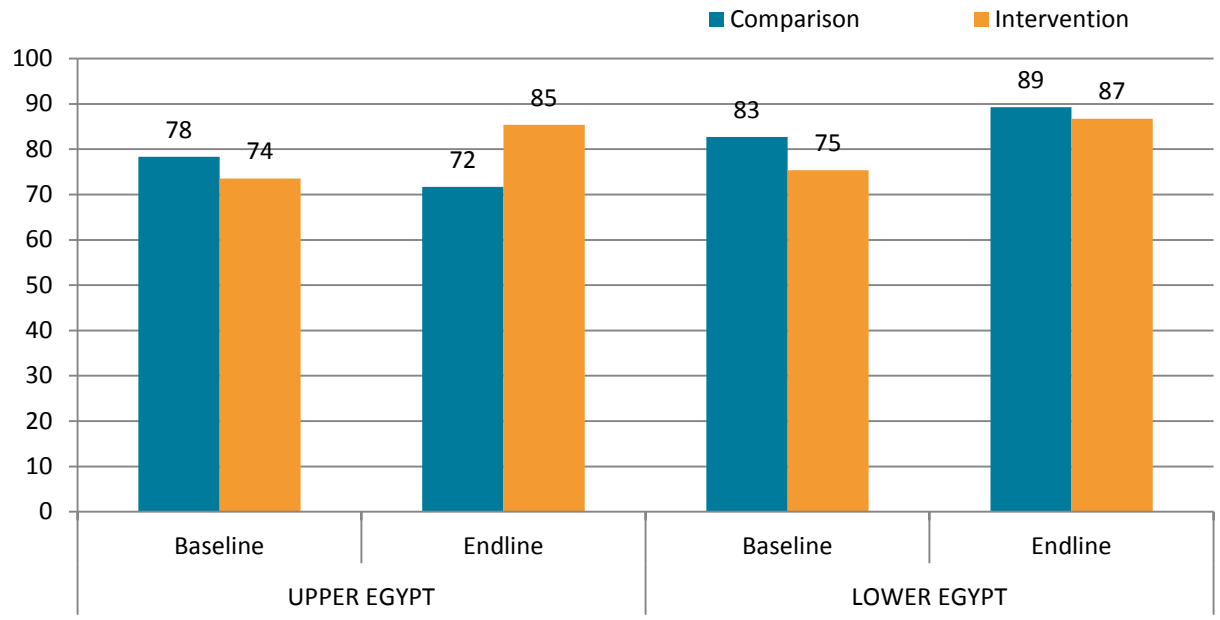
SMART supported training of around 5,523 health care providers (including doctors, nurses, and CHWs) from the public and private sectors during the program period. Many of these providers work in teaching hospitals or medical schools of local universities, which may help to ensure that the information and skills provided by SMART are transferred to a new generation of health care workers. Private pharmacists also received training in MNCH/FP messages, including the importance of taking IFA tablets, completing regular ANC visits during pregnancy, and the benefits of exclusive breastfeeding and PPFP.

Through targeted mobile clinics, SMART provided training and funding support to UCDA-hired medical teams that provided maternal and child primary health services in remote areas of all six governorates. These services benefited 12,079 women and 18,205 children under two years of age. Each mobile team—comprising a gynecologist, a pediatrician, nurses, and lab technicians—traveled to preselected communities on a monthly basis to offer free medical care to pregnant women and mothers of children under two years of age—a highly valued service for women that are often excluded from health care because of cost or distance barriers, especially during Egypt's difficult political transition phase.

In addition, through leveraged funds, CDAs distributed IFA tablets at no cost to pregnant women, many of whom may not have been able to access IFA otherwise due to frequent public sector stock outs during the intervention period. Stock outs/lack of access to IFA may explain why consumption of iron decreased in comparison areas between baseline and endline in Upper Egypt. (See Figure 5)

Until recently, the political climate in Egypt did not allow the SMART program to work directly with the Ministry of Health and Population (MOHP). However, the MOHP requested that SMART behavior change communication materials be distributed to all public health centers across Egypt and asked SMART to train 2,000 outreach workers in key messages for pregnant and breastfeeding women.

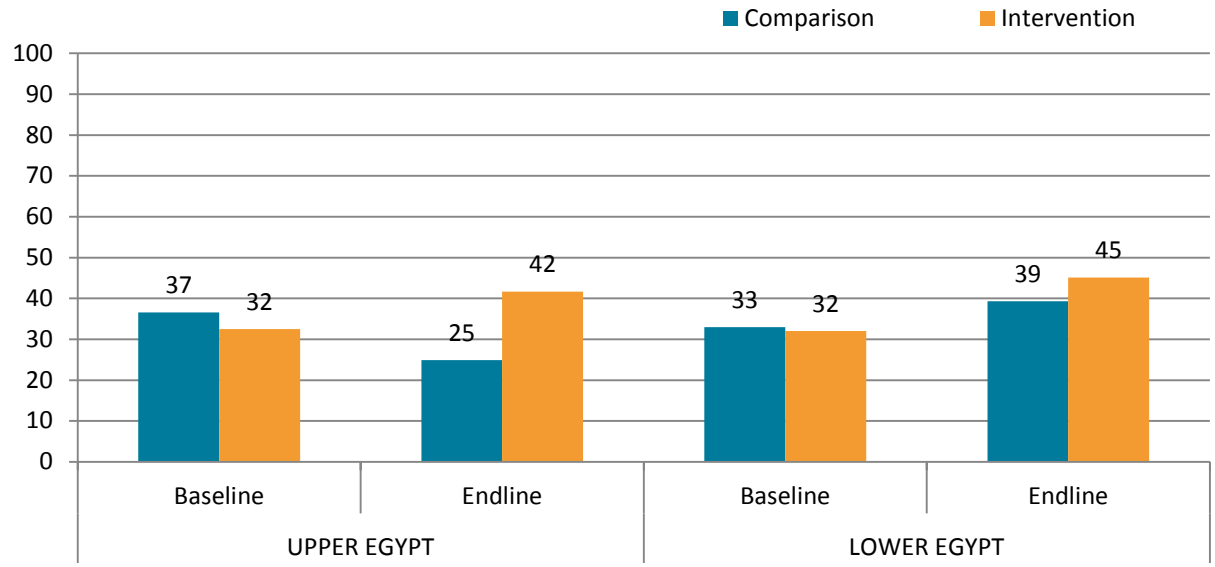
Figure 4. Women Who Received ANC 4+



According to the endline results, frequency of ANC improved among women who were followed up closely by SMART CHWs. (Figure 4 shows endline increases in women's receipt of ANC services four or more times during pregnancy.) Men within the intervention areas shared that they accompanied their wives to ANC visits at least once during their pregnancies. It also showed that in Upper Egypt there was a decrease in the percentage of women who received ANC 4+ visits in the comparison districts. A possible explanation for the decrease in ANC coverage in Upper Egypt, where the population is generally poorer than in Lower Egypt, is that economically challenging times led families to deprioritize ANC services among other competing costs.

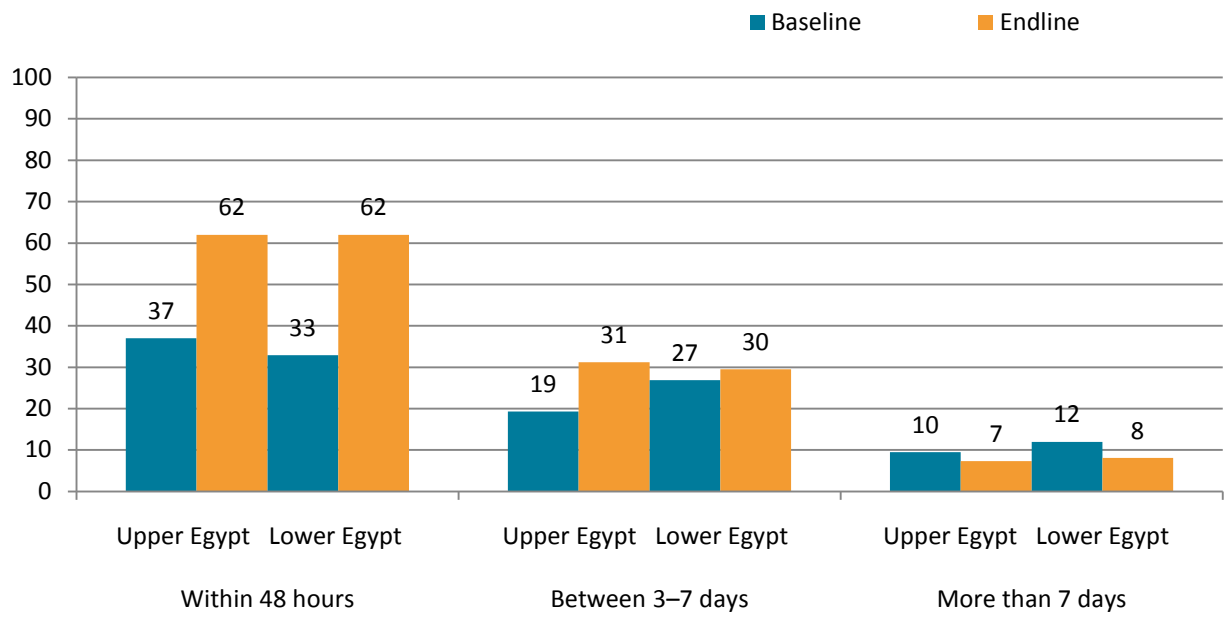
Intervention areas in Upper and Lower Egypt showed statistically significant positive gains in rates of IFA consumption from baseline to endline (Figure 5). In Upper Egypt, 42% of pregnant women in program areas consumed 90+ IFA compared with only 25% of women in comparison sites. Similarly, in Lower Egypt 45% of women consumed 90+ IFA in intervention areas compared to 39% in comparison areas. Although consumption of 90+ IFA tablets increased in Lower Egypt in both comparison and intervention areas, the gains in intervention areas were more than double those in comparison areas. When questioned during the qualitative section of the endline evaluation, women in program areas showed a common awareness about the importance of and correct use of IFA tablets.

Figure 5. Consumption of 90+ Iron- Folic Acid Tablets during Pregnancy



With regard to postnatal care services, Figure 6 compares the timing of the first visit after delivery at baseline and endline in Upper and Lower Egypt, showing increases in the percentage of women visited within 48 hours of delivery (37% to 62% in Upper Egypt and 33% to 62% in Lower Egypt). This data shows that SMART CHWs were effective in visiting women within 48 hours of delivery to check on the health of the woman and her baby, provide her with information on newborn danger signs and how to care for her infant, and to explain the importance of breastfeeding. CHWs aimed to reach new mothers within two days of delivery to optimize their influence over timely care-seeking for danger signs and breastfeeding. SMART was able to detect increased rates of exclusive breastfeeding, although the program cannot attribute this result to early PNC visits alone.

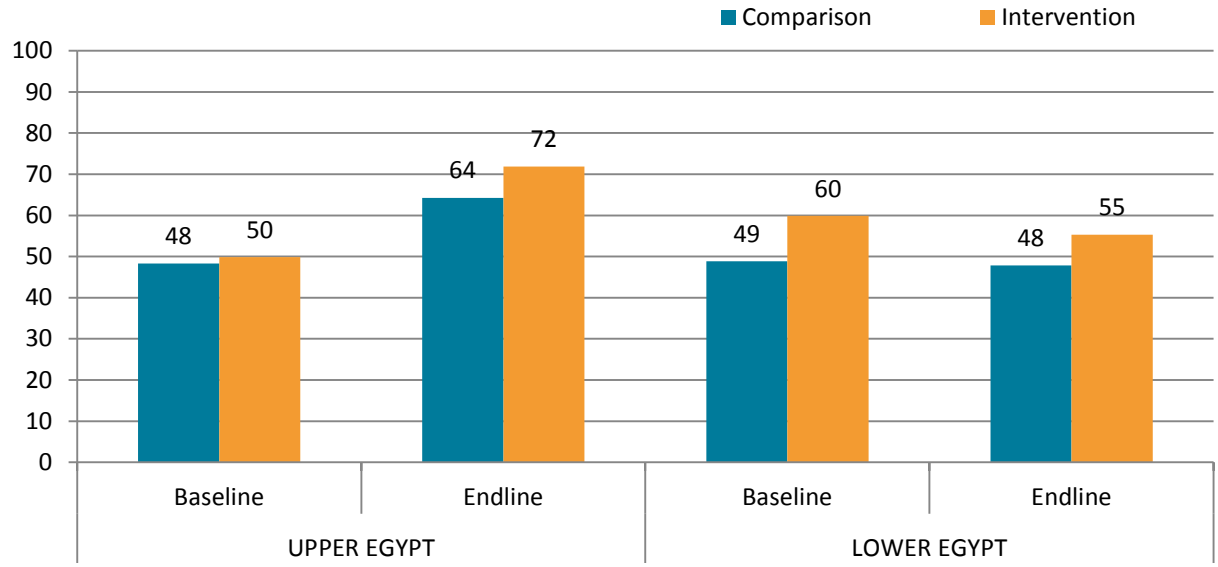
Figure 6. Timing of First PNC Visit – Intervention areas



As an ENC practice, skin-to-skin contact (placing a newborn on the mother's chest immediately after birth) is quite low in Lower Egypt intervention and comparison areas as well as in Upper Egypt comparison areas. The rate was high in Upper Egypt intervention areas at 83.1%, probably due to increased emphasis and interest on the part of CHWs to promote this "new" practice. More commonly, newborns are dried immediately after delivery and wrapped in clothes or a blanket.

As shown in Figure 7 below, initiation of breastfeeding within one hour of delivery increased in Upper and in Lower Egypt—37.8% to 71.2% in Upper Egypt and 35.1% to 42.4% in Lower Egypt. Exclusive breastfeeding in Upper and in Lower Egypt in intervention and in control areas remained closer to 50% in all sites. Women's knowledge of the importance of exclusive breastfeeding is high, but continuation for the recommended full six months is low across Egypt.

Figure 7. Initiation of Breastfeeding within One Hour of Delivery



Objective 2: Increased knowledge and use of key MNCH-FP-Nutrition behaviors by women and men

Key achievements and contributions to improved health outcomes

- As expected, SMART achieved greater gains in knowledge than behavior. This is likely due to the short duration of the program. LCDAs delivered community-level interventions for approximately 12 months. Nevertheless, knowledge and behavior changes were significant and in the right direction to support improved nutrition outcomes, and in some cases (knowledge of dangers signs in pregnancy, delivery, postpartum and newborn) greatly exceeded targets (as seen in Table 3).
- Small decreases in use of modern contraception for family planning may be attributed to what appears to be an overall national decline in social acceptance and use of family planning during this period. Declines in SMART areas were significantly less than in comparison areas.
- SMART's success with increasing knowledge and behaviors occurred consistently among all socioeconomic groups. Coverage results by wealth quintile showed gains were distributed more equitably than in comparison areas. For some indicators SMART showed higher levels of coverage and knowledge among women in the poorest quintile (as seen Figures 9 and 10).

The SMART baseline survey revealed lack of knowledge about key maternal and newborn health care issues in SMART program areas. For example, the baseline showed that despite high utilization of ANC, levels of appreciation of the importance of IFA and breastfeeding were low, and the belief that babies should be fed solid foods at four months of age was common. Women's knowledge about optimal behaviors and danger signs during pregnancy and during and after delivery were generally low and women's knowledge about newborn danger signs was also limited.

SMART, through support to UCDAs, supported training of 1,200 locally-selected CHWs using a comprehensive health and nutrition package. Training developed skills to provide counseling and education for mothers, fathers, grandmothers, and community leaders through home visits and through CHW-facilitated group counseling. CHWs began home visits in October 2012, in which they counseled women as well as their husbands and mothers-in-law on best practices in health care and nutrition for mothers and children. CHWs sought to visit all households with pregnant women and children under two years of age at least once per month. Counseling included information on breastfeeding and use of IFA tablets for pregnant women, and encouraged referrals to local service providers. CHWs also organized birth preparedness classes for women in their communities who were in the same stage of pregnancy, especially focusing on first pregnancies and women with previous poor outcomes. Classes were offered weekly for women with first pregnancies (total of 24 classes), and monthly for all other pregnant women.

CHWs also conducted bi-monthly growth monitoring sessions for all children aged 6-23 months. In these sessions children's lengths and weights were measured and recorded, and information shared with the caretaker. After the growth monitoring sessions, Afterwards, CHWs held weekly, biweekly, and monthly nutrition education and cooking demonstration classes for growth promotion. Between 30 and 50 people participated in each session, and session reports revealed that, for many community members, the information provided was new. For example, many parents did not realize that their child was stunted. CHWs routinely referred community members to health care facilities; in some governorates, private as well as public health care facilities reported an increase in attendance.

According to the endline survey, in Upper and Lower Egypt the majority of women interviewed knew their local CHW before the program started. When women were asked about services

provided by the SMART program, the majority of mothers mentioned that the CHWs were making home visits as well as running health and nutrition sessions on the CDA premises.

In Upper and in Lower Egypt, most mothers were familiar with and had visited CDA health clinics in their communities. Additionally, they confirmed that visits to the clinics and the health education messages helped them not only during pregnancy, but also after delivery. Mothers noted the value of health messages in learning the importance of breastfeeding for the child's first two years of life, identifying typical health problems during pregnancy and the postpartum period, recognizing childhood diseases, and receiving lessons in basic hygiene.

According to the endline data, women's knowledge about pregnancy, delivery, the postpartum period, and newborn care was higher in Upper Egypt and in Lower Egypt SMART intervention sites than in comparison locations. (See Table 3.) Knowledge levels of women on three complications after delivery and for newborn danger signs were observed to be higher among women in poorest quintile in the intervention areas.

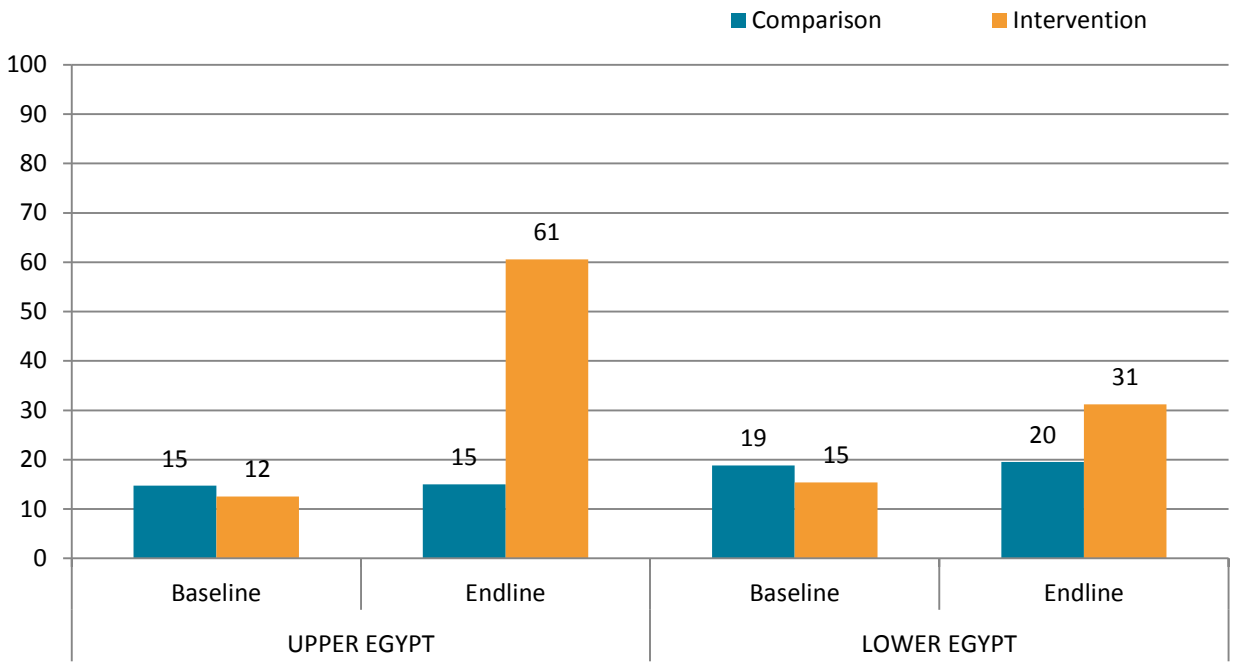
Table 3. SMART Improvement in Health Knowledge in Intervention and Comparison Areas

INDICATORS	UPPER EGYPT (%)			LOWER EGYPT (%)		
	Intervention	Comparison	Diff	Intervention	Comparison	Diff
	Endline	Endline		Endline	Endline	
Women's knowledge						
Women's knowledge of at least three complications *during pregnancy*	63.0	17.8	45.2	31.5	20.5	11
Women's knowledge of at least three complications *during delivery*	46.1	11.5	34.6	19.2	9.6	9.6
Women's knowledge of at least three complications *after delivery*	60.6	15.0	45.6	31.2	19.5	11.7
Women's knowledge of at least three *newborn danger signs*	67.0	25.8	41.2	39.7	29.8	9.9
Number of women	(875)	(865)	-	(799)	(821)	-
Women's knowledge among poorest						
Women's knowledge of at least three complications after delivery *among poorest wealth quintile*	60.0	13.0	47	33.0	18.0	15
Women's knowledge of at least three newborn danger signs *among poorest wealth quintile*	65.0	21.0	44	39.0	23.0	16
Number of women	(875)	(865)	-	(799)	(821)	-
Men's knowledge						
Men's knowledge of at least three complications *during delivery*	40.7	31.1	9.6	35.2	33.8	1.4
Men's knowledge of newborn danger signs	52.3	45.8	6.5	30.6	28.6	2
Number of men	(730)	(747)	-	(683)	(739)	-

According to the endline evaluation, men's knowledge of complications during delivery and newborn danger signs were observed to be higher in the intervention areas in Upper Egypt, however, in Lower Egypt the differences were not large.

Figure 8 shows improvement in women's knowledge of at least three danger signs after delivery from baseline to endline. Greater improvements were observed in knowledge levels of women in intervention areas.

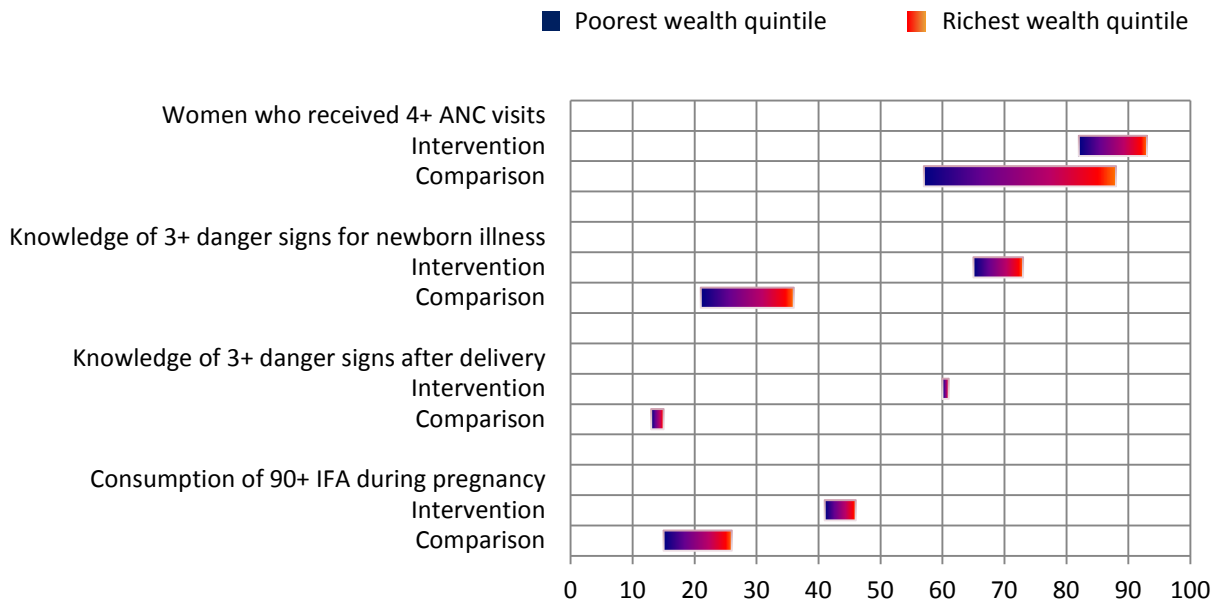
Figure 8. Women's Knowledge of 3+ Danger Signs after Delivery



Equity in coverage

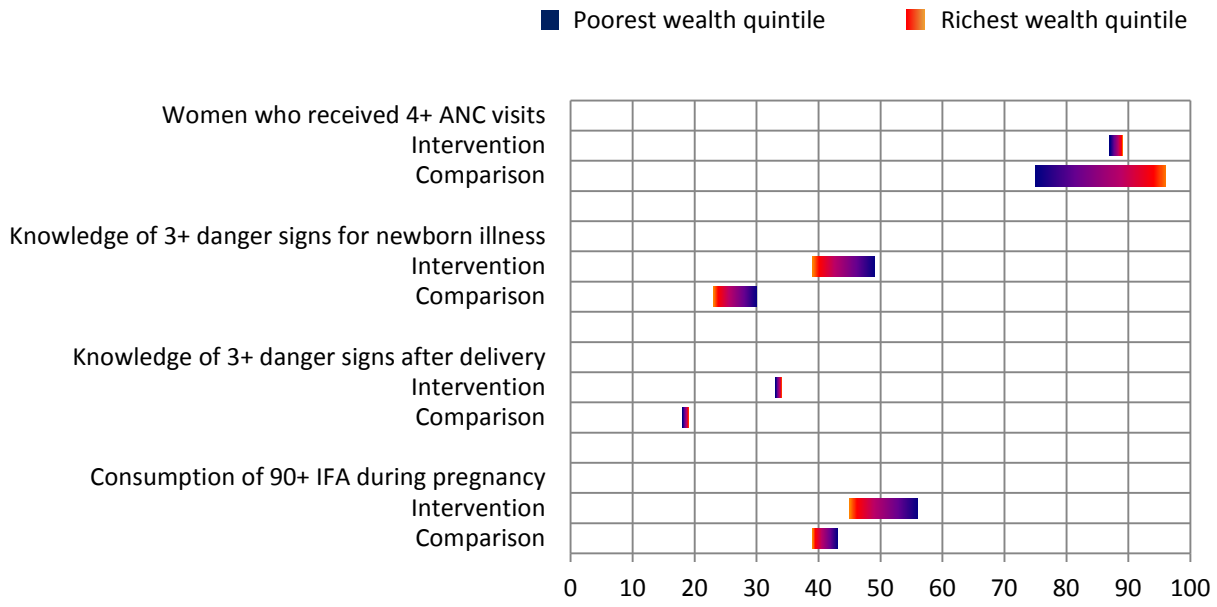
Socioeconomic inequities in coverage levels are shown for the poorest 20% (blue shade) and the richest 20% (red shade) of the population in Figures 9 and 10. The longer the bar between the two groups, the greater the inequality. The short lengths of the bars indicates a more equitable coverage and knowledge levels among women in intervention areas compared to comparison areas. In the intervention areas, SMART pro-poor intervention strategy resulted in closing the divide between the poorest and the richest population in both Upper and Lower Egypt.

Figure 9. Socioeconomic inequities in coverage – Upper Egypt (endline data)



Coverage results by equity are presented in Figure 10 for Lower Egypt. Similar to results in Upper Egypt, SMART was able to achieve equitable results in Lower Egypt. It should, however, be noted that for the indicators "Knowledge of 3+ danger signs for newborn illness" and "Consumption of 90+ IFA during pregnancy" the bars are longer for intervention areas but the shade is reversed, showing higher levels of coverage and knowledge among women in the poorest quintile.

Figure 10. Socioeconomic inequities in coverage – Lower Egypt (endline data)



Objective 3: Increased capacity of CDAs to implement community-based strategies to improve MNCH-FP-Nutrition

Key achievements and contributions to improved health outcomes

- SMART built organizational and technical capacity of over 100 NGOs with little previous health experience, but with strong ties to their communities. This turned out to be a key variable that allowed local initiatives to launch and continue in an unstable political period.
- Using results from organizational assessments, SMART tailored its support to CDAs so they received the knowledge, skills, tools and materials they needed to deliver and monitor a high quality package of MNCH-FP-Nutrition interventions.
- CDAs and community members appreciated the structured health package, which further strengthened their commitment to sustain and expand MNCH-FP-Nutrition focused strategies.
- To date, 32 CDAs have received a total of 33,767,000 Egyptian Pounds (US $4.74 million) to scale up the SMART model. Additionally, 15 SMART CDAs received funding for 28 complementary projects with a total value of 17,239,215 Egyptian Pounds (US $2.42 million).

The public health system in Egypt faces many challenges, including insufficient resources to provide quality care that reaches the most marginalized populations. Obviously, the national political context also affected public health services. The SMART program therefore built on earlier community outreach health programs that worked through CDAs, specifically 12 CDAs, two in each governorate, to oversee five to 10 local CDAs. (See Box.) Local CDAs were responsible for implementing and monitoring all SMART activities, including hiring and supervising CHWs and jumpstarting community health committees to discuss local issues. SMART provided UCDAs with training in project management, budgeting, financial and resource management, fund raising, strategic planning, time and resource management, report writing, and staff development and sustainability planning. They, in turn, trained and supported the local CDAs. A total of 112 umbrella and local CDAs were supported under the SMART program. Although some established umbrella CDAs already had organizational capacity, they still benefited from SMART training and support in how to integrate health as a part of the package of interventions provided to the local community.

As a demonstration of the impact of and support for the work of the CDAs and CHWs, the Social Fund for Development and other donors provided an additional two years of funding to replicate the model in areas not currently covered by the SMART program in all six governorates. Many CDAs have also successfully raised funds to extend or expand their activities: 32 CDAs received a total of 33,767,000 Egyptian Pounds (US $4.74 million) to scale up the SMART model. Additionally, 15 SMART CDAs received funding for 28 complementary projects with a total value of 17,239,215 Egyptian Pounds (US $2.42 million) in five of the program governorates.

CDA Capacity-Building

Twelve umbrella CDAs and 100 local CDAs were trained in:

- Health and nutrition
- Family planning
- Gender
- Proposal development
- Financial management
- Sustainability and fundraising

As of May 2014, 32 CDAs received funding to conduct SMART activities in new areas. 15 CDAs received additional funding for new, complementary programs in the same areas.

Objective 4: Increased the knowledge base of factors associated with stunting (including those that are gender-specific) and approaches to reduce stunting and neonatal mortality

Key achievements and contributions to improved health outcomes

- SMART found evidence of increased knowledge about nutrition issues and improved infant feeding practices during the program period in local communities, but was not able to demonstrate measurable improvements in stunting within the short duration of the program.
- The stunting study found key issues that must be addressed successfully to reverse the trend of growing chronic malnutrition throughout Egypt. Junk food consumption was pervasive, increasing with age, and peaking among children 18–23 months old. This practice was supported by fathers, grandmothers, and even some health providers. Mothers did not breastfeed children frequently enough and the duration of breastfeeding was short. Mothers were also reluctant to introduce family foods, foods cooked with fat (i.e., oil or butter), chicken meat or liver, and red meat or fish prior to one year of age. This limited the variant and frequency of foods given.
- Recommendations based on key findings from the stunting study have been shared throughout SMART coverage area among community members, health care providers and policy makers, and will be further disseminated in peer review journal articles.

The 2008 EDHS showed that 29% of children under the age of five years were stunted, but exact causes are unknown. Over the past few years, the rates of stunting have risen dramatically, especially in Lower Egypt, and it has been suggested that outbreaks of avian flu (leading to culling of poultry populations) and increased food prices may have contributed to the rise in stunting. To understand the drivers of malnutrition, the SMART program, with technical assistance from the MCHIP headquarters nutrition team, conducted a four-part operations research study. One part (Part 1) was a longitudinal study, examining factors associated with the growth of children in the first year of life, including the role of dietary intake, illness, and sleep. Data collection was completed in late June 2014. Perceptions and beliefs about maternal diet during pregnancy and the postpartum period, weight gain during pregnancy, and FP were assessed in Part 2 of the study. Several key findings are highlighted in this section (see below), although full results will be forthcoming in several peer review journal articles.

The study also included a component using the Trials of Improved Practices (TIPS) methodology (Part 3), which consisted of three visits with each participating mother in the program area to determine current infant and young child feeding practices and knowledge about optimal practices. Mothers were asked by local social scientists and nutritionists from the research team to try healthy feeding practices that they were not currently using, and researchers visited them again after one week to determine whether the mother used the practice(s), and to gain an understanding of what mothers liked/did not like about the practice(s). In-depth interviews were also held with fathers and grandmothers to gain an understanding of how they care for, feed, and advise mothers on infant and young child feeding in the home (Part 4).

The study found that mothers were committed to breastfeeding, but exclusive breastfeeding was hindered by cultural barriers. Egyptian children are breastfed on demand, and mothers understand the benefits of breastfeeding. However, mothers did not breastfeed their children frequently enough and the duration of breastfeeding was short. Mothers introduced liquids and *"light foods,"* such as yogurt, biscuits, and potatoes before six months. Only one-quarter of mothers exclusively breastfed their infants. Many mothers perceived that either they did not have enough breast milk and/or their breast milk was of inferior quality, seen as *"too thin"* or

"weak" or *"light."* Perceptions of insufficient breast milk were an impetus for early introduction of foods, as early as the first month of life (i.e., giving biscuits with milk or tea), while light foods were commonly given at three to five months of age.

TIPS gives mothers the chance to explore how they can take action themselves to improve their children's health and nutrition

Generally, mothers were fearful of introducing foods to their children at six months of age that might cause illness or difficulty with digestion. For example, mothers were reluctant to introduce family foods, foods cooked with fat (i.e., oil or butter), chicken meat or liver, and red meat or fish prior to one year of age. This limited the variety, quantity, and frequency of foods, which was a common feeding problem with all children. Small, infrequent amounts of *"light"* foods dominated children's diets through the first year of life, and animal-source foods, fruits, and vegetables were generally lacking.

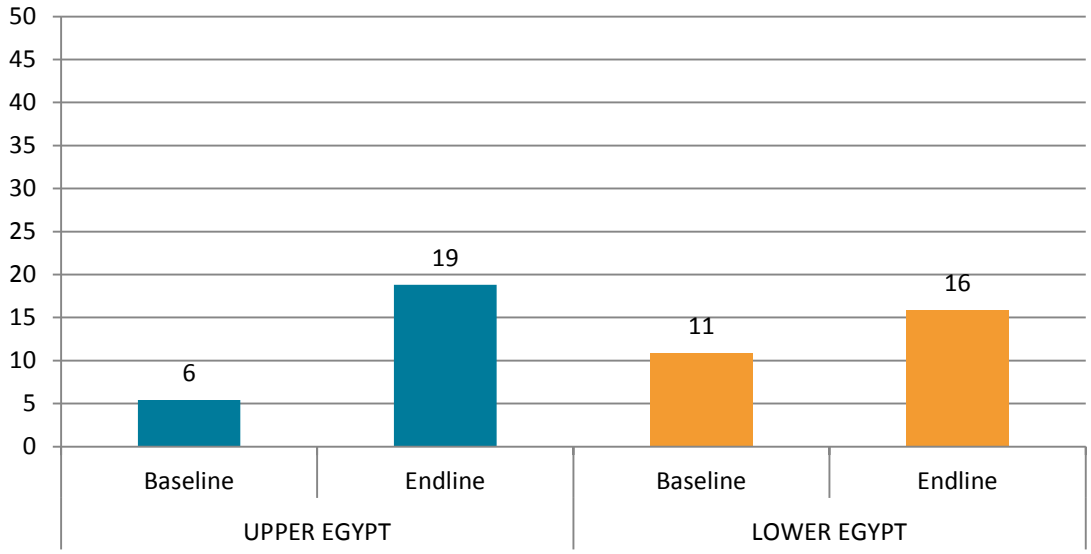
Junk food consumption was pervasive, increasing with age, and peaking among children 18–23 months old. This practice was supported by fathers, grandmothers, and even some health care providers. Mothers perceived *"junk foods"* (e.g., commercial store-bought small sponge cakes with cream filling, chips, and sugary biscuits that are high in fat and/or sugar and of low nutritive value) to be essential complementary foods that are easy to give to children; these types of food often replace other nutritive foods. The TIPs practice of negotiating with the mother to try a new practice was a powerful strategy for empowering mothers, and motivating them to make feasible and culturally appropriate changes in their children's diet. With just one counseling visit, mothers were able to carry out practices that were new to them, and they saw improvements in their children's health and appetite (i.e., the children were "eating more," "less ill").

Final results from the stunting study have been summarized in two reports, a counseling guide based on TIPs, and two technical briefs in English and Arabic. (See Annex 4.) These findings (TIPs, longitudinal) will also be published in peer-reviewed journals in the near future.

Based on initial results from the TIPs part of the study, the SMART program carried more counseling work with mothers in all districts of the six governorates and developed a recipe book. Recipes were based on traditional and available ingredients so that families could provide a balanced diet for their children that would complement nutrition counseling. The recipes were used for the healthy cooking sessions that were carried out with mothers in all villages.

Figure 11 below shows improved intake of more diverse food containing at least three food groups among infants and young children based on the improvement of knowledge of mothers about healthy foods and the effect of CHWs as agents of change of behaviors within their communities. Although this data is encouraging, the amount of food given to children is not known. Quantity as well as quality need to be taken into consideration when assessing whether the diet is adequate.

Figure 11. Children Fed 3+ Food Groups in a Day – Intervention areas



Stunting is clearly still an issue in Egypt, particularly in the historically underserved areas where the program worked. In these areas, it is important to note that it is difficult to demonstrate measurable improvements in stunting within the short duration of the SMART program. However, there was evidence that knowledge about nutrition issues did improve during the program implementation period in local communities.

The average stunting rate for the SMART program is 20% as calculated from the program monitoring database. For the Upper Egypt areas it was 19.2% and for the Lower Egypt areas it was 25.4% as measured during the last quarter of the program implementation with approximately 70,000 children under 24 months of age.

The underweight rate (below -2 SD following WHO standards) for Upper Egypt is 16.4% in comparison with a baseline rate of 17.4%. In Lower Egypt, the rate was 8% in comparison with a baseline rate of 13.2%.

According to the endline qualitative survey, health care providers were asked about any changes in behavior related to child feeding and nutrition seen before and after the program. Respondents in Upper Egypt reported that mothers were not aware of good nutrition practices before the program, and that they benefited from SMART's nutrition guidance and classes. For example, through program activities, local women have learned that it is important to breastfeed exclusively until their children are six months old, and more women are visiting the local health unit.

Objective 5: Improved awareness of the impact of gender roles in improving MNCH-FP-Nutrition outcomes

Key achievements and contributions to improved health outcomes

- SMART trained all UCDAs in gender concepts and supported gender analysis in six governorates. CDA staff were actively engaged in conducted these analyses thereby building their capacity to continue to conduct similar analyses on ongoing basis.
- LCDAs received gender awareness training and implemented activities with over 10,000 men and women to encourage dialogue around gender and social equality and its impact on health.
- SMART developed and supported implementation of an innovative "Family Solidarity Training Guide" that has been widely appreciated for its cultural appropriateness and non-threatening approach.
- CHWs reported that knowledge of gender concepts helped them in their personal lives and also helped them communicate effectively with mothers, fathers, mother-in-laws and father-in-laws.

According to a 2010 gender assessment conducted by USAID/Egypt, gender inequalities persist in Egypt and contribute to poor health outcomes of women and children. Gender inequalities also affect men. Unequal power relations are evident within families and communities, and in health, educational, judicial, and economic institutions. Inequality can restrict women's use of health care services and increase the risk of morbidity and mortality. These factors are particularly important during pregnancy, childbirth, and the postpartum period, when skilled service providers are needed.

SMART tackled issues of gender inequality in several ways. First, the program sought to increase community awareness of the impact of gender roles on health outcomes, with a particular focus on male involvement. SMART worked with UCDAs to help them carry out a basic gender analysis in each governorate, which served as a program planning tool and guide for examining social relations in communities and households in order to maximize the health outcomes within specific communities, allowing interventions to be locally appropriate and women-empowering. Through participatory training and application of theory while conducting the gender analysis, staff received a practical understanding of how gender roles affect all aspects of life. The result was increased capacity and awareness regarding gender equality issues in Egypt among partner CDAs, community leaders, and project officers.

Gender assessments in all six governorates found that CDA board members, project managers and newly selected CHWs generally had low awareness of gender concepts. In SMART communities, typically gender equality was a very sensitive issue and traditional gender roles and attitudes (such as norms against women inheriting property) were deeply entrenched and often mistakenly connected to religion. Men and women acknowledged that violence was perpetrated against women and early marriage was still common in many areas. CDA staff felt that changes in gender roles and relations would require a long-term process that could not happen within a 14 month program. Additionally, implementing gender transformative strategies was thought to be a big challenge in the context of rising religious conservatism and, in some cases, resentment of Western countries' interest and interference in practices such as Female Genital Circumcision. For this reason, SMART chose to tactfully build understanding among men and women about the rights of women and children and the benefits to family and

society of norms supporting gender equality. SMART's aim was to ensure gradual gender sensitization and responsiveness at the community level and to avoid any backlash during this particularly sensitive period. (See also, Annex 2 Selected Success Stories, particularly #s 1, 4, 5 and 8 which highlight gender context).

Based on the gender assessment findings, workshops were conducted in the six governorates to introduce the gender analysis tools to SMART partners. Gender workshops were popular with CDA program partners, and the trainers who were selected were eager to be a part of cascade training in local communities.

Additionally, the SMART program drafted a program-wide gender equality strategy, which framed SMART's gender approach across all activities and with implementing partners. Then, in December 2012, SMART developed the Family Solidarity Module, using a training methodology that builds on the principles of adult learning and active participation. This module was composed of four units and 12 training sessions:

- Unit 1: Main concepts of gender and social roles
- Unit 2: Health and solidarity of the family
- Unit 3: Violence against women
- Unit 4: Self-empowerment and leadership

With the Family Solidarity Module as a foundation (see Box 2), SMART built the capacity of CHWs and community health committees to raise awareness and initiate dialogue around gender relations in the communities where they worked. SMART also encouraged local organizations to integrate an awareness of gender roles within their routine activities through a series of Training of Trainers workshops—first at the national level and then in each governorate.

Family Solidarity Module

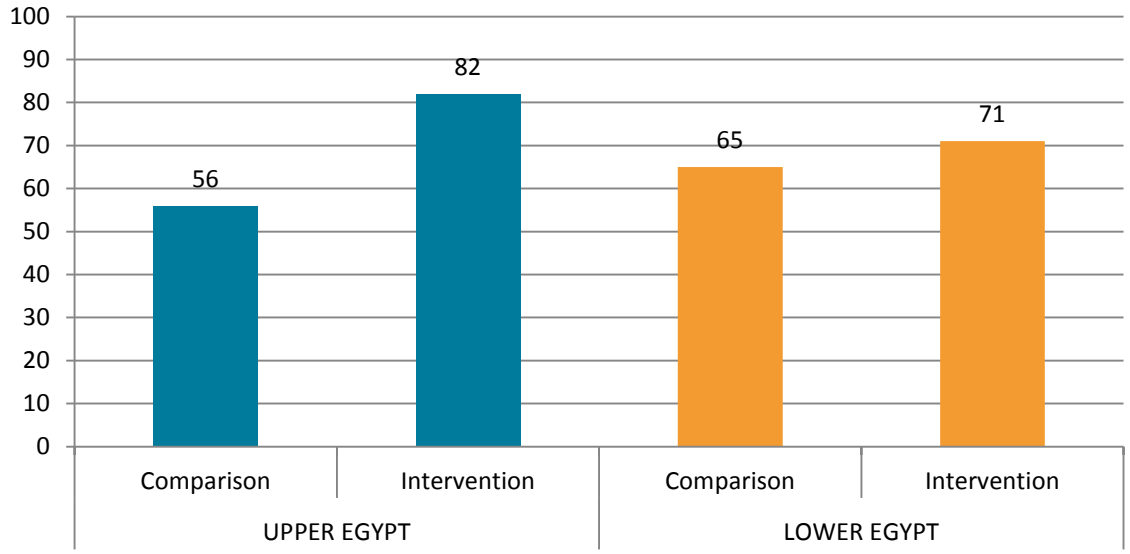
The Family Solidarity Module was developed as a tool to train CHWs how to introduce the concepts of gender roles, social and gender-based inequalities, domestic violence, and women's rights during each routine home visit. Additionally, the module sought to stimulate discussions and behavior change with community members regarding the division of work and decision-making in the household.

The Family Solidarity Module became a popular approach locally for the following reasons:

- Facilitators were able to tailor sessions based on their local context.
- Sessions were interwoven with popular media—Egyptian movies and songs along with sayings and mottos that reflect culture.
- Local current events sparked reflection on local customs and discussion about the connections between gender, human rights, and health.
- Health messages and gender concepts linked social roles with health, including the impact of violence against girls and women.
- Hot topics within the module included Islam and gender, gender and leadership, women's dress codes (changes over time and how dress reflects one's identity), and shifts in gender and social norms over time.

A gender approach was built into all activities in the SMART program, ensuring greater male involvement in protecting women's and children's health. Figure 12 shows that the percentage of men who attended at least one ANC appointment with their wives was higher in SMART intervention areas.

Figure 12. Percentage of Husbands Accompanying Wives for ANC Visits



Similarly, more men received advice on pregnancy spacing in program intervention areas than in comparison areas, as seen in Figure 13.

Figure 13. Men Receiving Advice on Pregnancy Spacing

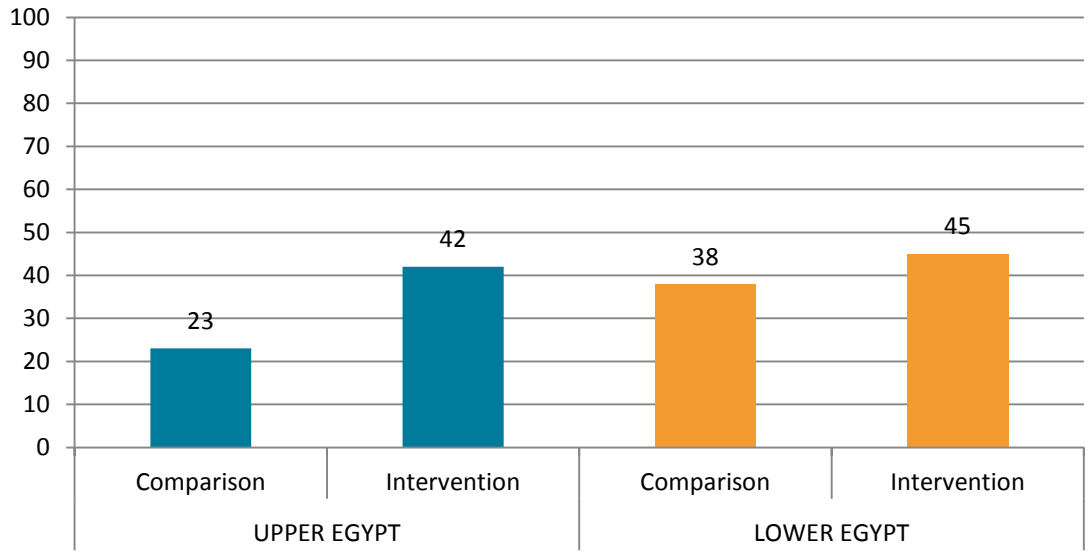
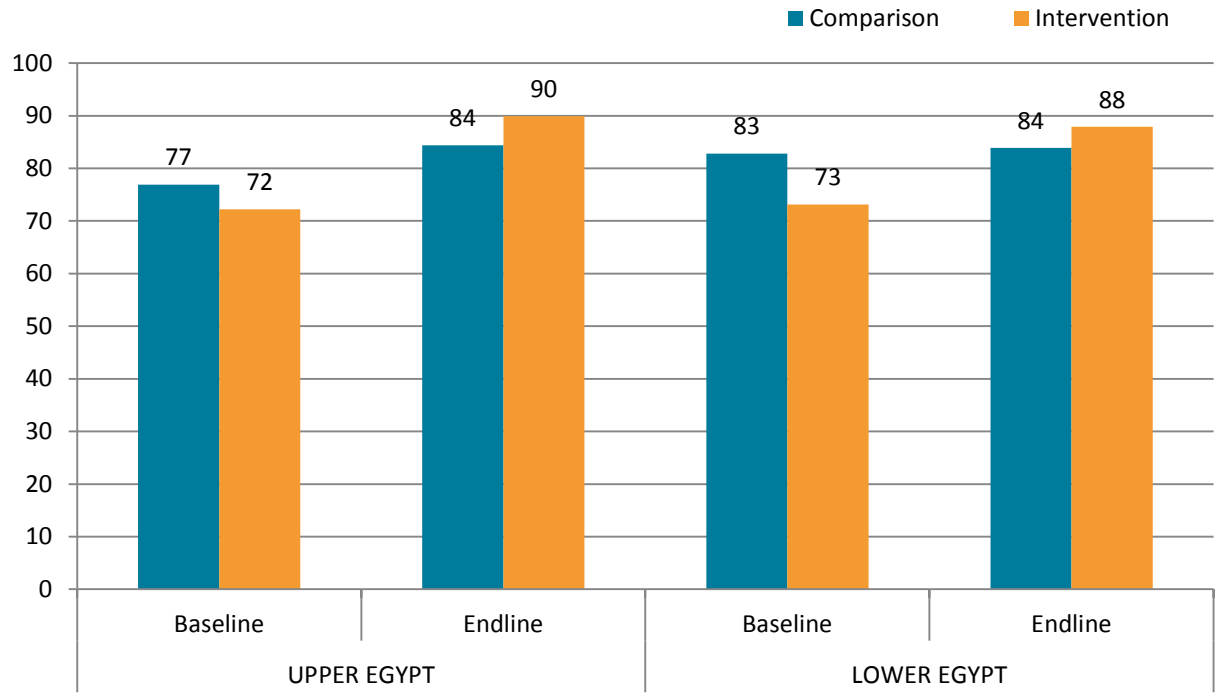


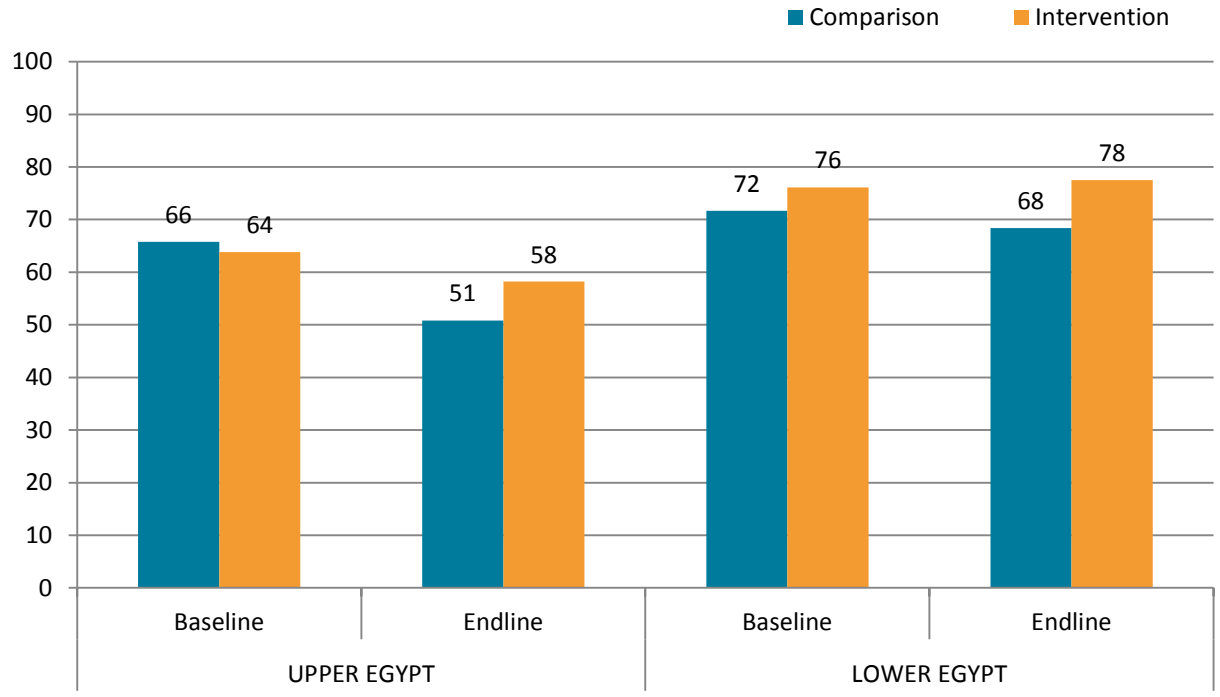
Figure 14 shows the increase in the percentage of couples who have joint decision-making for family planning, as a result of gender interventions in the six governorates where the program was implemented.

Figure 14. Joint Decision-Making for Family Planning



The effect of commodity insecurities in Egypt during the period of political unrest led to decreased use of modern family planning methods across the country. In the comparison areas in Upper Egypt, there were dramatic decreases in the use of modern family planning methods in comparison with intervention areas. In Lower Egypt, the effect of commodity insecurity was less prominent, as seen in Figure 15.

Figure 15. Use of Modern Family Planning Method



Cross-Cutting Themes

The SMART program touched on a number of cross-cutting themes, including equity, a community approach, quality of service provision, integration of services, and scale-up.

Equity: Poor women are prevented from accessing needed services because good quality ANC, PNC, and child health care are unavailable at many public health clinics, and the costs of private care and transport are high. Under SMART, home visits by CHWs ensured that women and their families were counseled on danger signs so that they could identify and seek care quickly when necessary. Mobile clinics, organized by SMART partner organizations and staffed by volunteer service providers, also provided women living in remote or isolated areas with quality health care services. In addition to targeting underserved families, SMART focused efforts on ensuring gender equity within program intervention areas through activities developed for the Egyptian context that sought to increase women's and men's ability to be involved in making decisions about health and nutrition issues.

Community: Basing health care services in the community and involving community members in overseeing service provision—in private, NGO-run, or government clinics staffed by local people—is a good way to ensure that local needs are met and that problems of access and quality are resolved communally. By raising awareness in families and in the community about the significance of nutrition during pregnancy and lactation, as well as the importance of exclusive breastfeeding and healthy complementary feeding, SMART built the capacity of local stakeholders to address health and nutrition issues in their community. Local CDAs that have a history of being present in and connected to the communities were a critical link to these communities. Many of these CDAs that did not previously have a mandate to focus on health issues were provided with the knowledge and practical experience needed to improve health, particularly the health of women and young children in their local villages. CHWs empowered with new knowledge and skills built on their existing relationships with local women in their communities to support families' to meet their health information needs, which increased the number of referrals to health care facilities and built a demand for quality health care services for local community members.

Quality of Service Provision: On-the-job training for physicians and nurse/midwives is essential to ensure that the knowledge and skills of health care professionals are updated. Involving health care service providers in the SMART program's focus on maternal and child nutrition has broadened these providers' skills and knowledge. For example, prior to their involvement with SMART, many of these service providers were not aware of the problem of child malnutrition and stunting in their communities. SMART created links with Egyptian professional organizations to ensure that SMART materials and training were shared more broadly with private and public health care providers. Because the majority of women give birth in a clinic or hospital, many neonatal, perinatal, and postpartum complications and deaths can be avoided by training birth attendants how to identify danger signs in newborns and mothers and how to respond accordingly.

Integration of Services: The links between individual mothers, their families, the community, and the service providers at the health units have been strengthened by the interventions of CHWs, who can help pregnant women, follow up after deliveries, check on vaccination schedules, and provide many other vital non-medical services that can save lives. Research has proven that improved ANC has resulted in fewer complications during childbirth and the postpartum period. If pregnant women and their families are given relevant information and are supported at home—especially during first pregnancies—and are encouraged to have at least four ANC checkups, the demand for better quality, and more easily accessible ANC will

increase. SMART CHWs also helped integrate nutrition and FP with maternal and neonatal health care in health education sessions and behavior change communication.

Scale-Up: Training service providers in ENC techniques is a significant area in which SMART achieved widespread impact and sustainability. During the course of the program, SMART trained hundreds of doctors how to use the Helping Babies Breathe (HBB) technique for neonatal resuscitation. HBB training focuses on the window of opportunity—approximately one minute—during which a skilled birth attendant can recognize the problem of a non-breathing newborn and react appropriately. Doctors who are trained in these skills can save many lives or avert brain damage. SMART facilitated HBB training for service providers directly in the six program governorates. Additional training was provided across Egypt by professional associations. The Egyptian Neonatal Network trained 15 trainers and 200 physicians and nurse/midwives. The Egyptian Menopause Society trained 20 trainers and 200 physicians. The Suez Canal University trained 30 trainers and 420 nurse/midwives and physicians. Al Azhar University Medical School for Girls trained 20 trainers and 200 nurses and physicians.

Another initiative that has been introduced by SMART and that will continue to grow is Warm Hug Care (kangaroo mother care). This method, which is ideal for caring for a preterm or low birth weight baby, is also useful for all newborns. All service providers and CHWs involved in the program were trained to recommend this technique and counsel mothers about it. Collaborating partners and Egyptian lactation consultants trained 24 trainers and 150 physicians and health care workers in this technique.

Recommendations and Way Forward

Community-based approach to deliver health and nutrition messaging: A community-based approach to deliver health and nutrition information and counseling support to women and their families—the SMART approach—is an effective way to ensure community acceptance of healthy behaviors. CDAs are highly-connected with an extensive network in their catchment areas and should continue to be prioritized as development partners to deliver high-quality health and nutrition services that are appropriately targeted and relevant for the local population. CHWs can be agents of change in their communities, enabling knowledge acquisition and improved behaviors at the household level; however, they need structured support and targeted capacity-building. For communities to adopt positive health and nutritional practices, service providers and NGOs should gain CHWs' trust, address their needs, and seek solutions that work within the local context. Early involvement of the community in designing and planning the intervention will ensure long-term sustainability of the healthy behaviors.

Initial social mapping of intervention areas defined a number of high-caseload, private health care providers whom SMART invited to participate in trainings on community health practices, new evidence-based medicine, and effective interventions like KMC, HBB and IYCN. As trainers were often well-known and even leaders in their fields, providers showed interest in attending the trainings. As a result of the trainings, many providers began offering services to their communities that they were not offering before SMART due to lack of knowledge and/or skills to perform certain procedures. These health care providers were able to provide essential services, particularly maternal and child nutrition promotion and reinforcement of simple primary health care messages to poor families and rural communities through mobile clinics, maternal and child health consultation days, and health education campaigns.

Areas for Improvement of the SMART Approach: Despite increases in the majority of indicators, the SMART program fell short of reaching the ambitious targets set for five indicators (Indicators 1.2, 1.4, 1.7, 1.8, 1.9). These deviations from the achieved versus the targeted results could be attributed to a number of potential factors. As noted earlier in this document, the effect of commodity insecurities in Egypt during the period of political unrest led to decreased use of modern family planning methods and availability of iron folate acid across the country. In future programs, availability of key commodities must be addressed.

A longer period of implementation would likely yield even greater gains for the majority of indicators. During expansion of the SMART model, decision makers should consider further strengthening support and supervision of CHWs to ensure greater retention of knowledge and skills. It would also be important to explore further barriers and solutions to ensuring immediate postnatal home visits.

Further research, supervision and training for health care providers and CHWs in Egypt about nutrition and prevention of stunting is needed: The underlying causes of malnutrition and stunting, including the socioeconomic factors specific to Egypt, must be fully-understood by health care providers and CHWs. Acknowledging these underlying causes and emphasizing the importance of role models and supportive supervision could prove to be very effective in addressing the key barriers and misconceptions related to infant and young child feeding. Education materials related to the prevention of stunting – beginning with exclusive breastfeeding and followed by healthy, complementary feeding practices – should continue to be developed for health care providers to use in counseling mothers and families about breastfeeding and complementary feeding practices. These educational materials should be based on WHO recommendations and should utilize culturally-appropriate, targeted messages

developed during the program. In addition, mothers' support groups that also include grandmothers, applied in SMART intervention areas, and fathers' support groups will strengthen knowledge and behavior change at the community level. Advocacy is needed to develop a national policy on junk food, and routine surveys (such as the EDHS) should collect data on junk food consumption by young children. Generating awareness in communities about optimal maternal nutrition and infant feeding, along with decreasing and eliminating the intake of junk food, can positively impact the growth of children and the entire family's health and well-being.

Uptake of SMART materials with Egyptian service providers from the NGO, private, and public sectors: Although SMART materials have been shared broadly in the six program governorates during the life of the program, the program's vast resources should be taken up by other NGOs, private providers, and the MOHP. SMART has focused the last six months of the program on developing and rolling out a dissemination plan in which key program stakeholders at the governorate and national levels have received SMART tools and resources and have been enabled to use these tools and resources as broadly as possible.

Ideally, the MOHP will authorize inclusion of the SMART-developed 1,000 Day Series of guidelines for doctors and nurses, as well as the TIPs counseling guide, in all medical training curricula, and will provide in-service training for those who have not yet participated in this training. MOHP support for these initiatives is especially important to ensure that infant and young child feeding practices are improved for all children, the HBB neonatal resuscitation technique is used appropriately, and KMC/Warm Hug Care is provided for preterm babies.

Government scale-up and time are needed for long-term success and behavior change: Without government support and buy-in, health and nutrition interventions will remain localized. And although improving knowledge about health and nutrition can take place over short periods of time, behavior change takes a longer, more sustained effort. By providing the resources needed as well as evidence of the success of the SMART interventions, this program sought to enable the MOHP and local decision-makers to roll out similar activities in other areas of Egypt in alignment with national development goals. It is encouraging that the Social Fund for Development and other donors provided additional funding to CDAs to replicate the SMART model in areas that were not previously covered by the SMART program. Interestingly, the Social Fund for Development was also interested in SMART's approach because it promoted women's employment, thereby furthering women's opportunities to earn an income and contribute to the economic well-being of their families.

Annex 1: Indicator Matrix

OUTPUT INDICATORS	SOURCE	FREQUENCY	UPPER EGYPT			LOWER EGYPT			SMART		TARGET
			BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	
Outcome Indicator: % of newborns, delivered in the last 2 years who received Essential Newborn Care (ENC)	Household survey	Baseline and endline	20.3%	25.0%	4.7%	14.7%	20%	5.3%	17.5%	22.5%	22.5%
1.1 Number of women and children receiving MNH-FP services from mobile teams organized by CDAs.	Routine Data	Life of Project	Women: 10,054 Children: 16,168 Total: 26,222			Women: 5,478 Children: 8,389 Total: 13,867			NA	38,000	7,000
1.2 Percent of CHWs who can correctly identify the seven danger signs for newborns	Survey	Baseline and endline	28.0%	61.4%	33.4%	28.0%	44.2%	16.2%	28.0%	52.8%	95.0%
1.3 Number of persons trained: doctors, nurses and CHWs (male and female) by SMART on MNH-FP Nutrition services	Training database	Life of Project	Female: 2,941 Male: 917 Total: 3,857			Female: 360 Male: 1,308 Total: 1,668			-	5,525	1,500
1.4 % of women with children under 2 who received 90+ iron-folate tablets during their last pregnancy (children who were delivered prior to the baseline/endline surveys	Household survey	Baseline and endline	32.2%	33.7%	1.5%	30.6%	34.4%	3.8%	31.4%	34.1%	50.0%
1.5 % of women with	Household survey	Baseline and endline	73.6%	87.2%	13.6%	77.0%	88.2%	11.2%	75.3%	87.7%	79.4%

OUTPUT INDICATORS		SOURCE	FREQUENCY	UPPER EGYPT			LOWER EGYPT			SMART		TARGET
				BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	
	children under 2 receiving at least four ANC visits from trained health personnel during their previous pregnancy											
1.6	% of women with children under 2 who had a medically assisted delivery (doctor, nurse, midwife)	Household survey	Baseline and endline	89.4%	99.6%	10.2%	89.8%	99.8%	10.0%	89.6%	99.7%	91.0%
1.7	% of mothers with children under 2 who received their first postnatal care home visit within two days of delivery	Household survey	Baseline and endline	37.0%	61.5%	24.5%	32.9%	62.4%	29.4%	35.0%	62.0%	75.0%
1.8	% of mothers with children under 2 who received their first postnatal care home visit within seven days of delivery	Household survey	Baseline and endline	19.3%	31.2%	11.9%	26.9%	29.5%	2.6%	23.1%	30.4%	75.0%
1.9	% of women with children under 2 whose newborns received a postnatal care visit at home within two days of birth by CHW	Household survey	Baseline and endline	NA	37.3%	-	NA	46.1%	-	NA	41.7%	75.0%
1.10	% of husbands and wives who received at least one FP counseling session	Household survey – women and men	Baseline and endline	Women: 54.1% Men: 17.2%	Women: 88.7% Men: 41.9%	Women: 36.6% Men: 24.7%	Women: 47.3% Men: 11.8%	Women: 71.4% Men: 27.4%	Women: 24.1% Men: 15.6%	Women 50.7% Men 14.5%	Women 80.1% Men 34.7%	Women: 60.0% Men: 30.0%

OUTPUT INDICATORS	SOURCE	FREQUENCY	UPPER EGYPT			LOWER EGYPT			SMART		TARGET
			BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	
during pregnancy											
Outcome Indicator: % of children 6 -23 months who are underweight (low weight for age)	Household survey	Baseline and endline	17.4%	16.4%	1.0%	13.2%	8.0%	5.2%	15.3%	12.2%	6.1%
Outcome Indicator: % of children 6-23 months who are stunted (low height for age)	Routine data	Last quarter	19.2% (N=58,770)			25.4% (N=11,640)				22.3%	9.4%
2.1 Percentage of mothers with children under 2 who are currently using a modern method of FP	Household survey	Baseline and endline	68.3%	58.2%	-10.1%	76.1%	77.5%	-1.4%	72.2%	67.9%	72%
2.2 % of women received at least 90 IFA/folic acid tablets with improved level of hemoglobin in their third trimester of pregnancy	Routine Data	Quarterly reports	89.3%						NA	89.3%	10%
2.3 % of women with LBW (2500g) newborn who practicing Kangaroo mother care for	Household survey	Baseline and endline									
24 hours/7 days for *less than* 7 days of baby life			NA	27.3%	-	NA	16.2%	-		21.8%	
24 hours/7 days for the *first 7 days* of baby life			NA	5.3%	-	NA	0.0%	-		2.7%	5%

OUTPUT INDICATORS	SOURCE	FREQUENCY	UPPER EGYPT			LOWER EGYPT			SMART		TARGET
			BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	DIFF.	BASELINE	ENDLINE	
2.4 % of women with children under 2 who can identify at-least 3 danger signs of newborns	Household survey	Baseline and endline	15.6%	69.3%	53.7%	13.3%	42.1%	28.8%	14.5%	55.7%	25%
2.5 % of women with children under 2 who sought care from a health care provider for newborns with danger signs	Household survey	Baseline and endline	82.5%	79.5%	-3.0%	85.1%	85.5%	0.4%	83.8%	82.5%	25%
2.6 % of women with children under 2 with diarrhea in last 2 weeks who provided appropriate care	Routine data	Quarterly	19.0%	96.4%	77.4%	42.4%	96.5%	54.1%	30.7%	96.5%	10% increase
2.7 Prevalence of children 6-23 months receiving minimum acceptable diet	Routine data	Quarterly	38.7%	52.5%	13.8%	35.8%	43.2%	7.4%	37.3%	47.9%	3% increase
2.8 % of mothers with children under 2 withholding pre-lacteal feeds	Household survey	Baseline and endline	64.9%	46.3%	-18.6%	49.2%	60.8%	11.6%	57.1%	53.6%	45%
2.9 % children under 2 who are exclusive breastfed in the first 6 months			45.0%	54.5%	9.5%	56.6%	56.6%	0.0%	50.8%	55.6%	37%
2.10 % of mothers initiating BF within 1 hour of delivery			37.8%	71.2%	33.4%	35.1%	42.4%	7.3%	35.6%	56.8%	40%

INDICATOR	SOURCE	ACHIEVEMENT	TARGET
Outcome Indicator: % of all LCDAs mobilizing non-SMART resources in-support of improved MNH-FP-Nutrition services and outcomes in their communities	Organizational Assessment tool	100%	80%

3.1 #of UCDAs who are capable of conducting gender analysis at the community level	Gender Analysis report	6		6
3.2 % of LCDAs successfully completed the program's interventions for MNH-FP-Nutrition services as defined in the work plan	Quarterly progress reports	100%		90%
Outcome Indicator: % of women in the communities with increased awareness about the causes of stunting	Regular monitoring	85.8%		70%
4.1 % of LCDAs implementing interventions to reduce stunting	CDA assessment	100%		95%
4.2 # of dissemination events conducted to share the results of the stunting study	Event report – to be finalized			4
4.3 # of new messages designed based on research findings of the stunting study	Messages developed – to be finalized			4
4.4 A set of recommendations developed based on the results of the study about causes of stunting and shared with stakeholders.	Set developed – to be finalized			
Outcome Indictor: Number of community-based committees who actively disseminate gender-related messages to enhance women's status and protect women's inviolable rights and needs	Regular monitoring	84		75
5.1 Number of fathers and mothers-in-law of who have participated in at least one family solidarity session linked to SMART-supported MNH-FP-Nutrition interventions	Regular data collection	10,000 men 10,000 MiLs		
5.2 Number of SBCC materials reflecting the gender relations and notions of masculinities that are developed jointly by the community-based committees and married couples to be widely disseminated at the community level.	Final report of the nutrition study – to be finalized	90		70
		Baseline	**Endline**	
5.3 % of men and women who know three advantages of healthy timing and spacing of pregnancies	Household survey	Women: 65.5%	Women: 84.4% Men: 87%	25%

Annex 2: Selected Success Stories

1. CHW convinces a young mother to deliver in hospital- just in time

Ragaa works as a CHW for Al Islah wa'l Nahda Community Development Association in Kafr Ibrahim, a large village about an hour's drive north of Cairo. She is one of 13 Community Health Workers who work in Kafr Ibrahim, visiting pregnant women in their homes to give support and advice, and running nutrition classes once a week at the center for women with children under the age of 2. Ragaa is a kind and quietly confident CHW, who introduced us to Hasna, a shy young woman holding a tiny baby.

Ragaa first met Hasna when she was already 9 months pregnant with Reham. Hasna told her that she had only been for an ANC check-up in her first trimester and decided it wasn't very useful, so she never went back. She was planning to deliver at home with a daya (traditional birth attendant) that her family knew, and had not made any other plans.

Ragaa told us that she began to worry when Hasna said that she had been feeling poorly and had sporadic bleeding. As it was so close to her due date, and knowing that this could be a risk sign, Ragaa told Hasna that she should go to hospital immediately. Hasna was reluctant and wanted to call the daya but Ragaa insisted, telling Hasna that spotting meant there could be complications that a daya would not know how to deal with. She also talked to Hasna's husband and convinced him that she should deliver in hospital. She helped Hasna pack some clothes and took her to the nearest public hospital.

At the hospital, the physician found Hasna's pulse weak, and she was anemic. She went into prolonged labor, and eventually delivered a healthy baby girl but suffered from severe postpartum hemorrhage. The doctor praised Ragaa for bringing Hasna to hospital where they could manage the bleeding, he said otherwise she would have died.

Hasna has regained her strength, and Reham, now 1 month old, is obviously very healthy. Ragaa visits them every week, and looks upon Hasna as a daughter. She says she is proud that she can help young women like Hasna in her community- and Hasna thanks her again for saving her life.

2. Advice for a too- thin young mother and her daughter

Mona Salah from Asyut was four months pregnant with her second child when she attended her first ANC check-up at the SMART mobile clinic in her village of Masraa. She felt tired and listless and never bothered to cook much. The doctor told her that she was too thin and gave her iron tablets, but these made Mona feel ill so she didn't take them. A month later, she returned to the clinic but had not gained any weight. The doctor also weighed her little girl Fatma, who was a year old, and diagnosed her as low weight for age (wasted). The doctor suggested that Mona should have counseling about good nutrition for herself and her baby and contacted Reda, the local SMART Community Health Worker who came to see Mona at home the next day.

Reda visited Mona regularly for the rest of her pregnancy, and advised her on her diet, hygiene, birth planning, exclusive breastfeeding, child spacing and many other subjects. Reda also explained to Mona the importance of taking iron tablets and told her how to avoid the side effects. She invited Mona and Fatma to attend the Nutrition classes, where she explained about the importance of a healthy balanced diet for both mothers and children, and showed the women what kinds of meals they should be making for their families. Mona was happy with the new information and started cooking more vegetables and porridge at home for Fatma. Within 3 weeks of having a better diet, Fatma had achieved the normal weight for her age. Mona was also cured of anemia and she started to have more energy. She delivered a healthy little girl, whom she started breast-feeding immediately. (Mona with Rahma, and CHW Reda)

"*Mrs Reda is very kind*", said Mona. "*My mother is dead, and my mother- in- law is very old, so I didn't have anyone to tell me what to do when I was pregnant with Fatma. Fatma was jaundiced at birth and I thought that my milk wouldn't be enough for her- that's why I started feeding her other foods. But now I know that breastmilk is the best thing for a baby for 6 months and I didn't allow the nurse to give glucose to Rahma in the hospital. Look how fat she is now!"* She continued, *"I got an IUD when my baby was 1 week old as I do not want another baby for a couple of years. I got pregnant with Rahma when Fatma was still very young. I know now it was too soon. I was always tired and did not feel like cooking or eating- that is why the doctor said I and Fatma were too thin. I am grateful to Mrs Reda for explaining these things for me*."

3. Dr. Abdel Aziz puts his community first

Dr. Abdul Aziz, a recently qualified pharmacist, runs a small pharmacy in the village of Wasti. In November of 2012 he was invited to a briefing by the SMART Team Leader aimed at informing pharmacists about the objectives and activities of the program. She described the beneficial role that pharmacists could play, for example, by encouraging pregnant women to take iron- folic acid tablets, and avoid non-prescription medicine. Dr. Abdul Aziz was interested in hearing about the program and was happy to learn new facts, especially about nutrition and mothers' health, and immediately offered to distribute the various SMART brochures about Pregnancy Danger Signs, Safe delivery, Neonatal Care and Family Planning in his pharmacy. Dr. Abdul Aziz says he also changed to advice that he had been giving to pregnant women or their husbands when they came into his pharmacy to include messages about not taking medicine without a prescription (which is common here).

About 2 weeks later, the Project Officer of the Islamic Charitable Association which was running the SMART program in Wasti village came to visit him. The PO explained that their program was targeting the poorest women in the community by holding regular Health Education and Nutrition classes for pregnant women and offering free monthly medical services for mothers with children under 2. As Dr. Abdul Aziz had shown an interest in the program at the briefing, and his pharmacy was the closest to the Association's community center where the classes and the clinics were held, the Project Officer thought he might be interested to support it. Dr. Abdul Aziz was happy to be asked, and offered to help the program beneficiaries by offering a 20% discount on medication prescribed by the medical team, as he had heard that the cost of medicine was a considerable barrier to poor women.

As Dr. Abdul Aziz said, "*I was glad to have an opportunity to help, because I think this is a good program to help the poor. I heard that the obstetrician and the pediatrician, and the lab technician are volunteering their services. This is my community too, my family always lived here and I should contribute something to make it better. That is more important than making a profit.*"

4. Samar learns about exclusive breastfeeding

Ahmed is Samar's third baby and her first boy. This is Samar's story.

"As with my daughters, I breastfed Ahmed exclusively when he was first born, but by the time he was 3 months old, the mother of my husband said that since he was boy, he would need more food and started feeding him the water drained from cooked rice. Sometimes she gave him mashed potato mixed with water. But Ahmed did not like it- he was crying all the time, which my mother in law said was because he was hungry and tried to give him more. I was also unhappy because I had a lot of milk and got mastitis because Ahmed wasn't drinking."

"I was very relieved when a CHW came to visit me. She said Ahmed should only be breastfeeding. She talked to my mother in law and convinced her that Ahmed should not be given any other food until he was 6 months' old. She also showed me how to express my milk with my hands and keep it in a jar for later if there is too much or if Ahmed was sleeping. I also went to her Nutrition classes to learn about different foods for babies and small children."

"Ahmed was almost 7 months old when he started eating solid food. At first he didn't like it but we made sure it was soft and tasty and he started eating more. Now he is 15 months and he can eat everything. His teeth are very good. I still breastfeed him sometimes especially at night- then he goes to sleep very well, for the whole night."

5. Health Education sessions lead to literacy classes for 3 young mothers.

Hanan Ramadan is a dynamic and enthusiastic Community Health Worker in Hagazah Kebly district of Qena. She recently graduated from a local college with a degree in Administration and joined the SMART program in 2012. She enjoyed holding the Nutrition and Health Education sessions for women, and was very supportive of the women she worked with. There were three in particular with whom she became friends- Iman Ali Saeed, Fatima Mohammed and Suhair Ali Mohamed. One day they told her that they were ashamed of not being able to read and write, and asked for her support to learn. Hanan took their request back to the CDA and convinced them to start a literacy class for the women from her sessions. The CDA agreed to do this, and Iman, Fatima and Suhaid were the first to enroll. Six months later they finished the course, and were able to read the newspaper, and more importantly, the advice and instructions on Nutritional information materials developed by SMART especially for women with small children.

6. Two Women from Qena share their experience of Health Education classes

In June 2013, the Sunrise Association for Rural Women's Development, in Daraw, Qena Governorate, held their graduation ceremony for twenty pregnant women who had successfully completed a 3- month course on Health and Nutrition, run by Community Health Workers trained by SMART.

SMART interviewed two of the participants, Ilham and Naema, to find out what they had gained from the course.

Ilham Saad El Din is a pretty 20-year old, who has a 2- month old baby. Ilham has a diploma in Administration from the college at Qena but she has not worked since she got married. This was her first pregnancy, and since she does not live with either her mother- in- law or her mother, she did not know what to do when she found she was pregnant. For her, the course came at exactly the right time, and she really appreciated the visits of the CHW. In her words:

"I learnt many things I didn't know before. My CHW introduced the following things to me- Hemoglobin test, and the importance of Iron tablets: proper nutrition: the importance of ANC: danger signs during pregnancy and danger signs after childbirth, and the importance of the postpartum period.

My CHW invited me to attend the Health and Nutrition sessions at the beginning of the program when she visited me at home. She explain the importance of attending the sessions for pregnant women, especially women with first pregnancy, the importance of the ANC and that is very useful to get all the needed information about pregnancy, birth and child care, immunizations.

The most useful information I learned was the importance of the hemoglobin test. The CHW told me to have a blood test to check for anemia. I didn't know it but I had anemia. I started taking iron tablets when I was pregnant. I was also told about the importance of proper nutrition and I should cook foods that must contain energy, protein and nutrients, to stay strong and build my body to have a healthy baby. Also, I learned about the importance of a pregnant woman's personal hygiene.

I am lucky because my husband was very understanding and said that I should attend the sessions, in order to get the information about pregnancy because I did not know anything at all. My husband also attended some of the educational seminars that were held by the program in the village and he even stayed with me sometimes when the CHW came to visit me at home. He was glad that I was learning about pregnancy, childbirth and the danger signs, especially since it that was my first baby.

This program helped all the women in the village to have a lot of information about pregnancy, birth and children, the importance of doing the tests during pregnancy, iron tablets, ANC and the proper nutrition, giving birth in the hospital or at Doctor's clinic to avoid the danger, also the importance of the PNC for the mother and baby. I learned a lot, which will be useful for when I have another baby. My husband also thinks the program was a good idea because we know these things now."

The second woman we met, **Naema Saad Taye**, is a 37 year old housewife. She is happy to have finished the course and received her certificate. She has 3 children already, two girls, 12 and 10 years, and a boy of 6, and has just delivered a healthy baby boy. These are her comments on the training:

"The CHW visited my home at the beginning of the program to explain that since it was some time since my last baby, ANC was very important, and I should attend the sessions, in order for me to get all the needed information about pregnancy. At the beginning my husband didn't agree to me

attending the sessions because he didn't think it was necessary. The CHW talked to my husband about how all women can benefit from participating in these sessions, so then he said I could attend. I was so happy about that, because now I know more about my baby and his health.

Although I gave birth 3 times before the CHW told me a lot of things that I didn't know like how you should have a hemoglobin test, and take iron tablets. She told us about eating properly when we are pregnant, the importance of ANC checks at the health unit, and to be careful of danger signs. She gave us a lot of information that was new to me. My baby was born without any problems and he is very strong. I am breastfeeding him- he has not eaten anything else.

My children were at school when I went to the session; if it was the school holidays, my oldest daughter took care of the children. My husband sometimes helps in taking care of the children while I'm doing some of the household duties and also he makes tea for himself if I'm busy with the baby."

7. Community Health Workers

Community Health Workers (CHWs) are the real strength and backbone of the SMART program. Thanks to their efforts and enthusiasm, the key health and nutrition messages have been delivered to thousands of women in small communities across six governorates of Egypt. In many cases, their recognition of a danger sign or a malnourished child led to timely health care that saved a life or prevented serious damage. The SMART CHWs have proven that a low- cost intervention, like the intensive training of non-medical personnel, can be extremely effective in providing the link between women at home and health providers. There are many reasons why this strategy has been successful:

- CHWs were carefully selected from the communities to which they would be assigned, so they were already familiar with the inhabitants and local issues and customs.
- They all had at least a secondary education (some tertiary), and were serious about acquiring new knowledge and skills.
- Working as a CHW was a golden opportunity for educated young women in rural areas, empowering them by giving them a meaningful role in their communities.
- All were highly motivated to work despite long hours and challenging conditions, and found the work rewarding regardless of the small salary. Part of this stemmed from the fact that they all saw a personal benefit in the role of a CHW, in that the information they learned was relevant and useful for their own families.
- The majority of CHWs are married, and so are credible authorities on pregnancy and childbirth. Even the ones who were as yet unmarried had the self- confidence and solid understanding of the material to convey it effectively.
- CHWs were trained by medical professionals and had good relationships with local service providers, so they could refer women to the next level, or ask for back-up when needed.
- Community members valued the professionalism and dedication of the CHWs and recognized the vital role they could play in improving the health of mothers and children- to the extent that some communities demanded that their local associations continue the CHW program after SMART closed.

8. A village girl realizes her dream to play an active role in her community

Gaz Mohamed Mohamed Hussein is a smiley young woman in a red headscarf, attending a refresher training course on infant nutrition run by **SMART** in Asyut. Gaz comes from Masrah, a small village on the Nile about 40 kilometers north of the governorate capital of Asyut, Upper Egypt. She is 25 years old and delighted to have been included in the group of 20 young women selected to work as Community Health Workers (CHWs) in their own communities.

During a break in the training, Gaz recounts how, as one of six children, her father was unable to afford to send her to school. Her older sister married when she was 16, and her brothers attended primary school but Gaz was kept at home to help her mother. However, when she was twelve, she was able to attend a literacy class in the village, and quickly achieved a high level. The facilitator of the class then persuaded Gaz's father to allow her to join Year 5 in Primary School. She was also able to continue in secondary school, but when she graduated, although her results were good enough for her to enter the faculty of agriculture, education or commerce, her father did not agree to her moving into Asyut to continue her studies.

Gaz began to look for something she could do in her village. At the beginning of 2012, she was nominated by a local Community Development Association to participate in the **SMART** training course for Community Health Workers. Gaz says she had no idea about the health problems in her village, even though she had seen mothers and babies sicken and sometimes die. She speaks confidently and enthusiastically about her new role in the community, saying how happy she is to be able to help her neighbors and friends. Her father has accepted the idea that his daughter is working; she is the first woman in the family to have received an education and work outside the home. Gaz's mother is very proud of her daughter, especially as she chosen to help other women. Gaz is currently engaged but in no hurry to marry. She insists she will continue working after she marries, and recognizes that the information she has learnt during the CHW training will be very useful for her when she has children of her own.

Reflecting back on her childhood desire to go to school, Gaz says she never imagined that she would one day have the information and confidence to go into women's homes and discuss health and nutrition issues with them. "I just wanted to be educated like my brothers", she says, "and that gave me the chance to be working and helping people. I wish that all the girls in Masrah could have an education. With education we could chase the ghost of malnutrition from Asyut!"

A final word

These stories show that the SMART program achieved surprising successes in the relatively short time of its implementation. Due to improved nutrition and heightened awareness of health issues, many women and children in the program areas are healthier now, and have a higher chance of staying healthy in the future than they did before. More people are aware of the causes and dangers of child malnutrition, and in particular, the irreversible effects of stunting. These were two main goals of the program.

By firmly rooting the program plans and activities being in the communities, and introducing low-cost, low-technology measures, such as CHW home visits and training focusing on good nutrition (with local, readily available food), SMART was able to fill a gap in the society where poor and rural women and their families were not able to access quality health care and advice. The training that SMART offered service providers, CHWs and Community Development Associations, was relevant and succinct, and had the additional benefit of linking together these 3 important players in health care issues. Through partnerships with and mutual support of Egyptian national associations (of Childhood and Motherhood, of Breastfeeding, the Syndicate of Nurses and several universities), SMART included other key players in the health sector, which helped to spread good practice further. SMART also ensured that the Ministry of Health was well informed of program activities, especially at governorate level, and trained a number of MOH staff on nutrition issues.

Ideally, activities and information introduced by SMART will continue to spread throughout rural areas. The communications materials are available, hundreds of CHWs and service providers have been trained and Community Development Associations have the capacity to implement and manage similar projects in the future. As told by the individuals in this document, SMART has both enabled and empowered individuals, families and communities to take responsibility for and be pro-active about their own health, which is a very significant achievement for the program.

Annex 3: Presentations at International Conferences and Publications

Abdelmegeid, A. "*Promoting increased knowledge of Maternal Health and Nutrition through the Egypt Smart project: Base line and training results,*" poster presentation, abstract published, 20th International Congress for Nutrition, Spain, September 2013.

Abdelmegeid, A. "*SMART project; Community –based interventions improving Maternal and child health in six governorates in Egypt,*" presentation on the Second International Conference for Egyptian Neonatal Health Association, Alexandria, Egypt, 2012

Brasington, A. *"Community-based SBC and Gender Interventions for Maternal, Newborn and Child Health,"* presentation, CORE Group, Washington, DC, May 2014.

Kavle J, Galloway R, Mehanna S, Saleh G. 2013. Examining factors associated with a rise in stunting in Lower Egypt in comparison to Upper Egypt *Maternal and Child Nutrition* Supplement 3:1–41, oral presentation abstract published from Nutrition and Nurture in Infancy and Childhood, UK Conference, June 2013.

Kavle J, Galloway R, Saleh G, Mehanna S. 2013. Operations research: Triangulation of data collection methods and analyses to examine the rise in stunting in Lower versus Upper Egypt. *Annals of Nutrition and Metabolism* 63 Supplement 1:1, poster presentation abstract published from 20th International Congress for Nutrition, Spain, September 2013.

Kavle J, Galloway R, Saleh G. 2013. It takes a village: Developing key community- level messages to address the rise in stunting in rural Egypt. *Annals of Nutrition and Metabolism* 63 Supplement 1:933, poster presentation abstract published from 20th International Congress for Nutrition, Spain, September 2013.

Kavle J, Mehanna S, Khan G, Saleh G, Galloway R. 2014. Coming full circle: Addressing perceptions and cultural beliefs of maternal dietary practices, weight gain and breastfeeding for birth spacing from pregnancy to postpartum in Egypt, poster presentation from Micronutrient Forum, Addis Ababa, June 2014.

Salah F. Impact of building capacities of community health workers (CHWs) on the nutritional status of young children in rural areas of Egypt, presentation from Second International Conference on Nutrition and Growth, Spain, January 2014.

Saleh G. 2013. Using positive deviance to identify nutritious recipes for complementary feeding and to reduce stunting in rural Egypt, poster presentation from 20th International Congress for Nutrition, Spain, September 2013.

Four presentations in November 2012, at the annual Alexandria Health Conference

Annex 4: Materials and Tools Developed or Adapted by the Program (e-Library)

NO.	PUBLICATIONS AND IEC MATERIALS	
	1,000 Days Series سلسلة الألف يوم	
1	Maternal and Child Nutritional Guidelines – (for physicians)	ارشادات لتغذية الأم والطفل
1.1	Part One: – Antenatal	الجزء الأول: فترة ماقبل الولادة
1.2	Part Two: – Natal and Newborn	الجزء الثاني: فترة الولادة ورعاية المولود
1.3	Part Three – Postnatal	الجزء الثالث: فترة مابعد الولادة
2	Nursing Care Manual for Maternal and Child Health and Nutrition	دليل العناية التمريضية لتغذية وصحة الأم والطفل
3	Nursing Care Guide for Maternal and Newborn Care	إرشادات عمل الممرضة لرعاية الأم والمولود
4	Community Health Workers (CHWs) Manual for Mother and Child Health and Nutrition – Trainer Guide	دليل المثقف الصحي لتغذية وصحة الأم والطفل - دليل المدرب
5	Community Health Workers (CHWs) Manual for Mother and Child Health and Nutrition – Trainee Guide	دليل المثقف الصحي لتغذية وصحة الأم والطفل - دليل المتدرب
6	Helping Baby Breathe (HBB) – Arabic version	برنامج مساعدة الأطفال حديثي الولادة على التنفس – النسخة العربية
7	Helping Baby Breathe (HBB) – English version	برنامج مساعدة الأطفال حديثي الولادة على التنفس – النسخة الانجليزية
8	"Warm Hug Care" Practice Manual for Child Care (Kangaroo Mother Care)	الدليل التطبيقي لنموذج "الحضن الدافئ" لرعاية المولود
9	Complementary Feeding Manual for Egyptian Child	دليل التغذية التكميلية للطفل المصري
10	Health Messages for Mother and Child Health and Nutrition	الرسائل الصحية لصحة الأم والطفل والتغذية السليمة
11	Social Roles and Well-Being of the Egyptian Family Training Manual – Arabic Version	الدليل التدريبي الأدوار الاجتماعية وصحة وسلامة الأسرة المصرية – النسخة العربية
12	Social Roles and Well-Being of the Egyptian Family Training Manual – English Version	الدليل التدريبي الأدوار الاجتماعية وصحة وسلامة الأسرة المصرية – النسخة الإنجليزية
13	Messages of the Social Roles and Well-Being of the Egyptian Family	رسائل الأدوار الاجتماعية وصحة وسلامة الأسرة المصرية

NO.	PUBLICATIONS AND IEC MATERIALS	
	SMART Program Flyers مطويات مشروع "سـمارت"	
1	For a Safe Pregnancy	من أجل حمل آمن
2	Danger Signs during Pregnancy	علامات الخطر أثناء الحمل
3	Danger Signs during Labor	علامات الخطر أثناء الولادة
4	Danger Signs of Newborn Baby	علامات الخطر للطفل حديث الولادة
5	For Safe Puerperal Period	من أجل نفاس آمن
6	Mother Care during Puerperium	رعاية الأم في فترة النفاس
7	Baby Care from Day One of Birth	نهتم بالمولود من أول يوم ولادة
8	Child Nutrition	تغذية الطفل
9	Birth Spacing Is Better for the Family	تباعد الحمل أفضل للعائلة
	SMART Program Posters ملصقات مشروع "سـمارت"	
1	Child Milestones at Different Stages from Birth to Two Years – English	مراحل نمو الطفل من وقت الولادة إلى سن سنتين - النسخة الإنجليزية
2	Child Milestones at Different Stages from Birth to Two Years – Arabic	مراحل نمو الطفل من وقت الولادة إلى سن سنتين - النسخة العربية
3	Child Nutrition from Birth to Two Years	تغذية الطفل من الولادة إلى سن سنتين
	Health Fact Sheets سلسلة الحقائق الصحية	
1	Antenatal Care	رعاية ما قبل الولادة
2	Postnatal Health Care and Nutrition	رعاية ما بعد الولادة الصحية والغذائية
3	Newborn Care	رعاية حديثي الولادة
4	Exclusive Breastfeeding	الرضاعة الطبيعية المطلقة
5	Complementary Feeding for Children	التغذية التكميلية للطفل
6	Children and Malnutrition	الأطفال وسوء التغذية
7	Warm Hug Care Practice	اسلوب رعاية الحضن الدافئ
8	Child Spacing and Proper Pregnancy Timing	التوقيت السليم والمباعدة بين الولادات
9	Stunting	التقزم

NO.	PUBLICATIONS AND IEC MATERIALS	
	Breastfeeding Case Studies حالات دراسية حول الرضاعة الطبيعية	
1	Breastfeeding and Complementary Feeding: Case Study Number One: Mrs. Salwa	الرضاعة الطبيعية والغذاء التكميلي للطفل (القصة الاولى - دراسة حالة سلوى)
2	Breastfeeding and Complementary Feeding: Case Study Number Two: Mrs. Amani	الرضاعة الطبيعية والغذاء التكميلي للطفل (القصة الثانية - دراسة حالة أماني)
3	Breastfeeding and Complementary Feeding: Case Study Number Three: Mrs. Reem	الرضاعة الطبيعية والغذاء التكميلي للطفل (القصةالثالثة - دراسة حالة ريـم)
	SMART Success Stories قصص نجاح من مشروع "سمارت"	
1	SMART Success Stories – Arabic Version	قصص نجاح من "سمارت" – النسخة العربية
2	SMART Success Stories – English Version	قصص نجاح من "سمارت" – النسخة الإنجليزية
	Stunting Study Results نتـائج دراسـة التقـزم	
1	Examining Factors Associated with Stunting in Lower Egypt in Comparison to Upper Egypt: Bridging the Gap between Cultural Beliefs and Feasible Feeding Practices through Trials of Improved Practices (TIPs) – English	دراسة العوامل المرتبطة بالتقزم فى الوجه البحرى مقارنة بالوجة القبلى : الفجوة بين المعتقدات المجتمعية والممارسات الغذائية وكيفية التعامل معها من خلال استخدام نموذج "محاولات لتحسين الممارسات" (لغة انجليزية)
2	Cultural Beliefs and Perceptions of Maternal Diet and Weight Gain during Pregnancy and Postpartum Family Planning in Egypt – English	تغذية الأم و زيادة الوزن أثناء الحمل وتنظيم الأسرة بعد الولادة فى مصر من منظور المعتقدات المجتمعية (لغة انجليزية)
3	A Counseling Guide for Infant and Young Child Feeding in Two Regions of Egypt Based on Results of Trials of Improved Practices (TIPs) Stunting Study – English	دليل المشورة التغذوية للمولود و الطفل الصغير فى منطقتين فى مصر بناء على نتائج دراسة التقزم باستخدام نموذج "محاولات لتحسين الممارسات" (لغة انجليزية)
4	Brief: Junk Food Is a Feeding Problem Contributing to Poor Growth and Stunting in Egyptian Children – English version	ملخص: الطعام غير الصحي: مشكلة من مشاكل التغذية التى تساهم فى ضعف النمو والتقزم لدى الأطفال المصريين (لغة انجليزية)
5	Brief: Junk Food Is a Feeding Problem Contributing to Poor Growth and Stunting in Egyptian Children – Arabic version	ملخص: الطعام غير الصحي: مشكلة من مشاكل التغذية التى تساهم فى ضعف النمو والتقزم لدى الأطفال المصريين (لغة عربية)
6	Brief: Recommended Practices and Counseling Messages to Address Infant and Young Child Feeding Problems in the First Two Years of Life in Egypt: An Update for Health Care Providers – English version	ملخص: توصيات للممارسات التغذوية ووسائل المشورة لمواجهة مشاكل التغذية للرضع و الأطفال الصغار فى أول سنتين من العمر. موجهة لمقدمى الخدمة (لغة انجليزية)

NO.	PUBLICATIONS AND IEC MATERIALS	
7	Brief: Recommended Practices and Counseling Messages to Address Infant and Young Child Feeding Problems in the First Two Years of Life in Egypt: An Update for Health Care Providers – Arabic version	ملخص: توصيات للممارسات التغذوية ووسائل المشورة لمواجهة شاكل التغذية للرضع و الأطفال الصغار في أول سنتين من العمر. موجهة لمقدمى الخدمة (لغة عربية)
Documentary and Educational Films أفـلام تـوثيـقية و تعـليـمية		
1	Documentary Film about SMART Achievements	فيلم توثيقى عن انجازات مشروع "سمارت"
2	Documentary Film about SMART Achievements in Asyut Business Women's Association (ABWA)	فيلم توثيقى جمعية سيدات اعمال- أسيوط
3	Documentary Film about SMART Achievements in Giving Without Limits Association (GWLA)	فيلم توثيقى جمعية عطاء بلاحدود- أسيوط
4	Documentary Film Warm Hug Care (WHC)	فيلم تعليمي ل نموذج الحضن الدافئ

Annex 5: Community Development Associations Participating in the SMART Program

1. Egyptian Association for Human and Environmental Development (UCDA) – Qalyubia, Al Qanater
   - LCDA Shalqan – Shalqan Village
   - LCDA Bahadah – Bahadah Village
   - LCDA Karenville – Karenville Village
   - LCDA Aghor El Soghra – Aghor El Soghra Village
   - LCDA Sendbis – Sendbis Village
   - LCDA Shubra Shehab – Shubra Shehab Village
   - LCDA Kafr Al Shurafa – Kafr Al Shurafa Village
   - LCDA El Monira – El Monira Village

2. Association for the Community Development of Mofti (UCDA) – Qalyubia, Kafr Shukra
   - LCDA Al Nesaeya Li Tahseen el Seha/Kafr Shukr branch, Kafr Marwan, Kafr Ragab, and Kafr Tesfa
   - LCDA El Shareeya Llameleen Belketab wa el Sona – El Mohamadeya Bi Tesfa and Tesfa, Kafr El Saeed Abd El Nawar, Ezbet el Arab, and Aflaton
   - LCDA Semar El Kheir Lereayet el Aytam Bi Kafr Mansour – Kafr Mansour, Kafr Ali, and Asnit
   - LCDA Riad El Koran El Kareem Bel Menshat el Kobra – El Menshat El Kobra and El Menshat El Soghra, El Safein
   - LCDA Tanmeyat el Mogtama'a el Mahaly Bi Kafr Kordy – Kafr Kordi and El Shokr

3. El Tanmeya El Mogtama'a Abbassa (UCDA) – Sharqia, Abo Hammad
   - LCDA Tanmeyat El Mogtama'a CDA/El Gameya El Shar'eya – Bahteet and Kafr Abou Moslem
   - LCDA Gameyat De'bes li Tanmeyat el Mogtama'a – El Molak
   - LCDA El Khayreya El Islameya – Al Abbasa
   - LCDA Gameyat El Mohafaza Ala El Quran – El Gaafareya and Kafr Ayad
   - LCDA Gameyat Ahl El Bayt/El Hidaya – El Qataweya

4. Egyptian Society for Cultural Development (UCDA) – Sharqia, Belbeis (Replaced with Tahsin Ouda El Marra wa El Difl
   - LCDA El Ber Wal Taqwa CDA – El Kateeba
   - LCDA EL Gameya El Shar'eya – Kafr Ayoub and El Sa'adat
   - LCDA Gheeta Tanmeyat El Mogtama'a – Gheeta and Tal Rozanne

- LCDA El Salaam Tanmeyat El Mogtama'a – El Salam
- LCDA El Mohafaza Ala El Qora'an CDA – Meet Hamal
- LCDA Ibna'a El Balashone l'el Tanmia – El Balashone
- LCDA Al Eslah wal Nahda CDA – Kafr Ibrahim El Aydee
- LCDA Shobra El Nakhla Tanmeyat El Mogtama'a – Shobra El Nakhla
- LCDA El Mohafaza Ala El Qora'an – Awlad Seif and Awlad Mehani
- LCDA Hefna Tanmeyat El Mogtama'a – Hefna

5. Good Youth for Development and Services (UCDA) Beni Suef, Beni Suef
   - LCDA El Hakama – El Hakama Village
   - LCDA Dimochea – Dimochea Village
   - LCDA Sherif Basha – Sherif Basha Village
   - LCDA El Kom Al Ahmar – Kom Al Ahmar
   - LCDA Belefia CDA – Belefia Village
   - LCDA Bayad Al Arab CDA – Beit Al Arab
   - LCDA Beni Suleiman CDA – Beni Suleiman El Sharqia
   - LCDA Tezmat CDA – Tezmat El Sharqia

6. Together Foundation for Development and the Environment (UCDA) – Beni Suef, El Fashn
   - LCDA El Shabat El Moslemat – El Kodabi
   - LCDA El Marwa El Khairya – El Gafadon
   - LCDA Ezbit Yacoub CDA – Ezbit Yacoub
   - LCDA Talt CDA – Talt Village
   - LCDA Delhanis CDA – Delhanis
   - LCDA Shenra CDA – Shenra Village
   - LCDA Menshat Nasser – Menshat Nasser
   - LCDA Ahmed Taher – Saft El Khersa Village

7. Family and Environment Development Association (UCDA) – Qena, Qous
   - LCDA Al Hellah CDA – Al Hellah, Gezira Motairah
   - LCDA Al Sha'arany CDA – Al Sha'arany, Al Karanquah
   - LCDA Al Awary Women's Association – Al Awary, Al Arab, Mahmoud
   - LCDA Hagazah Qebly CDA – Refa'ah, Al Sabakkah, Al Sa'adab
   - LCDA Al Olayqat CDA – Al Olayqat
   - LCDA Hagazah Bahary CDA – Hagazah Bahary
   - LCDA Garagous Social Services Association – Garagous

- LCDA Al Gamaliya CDA – Al Gamaliya
- LCDA Rural Women's Development Association – Al Ayayshah
- LCDA Shanhour Social Services Association – Shanhour, Al Ma'arry, Khouzam, Al Mofragia

8. Banner of Islam (UCDA) – Qena, Naqada
    - LCDA Koum Bilal CDA – Koum Bilal
    - LCDA Koum El Daba'a CDA – Koum El Daba'a, El Zawaydah
    - LCDA Khattara Charity Association – Al Wehdah
    - LCDA Khattara Economic Development Association – Al Khattara
    - LCDA Future Association for Youth Participation – Naqada
    - LCDA Al Shabbat Al Moslemat – Al Mansheyah, Dunfik, Naqada
    - LCDA Hager Dunfik Women's Association – Hager Dunfik
    - LCDA Al Daoud Development and Environmental Association – Al Bahary Qamoola
    - LCDA Al Qaryah CDA – Al Awsat Qamoola (Al Qaryah and Al Sahel)
    - LCDA Al Shorouq Women's Association Daraw – Al Awsat Al Qamoola (Daraw, Asmant, Beshlaw)

9. Community Development and Care of Children with Special Needs UCDA – Sohag, Maragha
    - LCDA Shandwel CDA Caring for Orphans – Shandwel community
    - LCDA Shoranya for Rural Women's Affairs – Shoranya community
    - LCDA Abo Awad CDA – Abo Awad – El Btakh
    - LCDA Fazara CDA Caring for Orphans – Fazara
    - LCDA Bin Awed CDA – Bin Awed community
    - LCDA Omar Bin Abd El Aziz Association – Amer district – Basona – El Hask
    - LCDA Muslim Young Men's Association – El Krizat community
    - LCDA Al Abadia for Conserving the Environment – Bin Helal
    - LCDA Eqsas CDA – Eqsas
    - LCDA El Mostafa CDA – El Masekh, Sheikh Shebl, Al Arab

9. Tahsin Ouda El Marra wa El Difl (UCDA) – Sohag, Maragha
    - LCDA El Nayrouz – Edfa
    - LCDA Awlad Aziz – Awlad Aziz
    - LCDA Noweh Al Taleem (Quality of Education) CDA – Tunis
    - LCDA Ibna El Nil – Bendar El Karmanya
    - LCDA Mahamda el Bahrya – Mahamda El Bahrya

- LCDA Balasforah CDA – Balasforah
- LCDA Gezirat Shandwil – Shandwil
- LCDA Sheikh Makram CDA – Sheikh Makram
- LCDA Al Huda CDA – Nagi El Naggar
- LCDA Al Salaa CDA – Al Salah

10. Gamia't Saidat Al Ahmel (Business Women's Association) (UCDA) – Asyut, Al Fateh
    - LCDA Al Kurdih Charitable Association – El Fateh, El Kurdih
    - LCDA West Masraa CDA – West Masraa
    - LCDA Sayeeda Zeinab Society of Bosra – Bosra
    - LCDA Islamic Charitable Society of Arab Moteir – Arab Moteir
    - LCDA Islamic Charitable Society of El Wasti – El Wasti
    - LCDA Islamic Charitable Society of El Faiama – El Faiama

11. Giving Without Limits Community Association (UCDA) – Asyut, Asyut
    - LCDA Awlad Ibrahim CDA – Awlad Ibrahim
    - LCDA Salam CDA – Salam Village
    - LCDA El Mateaa – El Mateaa
    - LCDA Dronka CDA – Dronka
    - LCDA Shotb CDA – Shotb Village
    - LCDA Masrah CDA – Masrah
    - LCDA Good Youth Society for Community Development – Dier Dronka
    - LCDA Al Mashrak Association for People with Disabilities – Wast Al Bilad
    - LCDA Mankabad CDA – Mankabad
    - LCDA Mercy CDA – Bani Hussein

Annex 6: MCHIP Egypt: End-of-Project Report Program Learning Annex

PROGRAM LEARNING TOPIC	RELEVANCE OF TOPIC	PLANS FOR STUDYING, DOCUMENTING, AND DISSEMINATING	RESULTS, REPORTS, PRESENTATIONS, ETC.
Stunting Study **Question 1A:** What are culturally-appropriate, targeted messages to improve feeding practices and dietary intake at the household level to prevent stunting in Egypt? **Question 1B:** What factors are associated with the rise in levels of stunting in Lower Egypt in comparison to Upper Egypt?	Levels of stunting in Egypt are high. The 2008 EDHS showed 29% of under-fives are stunted (<-2 HAZ). This is a major public health problem which affects risk of illness and death in children, capacity to learn, and work productivity and life time earnings. Addressing this problem is needed to ensure optimal growth and development of young children and for the health of a nation. In Upper Egypt stunting decreased by 7% between 2005 and 2008, while in Lower Egypt the prevalence of stunting doubled in the same period. Globally, the factors associated with stunting are not well understood. Our learning will be valuable to many audiences, not just policy and program planners in Egypt.	The study consists of four parts that will be conducted in one district each in Upper and Lower Egypt: **PART 1:** Longitudinal follow-up of 300 children's growth from birth to 12 months; **PART 2:** In-depth interviews with 40 pregnant and 40 lactating and 40 non-lactating women; **PART 3:** Trials of Improved Practices (TIPs), which includes in-depth interviews and 24-hour diet recall with 150 mothers with infants 0-23 months of age; and **PART 4:** In-depth interviews on IYCN and avian flu with 40 fathers, 40 grandmothers, and 40 health care providers. Additionally: Secondary Analyses of DHS 2005 and 2008 – Upper and Lower Egypt, factors associated with stunting, including in-depth examination of Infant and Young Child feeding (IYCF) variables and multivariate modeling.	**PART 1:** Longitudinal study peer-reviewed publication – data collection completed in June 2014, data cleaning and analyses July – August 2014. Preliminary report for USAID will be submitted in September/early October. Peer-reviewed publication in progress, for submission in October 2014. **PART 2/3:** Peer-reviewed publication on TIPs and role of other caregivers and health care providers disseminated in country and submitted to peer-reviewed journal (Maternal and Child Nutrition) July 2014. Currently under review, minor revisions prior to acceptance. **PART 2/3/4:** Two final Reports to USAID Egypt and USAID Washington on TIPs, in-depth interviews and maternal diet and two technical research briefs based on TIPs results in English and Arabic completed and on MCHIP website; one counseling guide based on TIPs results, one presentation on TIPS and in-depth interviews for dissemination in Egypt. All eight products

PROGRAM LEARNING TOPIC	RELEVANCE OF TOPIC	PLANS FOR STUDYING, DOCUMENTING, AND DISSEMINATING	RESULTS, REPORTS, PRESENTATIONS, ETC.
			disseminated in country May 14, 2014. **Secondary Analyses of DHS:** Peer-reviewed publication – manuscript was submitted on September 18, 2014 to BMC Public Health. Some preliminary results disseminated in country on May 14, 2014. TIPs preliminary results presented at int'l conference in the UK (Nutrition and Nurture in Infancy and Childhood, June, 2013) and in Spain (International Congress for Nutrition, September 2013). Maternal diet results presented at Micronutrient Forum in June 2014 and at the Wilson Center for International Scholars in Washington, DC. DC-launch of stunting study results, including a presentation of TIPs, in-depth interviews, maternal diet and avian influenza was presented at MCHIP Washington, DC office, August 27, 2014.
2. What effect does exposure to CHW home visits and group sessions have on women's knowledge and behaviors regarding pregnancy and	A similar program was effective in decreasing prevalence of low-birth weight and underweight (6-23 mos.) when implemented on a relatively small scale in Upper Egypt. The current package builds on previous experience with modifications: 1) addition of IYCN interventions to prevent	Data collection through the baseline/endline survey, which includes comparison districts. Routine, robust monitoring data including CHW registers and maternal health cards record CHW inputs and women's use of services. This data will be triangulated and analyzed with endline data that includes exposure	Dissemination includes one peer-reviewed journal publication.

PROGRAM LEARNING TOPIC	RELEVANCE OF TOPIC	PLANS FOR STUDYING, DOCUMENTING, AND DISSEMINATING	RESULTS, REPORTS, PRESENTATIONS, ETC.
newborn care?	stunting; 2) training of private providers on key MNCH-FP messages; and 3) rapid expansion through local NGOs with no previous experience in a target population of approximately two million. The intervention package is intensive and the implementation duration is short (12 months). Lessons from this experience will inform further expansion by local partners within Egypt. The model may also be useful in similar contexts in other countries.	measurements. Ideally we also will have data from Public Health Units on changes in use of ANC/PNC/MNCH services, in areas where MoH gives access to service records.	
3. Does the intervention have positive effects on women's knowledge and couples' decision making on postpartum family planning?	Access to and knowledge of family planning services is low in Egypt and there is a pressing need to enhance equity in terms of decision-making between men and women. In order to increase family planning uptake, the MoH, health professionals and health programs and donors need to address the special needs of postpartum women, timing of return to fertility, and postpartum contraceptive options. This study looks at the SMART community approach to increasing healthy family planning knowledge and behavior in Egypt, as well as decision-making along gender lines and societal barriers to contraceptive use.	Data collection through the baseline/endline survey, which includes comparison districts.	One peer-reviewed journal article will be published.