

Hanan Maternal Child Health and Nutrition (MCHN) Project West Bank & Gaza



**End of Project Report
June 2008**



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I. Executive Summary

Hanan is three-year, USAID-funded project that started in January 2005. The Project aims to improve access to quality maternal and child health and nutrition services, and to promote healthy practices at household and community levels, for the benefit of vulnerable Palestinian women and children living in the West Bank and Gaza.

In implementing four program components – mobilization of communities for improved health practices, quality improvement of clinical services, behavior change communication, and support for emergency preparedness and response – the Hanan team has worked with a range of Palestinian partners to ensure effective implementation, high value and impact, and long term sustainability.

The project and its partners have worked in 113 communities and 78 NGO and UNRWA clinics and hospitals in 16 Governorates in the West Bank and Gaza. In addition, the project has supported the Ministry of Health to provide service access and enhance service quality in 44 clinics across the West Bank.

Each of Hanan's program components is briefly summarized here:

Community Mobilization

In the community program the Project worked with its partners' community health workers, who made home visits to educate and counsel women of reproductive age (15-49 years) as well as family members - such as husbands and mothers-in-law - that influence the health decisions of women and their young children. The health workers conducted health education sessions using Hanan's communications and marketing products, for example educational booklets, activity books, and CDs of radio plays and songs. They also worked with local committees in order to mobilize their communities to practice healthy behaviors. Typically, community organizations, women's organizations, the municipality or village council, doctors, nurses, kindergarten teachers and principals, community leaders, and beneficiaries were represented on the committees. In the West Bank, active community and women's organizations received basic equipment to support mobilization and health education activities for women and children.



With support from the health workers, the committees organized special campaigns that linked communities with their clinics to promote a particular health practice – for example pregnant women seeking early postnatal care, or home prevention and management of diarrhea in infants and young children. Other campaigns included cleaning days at which everyone in the community would join in to clean the streets: volunteers went door to door to raise awareness and interest in participation, health workers led education sessions, private businesses provided cleaning supplies and equipment, owners of dewans made their halls available, and the municipality committed to maintaining a clean environment for their people. These campaigns typically lasted 1-4 days.

Supported by the health workers, kindergartens have been instrumental in introducing healthy foods in their canteens. In Gaza, a group of kindergartens formed a special committee to take forward and sustain the healthy canteen initiative with support from the Ministry of Education.

Individual volunteers and those working on committees have been integral to supporting and promoting Hanan's community program, and it is through their efforts that the program has maintained its momentum and will likely be sustained in the long run.

Sixteen community health outposts (Level One clinics) were established for the Ministry of Health across Tulkarem, Jericho, Hebron, Salfet and Jenin districts, in communities that are small and often isolated, and generally lacking health services. The clinics were provided with signage, furniture and medical equipment to ensure provision of basic services for women and children. In addition, a cadre of community health workers were recruited and trained jointly by the Ministry of Health and Hanan, in order to establish models of excellence in delivering community-based maternal and child health services and implementing community mobilization activities in those communities. The Ministry of Health has already integrated into their system the health workers trained under the Project.



Clinical Services Quality Improvement

Hanan collaborated with a wide spectrum of West Bank and Gaza clinics and hospitals – public and private, large and small, urban and rural – to strengthen their infrastructure and improve the quality of their services and management. Work with the MOH system involved upgrading the level of care in 28 clinics providing primary maternal and child health care and associated laboratory services.

Initially, Hanan conducted an assessment of existing technical standards, protocols, guidelines, training curricula, tools and resources (managerial as well as clinical) that could be adopted, adapted and built upon. Health facility assessments were then carried out to identify technical and managerial needs and priorities of prospective clinical partners, as well as the equipment needs of clinics and hospitals. Based on this assessment, Hanan and each facility jointly used the facility-specific findings to develop an individualized quality improvement plan, according to which Hanan then organized and monitored its support in partnership with clinic and hospital staff and managers.

In addition to providing a formal training program for health providers that addressed the full range of essential maternal and child health topics, as well as key management topics, a variety of quality improvement tools were created in Arabic. This made information available in English language protocols more accessible, practical, and understandable, so that health providers could consistently reach higher standards of performance. Such tools included job aides, wall charts, supervisory checklists, posters, and calendars. Medical record forms were introduced in clinics where none existed before.

Recognizing that, in the absence of continued and effective supervision at the clinic level, any improvements enabled by Hanan would quickly evaporate, major attention was given to establishing simple but effective supportive supervision systems involving problem solving, mentoring, and on-the-job training. These interventions served to reinforce knowledge and

skills received during formal training and support the continuous improvement of service provision.

Hanan also introduced the Balanced Scorecard, a comprehensive tool to assess clinic compliance with protocols and changes in facility practices. This was well received by Project partners, some of whom adapted it to suit their needs and will utilize it to chart continued progress and next steps for service quality improvement.

To ensure that clients' voices were heard and responded to, clinics received suggestion boxes to be used for client feedback, cases to display health education materials, signage to ensure clinic visibility (and therefore, enhanced client access), and training in client-centered care. Client flow analysis methodologies were introduced in selected partner clinics facing problems associated with over-crowding and high client demand. These methodologies were successfully applied to reduce client waiting time and increase the time that providers could spend with each client.

A wide array of essential medical equipment and clinical supplies was provided to enhance an existing service and/or introduce a new one. Additionally, the team worked with the USAID-funded Emergency Medical Assistance Project to provide Hanan's partner clinics and hospitals with pharmaceuticals and disposables, and with USAID's Emergency Water and Sanitation Project and Emergency Jobs Program to make needed improvements to clinic infrastructure.

Communications and Marketing:

Four high quality educational booklets, covering topics spanning from early pregnancy to management of childhood illnesses, were developed by the Project and distributed at all intervention sites. In all, the Project supported the development of 23 original media products on maternal and child health and nutrition topics. These include, amongst others, a theatre performance, a radio play series, ten original Palestinian songs, a Children's Activity Book and a book of traditional recipes of high nutritional value for pregnant and post-partum women.



In conjunction with the Project's clinic and community programs, special effort was made to ensure that all products were actively used by providers and by women and children in their homes, schools and communities. Hanan's communications and marketing program component thus played a critical role in fostering an enabling environment for maternal and child health, and in conveying important health messages to women and children and other individuals that influence their health.

Project monitoring and evaluation data, as presented below, indicates that women have increased knowledge and adopted new health practices as a result of information gained through these products and associated intervention activities.

Emergency Preparedness and Response

At USAID's request, an Ad Hoc Emergency Fund was established in 2006, during a deteriorating humanitarian and economic situation. In particular, the Fund was used to procure critically needed medical equipment and spare parts for eight hospitals providing

maternal and child health services across the West Bank and Gaza. All of the hospitals faced increased demand for their services and, at the same time, severe challenges in providing continued services to women and children. Urgent needs encompassed a wide array of basic equipment, such as hospital beds, examination tables and trolleys; laboratory, intensive care and surgical equipment; and spare parts for regular maintenance, replacement and repair of existing equipment.

Pre-hospital emergency medical kits, for use by both professional and lay health providers, and emergency delivery kits, for use by qualified health professionals to deliver babies safely in situations where hospital services could not be accessed, were also procured through the Emergency Fund. To ensure active and proper use of these kits, Hanan further supported the training of professional and lay health providers in pre-hospital emergency medical services provision, and of obstetricians/gynecologists in Advanced Life Support in Obstetrics and neonatal resuscitation. Follow-on support to help participants effectively practice and apply learning was also provided through the Project. Both the procurement and training elements of this program component were designed to support appropriate emergency preparedness and response in selected West Bank and Gaza communities, clinics and hospitals - especially those that, due to their geographic location, must be self-reliant in the face of emergencies.

Monitoring and Evaluating Project Outcomes:

To monitor changes in Palestinian women's health status, knowledge and behavior, as well as changes in child health status, the Project implemented an annual household survey. Additionally, the Project conducted rounds of facility surveys to measure changes in provider knowledge and practice, and client experience and satisfaction.

Annual household survey results demonstrate that the Project has contributed to visible improvements in women's maternal and child health-related knowledge and behavior. Furthermore, facility survey results indicate that improvements in quality of care have been achieved with Project clinic and hospital partners.

II. Evaluation of Changes in Facilities and in the Community

Summary of Results According to USAID Performance Monitoring Plan

The Project's principal results, as measured against 18 indicators of service quality improvement and improvement of maternal and child health, are presented here. The indicators are contained in Hanan's Performance Management Plan, approved by USAID.

Objective 1: Improved quality of maternal child health and nutrition services

Sub-objective 1.1: Improved compliance with internationally accepted standards and procedures related to maternal and child health and nutrition services.

Indicator 1. Number of participants trained in maternal and child health and nutrition and emergency medical services, by profession and technical area.

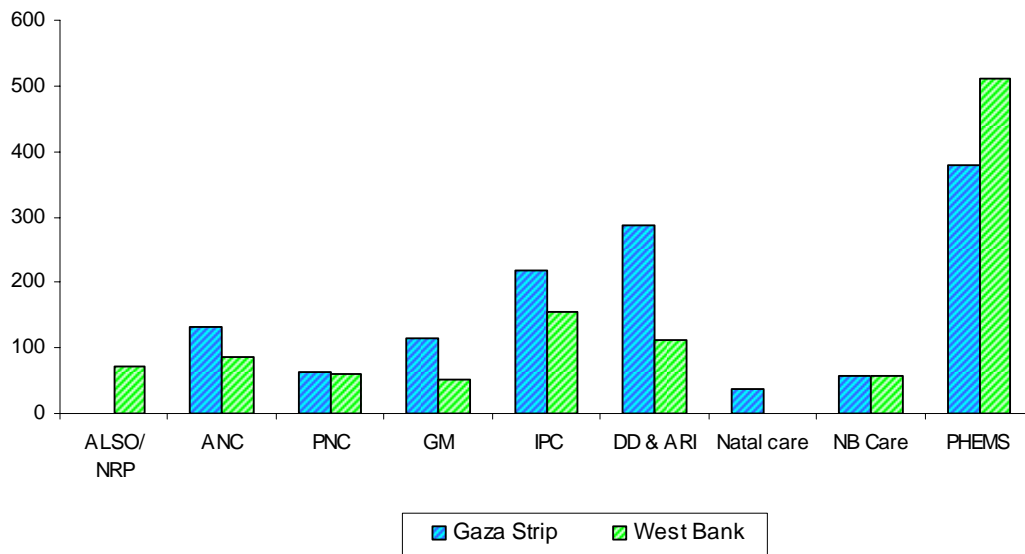
Hanan trained 3,269 individuals in maternal and child health and nutrition and emergency topics, exceeding its target of 3080. This number includes 2,304 individuals trained in maternal and child health and nutrition topics, and 965 individuals trained in Pre-hospital Emergency Medical Services, and Advanced Life Support in Obstetrics and Neonatal

Resuscitation. All training curricula were based on internationally accepted protocols and guidelines.

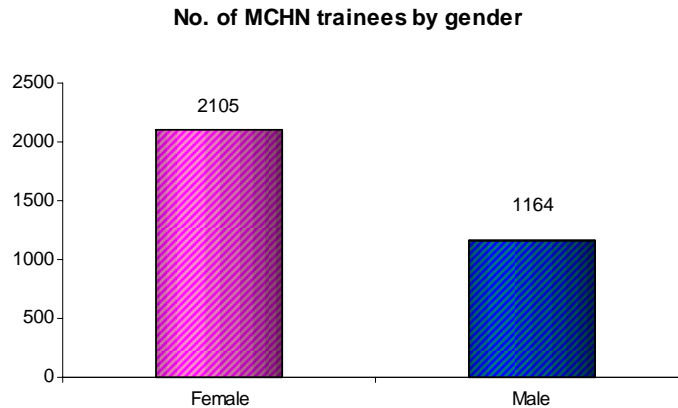
Formal courses offered to clinic and hospital based staff included:

- Antenatal care
- Postnatal care
- Newborn care
- Normal childbirth
- Advanced Life Support in Obstetrics (ALSO)
- Neonatal Resuscitation Program (NRP)
- Pre-hospital Emergency Medical Services (PHEMS)
- Management of acute respiratory infections and Diarrheal diseases
- Growth monitoring and nutrition
- Infection prevention and control
- Communication and Counseling
- Supportive Supervision
- Management for health organizations
- Health Information Systems (HIS)
- Data analysis
- SPSS (Statistical Package for Social Science)
- Patient Flow Analysis
- Time and stress management
- Client Centered Approaches in Health Care
- Data reporting, completeness and accuracy
- English Medical Language

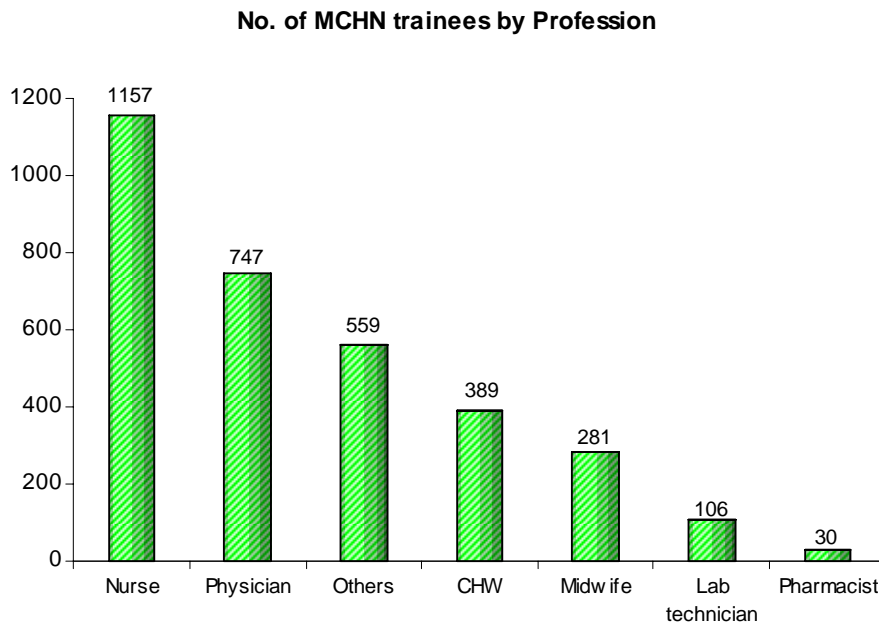
No. of trainees by type of formal training



Of the 3,269 individuals trained, over 64% were women.

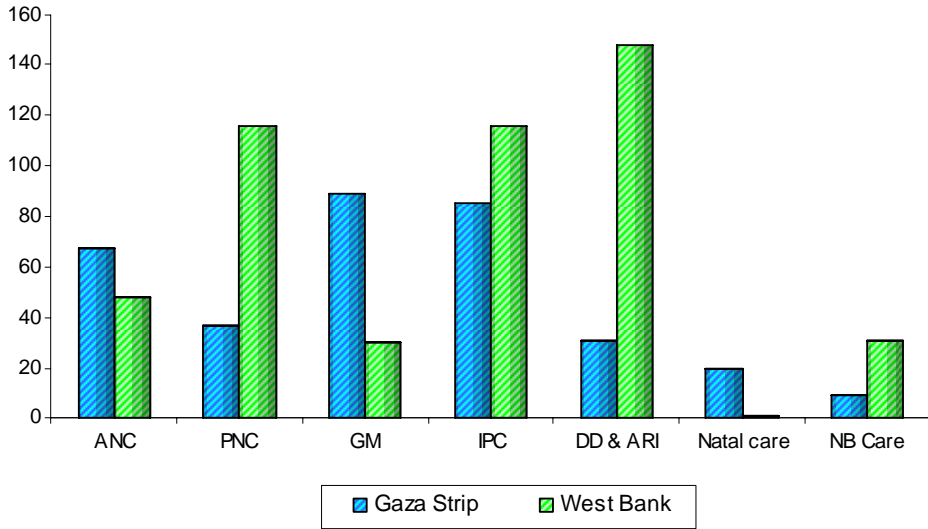


The majority of staff trained were nurses and physicians.



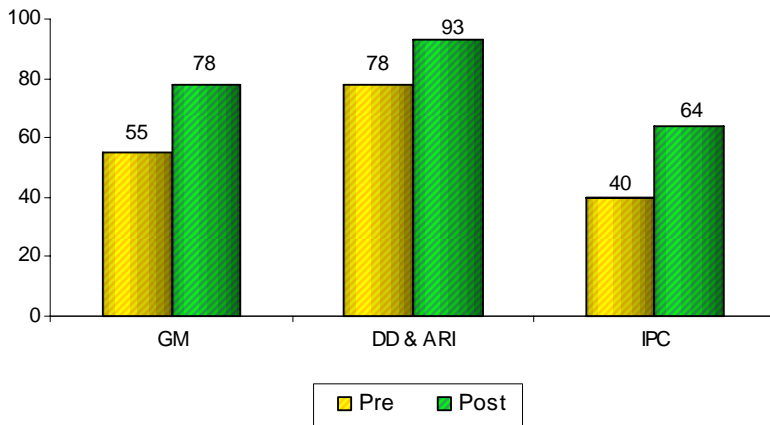
Through supportive supervision, the team was able to observe first hand the need for, and challenges to, implementing changes in facilities. Tailored on-the-job training further allowed Hanan staff to work with clinic staff in areas where they could immediately and realistically implement change. Supportive supervision and on-the-job training supplemented formal training received by clinic and hospital staff. The numbers reported above encompass formal and on-the-job training.

No. of trainees by type of OJT



Pre/post training questionnaires were administered for growth monitoring, diarrheal disease and acute respiratory infection, and for infection prevention and control formal trainings. Some sample results are shown in the figure below. They show a clear improvement in participants' knowledge post training, demonstrating the trainings' effectiveness.

Training Pre/Post Results



Indicator 2. Increase in the average compliance score across Hanan partner clinics (As related to compliance with nationally/internationally accepted standards and protocols).

Clinical and managerial checklists were used to assess improvements in quality of care provided by clinic staff, prior to and following Hanan interventions. An analysis of 1,701 clinical checklists administered with the same partner clinic staff members prior to and following receipt of Hanan interventions was conducted to calculate an total average compliance score. The checklists included 528 on child health (acute respiratory infection, diarrheal diseases, growth monitoring), 633 covering maternal health topics (ANC at first and

subsequent visits, PNC, newborn care, delivery), 273 addressing infection prevention and control (systems, supplies and procedures), and 267 checklists addressing management topics (see indicator 8 for management checklist results). Results of the analysis of 190 individuals show that the average checklist score achieved increased from 74% before Hanan interventions, to 89% following Hanan interventions



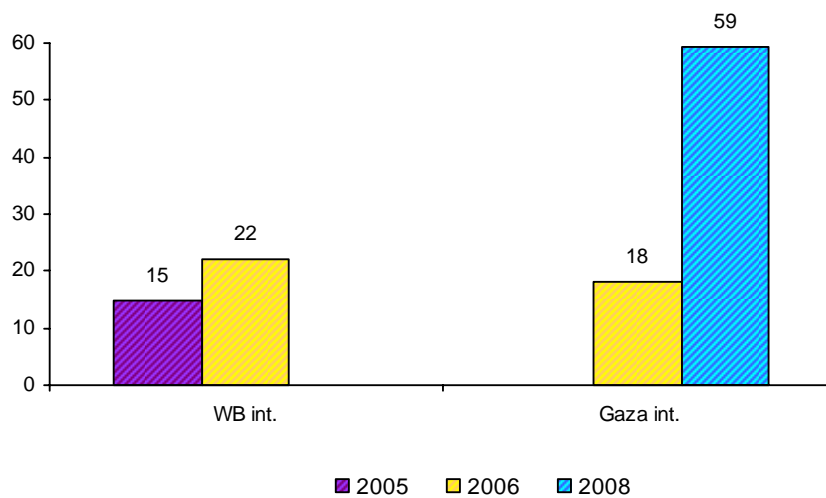
Sub-objective 1.2: Increased availability of functional maternal and child health and nutrition services

Five indicators were used to measure changes in availability of functional services.

Indicator 3. *Percentage of women living in communities working with Hanan who delivered during the last 11 months (plus 30 days) and who received postnatal care at least twice*

Receipt of timely postnatal care was a key behavior Hanan activities sought to impact. The project target of 15% was established based on the full sample included in the 2005 survey and reflecting an increase over the baseline figure of 9.2%. Communities included in the comparative analysis were only those in which Hanan intervened, so that direct pre-post assessment of change, attributable to the Hanan Project, could be made (see Annex 1: Household Survey Methodology). Survey data post-intervention shows a statistically significant ($p \leq .05$) increase in Gaza in the proportion of women receiving at least two PNC visits following Hanan activities, from 18.2% in 2006 to 59.4% in 2008. There was a visible, though not statistically significant, increase following Hanan interventions in West Bank from 15.0% in 2005 to 22.2% in 2006.

B2. Timely PNC: 1st within 6 hours, 2nd within 6 days



- **Significant increase $p \leq .05$ in Gaza intervention area**

Encouraging women to seek timely PNC is especially challenging in that if women are feeling fine, and their newborn is healthy, they do not seek care. Furthermore, through Hanan we found that providers often emphasize to new mothers that they should return to the clinic at the first sign of not feeling well or if she encounters any danger signs. By not emphasizing that the woman should return *regardless* if she is feeling well or not, the health providers themselves are, in part, unintentionally reinforcing the notion that she only really needs to seek postnatal care if she is not feeling well.

Indicator 4. *Percentage of children aged under 6 months who were exclusively breast fed (in the last 24 hours)*

One key objective of Hanan activities was to increase the percentage of mothers who breastfeed their infants exclusively until the age of six months. Clinic and community mobilization activities stressed the importance of breast milk as the ideal nourishment for babies. All Hanan messages were consistent with World Health Organization recommendations that mothers practice six months of exclusive breastfeeding, followed by mixed breastfeeding with the introduction of complementary foods for up to two years.¹

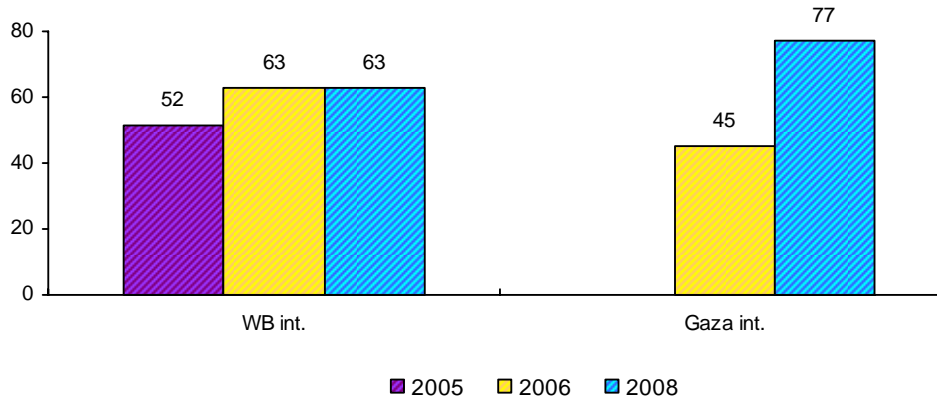


In order to establish a relationship between Hanan activities and exclusive breastfeeding, the analysis considered whether mothers reported being counseled by a health worker (physician, nurse or community health worker) regarding breastfeeding, and whether they are able to correctly identify how old their infant should be before introducing fluids or foods to the diet, in other words how long to breastfeed exclusively.

The proportion of women who could identify, without assistance, the appropriate age at which to introduce fluids and foods to their infant's diet rose from 52% to 63% in West Bank post Hanan intervention, and from 45% to 77% in Gaza following Hanan interventions. As shown below, this increase in knowledge is paralleled by a similar increase in the proportion of women exclusively breastfeeding their children over the same time period.

¹ WHO/UNICEF 2003: Global strategy for infant and young child feeding, WHO.

K2. Women who know 6-9 months as appropriate age to introduce food/fluids among those ever received breastfeeding counseling



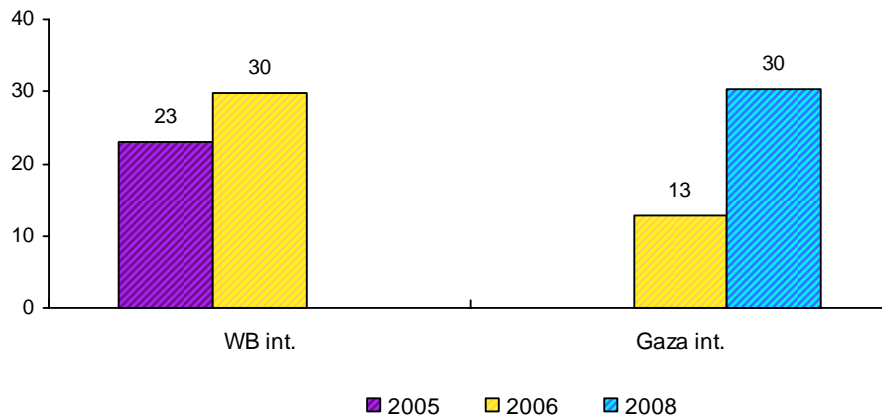
- **Significant increase $p \leq .05$ in Gaza intervention area**

Hanan monitors changes in exclusive breastfeeding using a proxy indicator that measures the percentage of infants under six months who have received nothing except breast milk during the previous 24 hours. The Palestinian National Authority (PNA) Ministry of Health and the World Health Organization also employ this indicator for the same purpose. The indicator is meant to avoid inaccurate recall by mothers of feeding habits over the relatively long period of six months. While the indicator is effective for monitoring changes in behavior, the reader should note that the indicator is an overestimate of the percentage of mothers breastfeeding exclusively for six months since many of the infants included in the indicator calculation had not yet reached this age.

Within the context of this report, the indicator is especially interesting because it measures a behavior at the time of the survey. As a result, the indicator has the potential to provide evidence of the positive effects of Hanan activities because breastfeeding at the time of the survey could feasibly have been influenced by Project implementation within the West Bank and Gaza intervention areas. As shown above, women in Hanan intervention communities were more likely to know that infants should breastfeed exclusively until six months of age, following Hanan interventions. As a result, the similar increase in exclusive breastfeeding among respondents provides especially compelling evidence of behavior change resulting from counseling activities.



B3. Exclusively breastfed in the last 24 hours?



- **Significant increase $p \leq .05$ in Gaza intervention area**

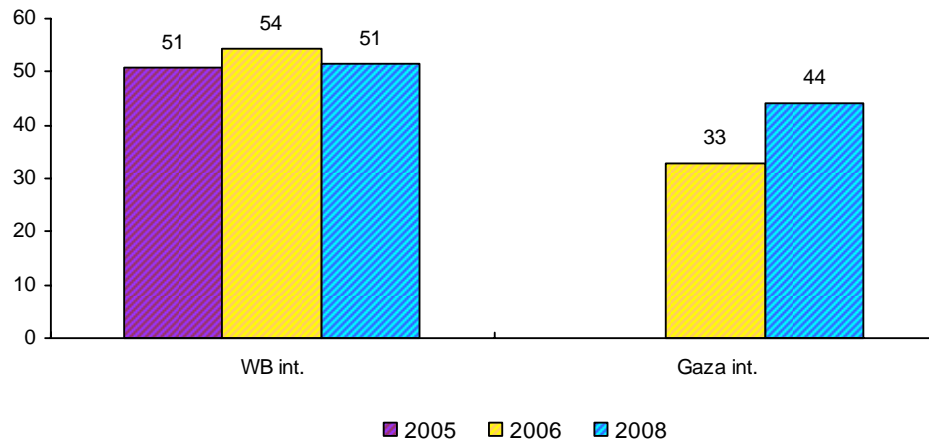
In fact, women from intervention areas were 7% more likely in West Bank and 17% more likely in Gaza to have breastfed their infants exclusively at the time of the post-intervention surveys (2006 in West Bank and 2008 in Gaza).



Taken as a whole, the survey data provide important evidence supporting a causal relationship between Hanan activities and improved exclusive breastfeeding. Namely, after five months of Hanan activity in West Bank, and 13 months in Gaza, respondents demonstrate significantly improved recall of a key breastfeeding message accompanied by substantial and significant increases in the targeted indicator: exclusive breastfeeding of infants under six months old in the last 24 hours.

Early on, Hanan community mobilization team members identified that very high proportions of women know of the importance of breastfeeding. However there were much lower percentages of women who knew of the importance, and practiced, exclusive breast feeding for six months, and also of the importance of early initiation of breastfeeding within the first hour after birth.

B4. Breastfed within 1st hour after birth



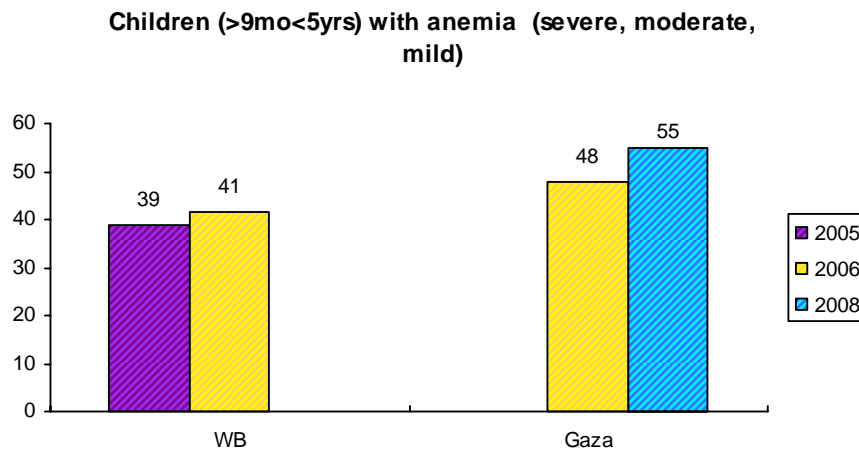
Though the annual household survey data show some increases in this behavior following Hanan interventions, they do not show statistically significant increases in either the West Bank or Gaza. Some possible reasons for this is that early initiation within the first hour after delivery is a behavior that takes place in a hospital setting, where the majority of women deliver. Hanan did not intensively work with hospitals until late in the Project, and thus had limited intervention time to effect significant change with hospital-based providers. Further interventions are needed in this area in the future.



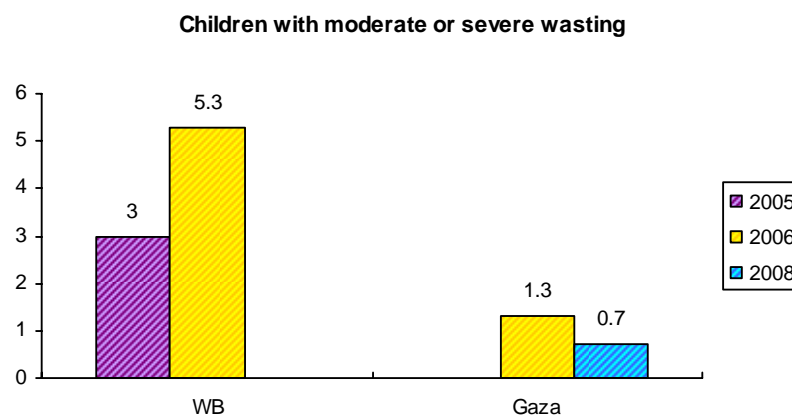
Indicator 5. Percentage of children older than 9 months and U5 who have anemia

In the relatively short, eighteen month time-frame of project implementation, reductions in the prevalence of anemia were not achieved. Although some project activities did focus on anemia prevention and treatment, these were not of an adequate intensity or scope to achieve national-level reductions in anemia, which is a longstanding and significant condition seen in Palestinian children. More, future interventions are needed in this area.

The increases seen in anemia levels in the West Bank and Gaza could be attributed to the difficult prevailing economic and humanitarian conditions that have prevailed over the past year. These conditions have made it more difficult for women to habitually feed their children iron-rich foods and, in some intervention sites, to access appropriate and timely treatment for their children's anemia.



Indicator 6. % of children U5 with moderate or severe wasting



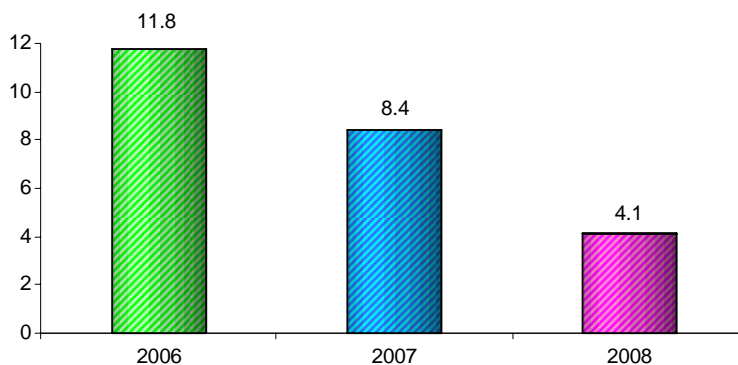
Unfortunately, though the proportion of children with moderate or severe wasting remained very low, and even decreased slightly in Gaza, the West Bank saw a jump in the proportion of wasted children over the life of the project. Addressing wasting was not a significant focus of Hanan activities. It was found that more foundational work was needed first in order to establish growth monitoring clinical service availability. The Project did work with a number of clinic partners to establish growth monitoring services, but it was not able to delve more deeply into preparing providers to correctly recognize and address wasting.

Indicator 7. *Percentage of children U5 who have had diarrhea in the last two weeks and were offered more fluids than usual during their illness*

Although a number of Project activities at community and clinic level focused on prevention and management of diarrheal disease in children, the intensity of interventions in this area were clearly not enough to achieve significant results against this indicator.

Counseling was a key method of intervention in both Hanan's community and clinic-based activities. In clinics and hospitals, Hanan worked with health providers to encourage consistent, accurate and thorough counseling of patients on MCHN topics. This was carried out through direct observation of doctors and nurses carrying out counseling, as well as through modeling proper counseling techniques by directly counseling patients as facility health providers observed. In the community, Hanan staff counseled women individually, through family home visits, as well as during group health education sessions. As a result, we looked at counseling across indicators, as a specific intervention, and assessed whether women who have received counseling were more likely to have healthier children than those who did not receive counseling. Results show that mothers reporting no counseling were 31% more likely to have child with diarrhea in last 2 weeks in 2006, and 66% more likely to have child with diarrhea in last 2 weeks in 2008. The protective effects of counseling are clearly shown, indicating that Hanan's approach was sound and effective. However, as noted above, the intensity of interventions was not enough to achieve significant results against this indicator.

Children with diarrhea in the last 2 weeks offered more fluids than usual



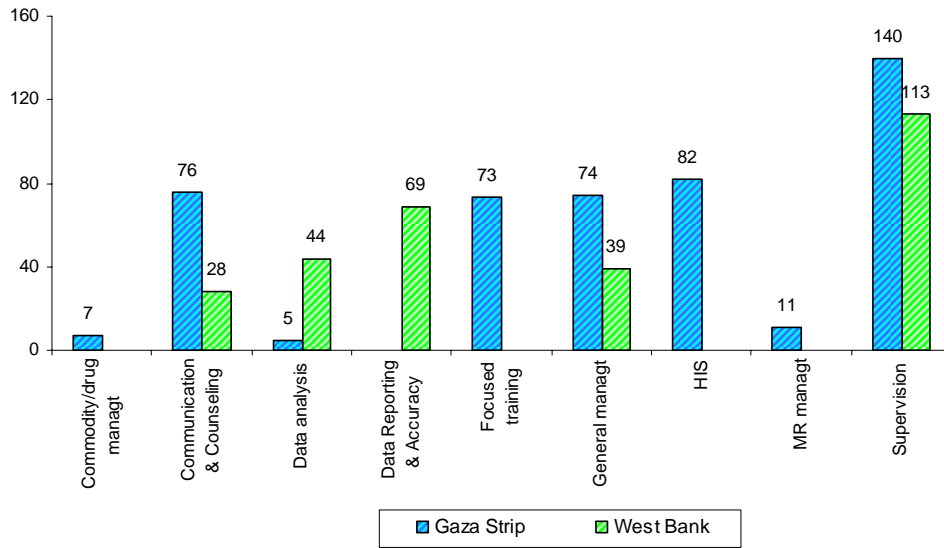
N=343 children who suffered from diarrhea two weeks before the survey

Sub-objective 1.2.1: Improved capacity of health providers and local organizations to manage and maintain quality MCHN services.

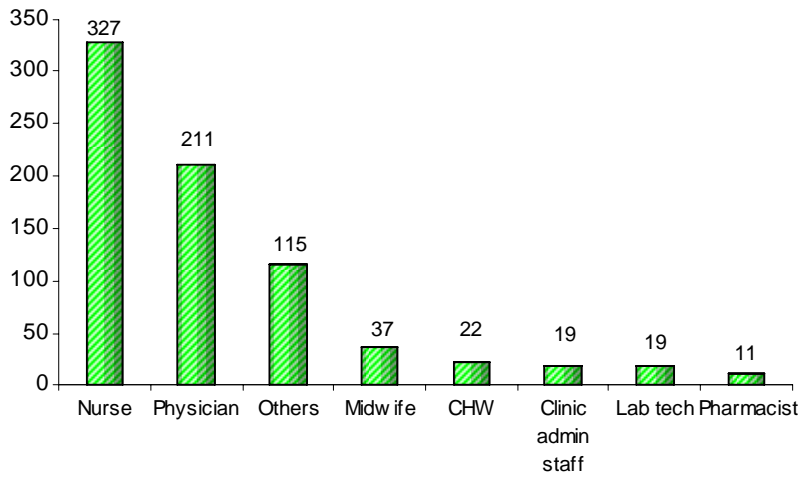
Indicator 8. *Number of participants who receive relevant training on appropriate key management practices that relate to their current and potential areas of responsibility*

Hanan trained 546 individuals in clinic management topics, more than doubling its target of 218, and conducted 267 management checklists. Management training topics included: commodity/drug management, communication and counseling, data analysis, focused training, general management, health information systems, supervision and medical records management.

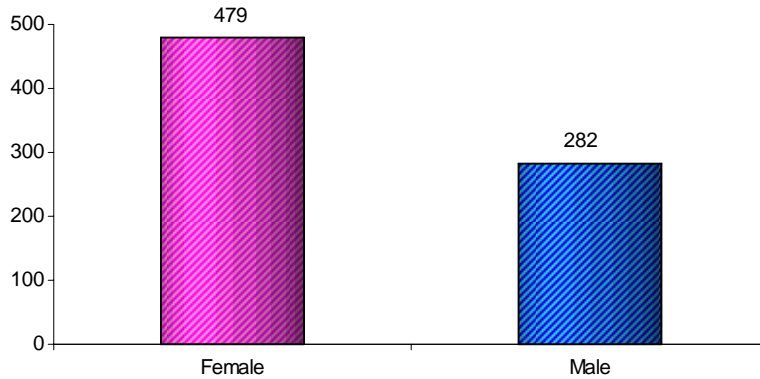
No. of trainees by type of training



No. of trainees on management skills by profession



No. of trainees on management skills by gender



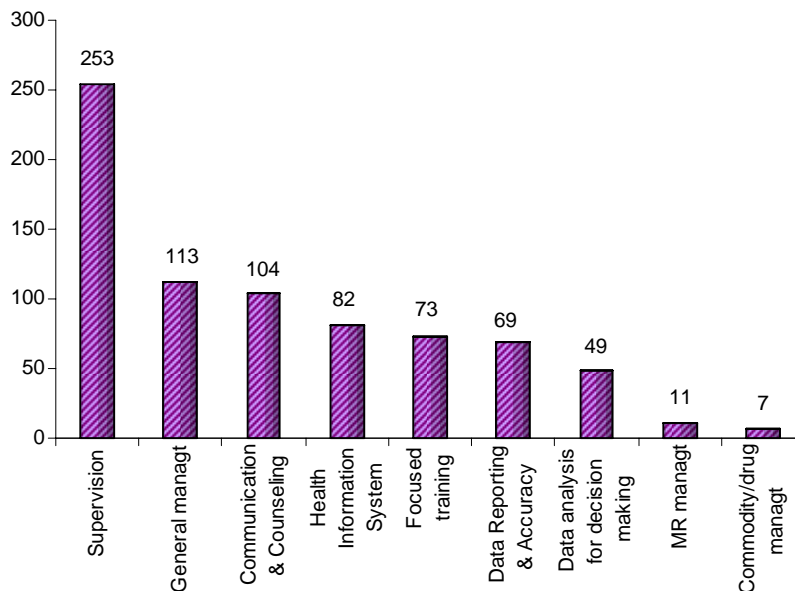
Indicator 9. # of Hanan partner clinics with improved management systems

Hanan carried out management improvement activities in 78 NGO clinics to promote effective management systems, thus ensuring efficient functioning of clinics. To measure the number of clinics with improved management systems, subsequent to Hanan interventions, Hanan developed six management checklists.

These checklists were administered a total of 267 times and addressed management topics such as: marketing and communications, recording and reporting, supervision and monitoring, management of commodities, commodities storage and availability, and referral, as indicated in the graph below.

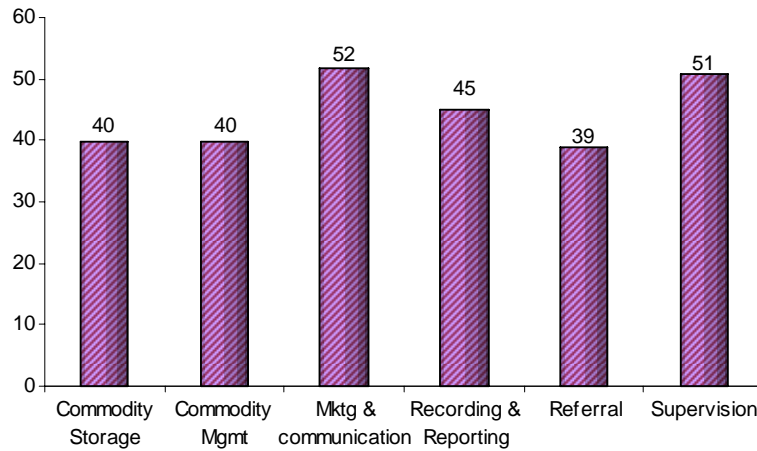
Of these, Hanan successfully collected pre- and post-intervention checklists at the clinic level from the same staff members for four of the six checklists most frequently administered. Findings from the checklist data show commodities storage and availability management improved 20%, from 74% to 94%. General commodities management

Management training by training type



improved 7%, from 88% to 95%. Supervision and monitoring systems improved from 61% to 79% (18% improvement). And marketing and communications systems improved from 22% to 85%, a 63% increase.

No. of Management Checklists conducted



Objective 2: Improved behavior related to maternal child health and nutrition

Sub-objective 2.1: Improved knowledge of maternal and child health and nutrition among Palestinian families.

Indicator 10. *Number of knowledge promotion activities/events/visits that address key MCHN messages by type of message, number of beneficiaries and location*

The Hanan Project completed 43,232 total knowledge promotion activities throughout all of the targeted Hanan communities aimed at improving MCHN behaviors that maintain and improve maternal child health and nutrition. These activities include: 7,199 health education sessions, 26,527 home visits and 9,506 individual counseling sessions. This far exceeds the original project target of 4000 activities. The total number of beneficiaries reached through these activities was 109,729 women of reproductive age, 22,562 children under 5, and 69,275 family members.

Hanan activities, and in particular the community mobilization activities, addressed a range of child nutrition issues with new and expectant mothers. The table below presents the proportion of mothers that were able to spontaneously recall Hanan messages from among all mothers who were counseled or received advice regarding child nutrition from any source.

K3. Mothers' recall of six key child/infant nutritional messages**

		West Bank	Gaza
The importance of breastfeeding	2005	63.7%	-
	2006	81.5%	55.0%
	2008	66.2%	81.8%
Immediate breastfeeding	2005	21.3%	-
	2006	38.7%	4.3%
	2008	23.7%	28.1%
To breastfeed child on demand	2005	7.9%	-
	2006	35.8%	2.9%
	2008	9.3%	10.7%
Introducing other food	2005	40.7%	-
	2006	49.6%	28.4%
	2008	51.7%	42.5%
Number of times to feed	2005	8.9%	-
	2006	31.1%	11.3%
	2008	13.9%	7.2%
Exclusive BF 6 months old	2005	26.7%	-
	2006	42.9%	8.5%
	2008	47.7%	39.2%

Bold red = significant decrease in message recall ($p \leq .05$)

Bold blue = significant increase in message recall ($p \leq .05$)

**Among mothers of U5 children who received nutrition advice or counseling

Hanan conducted 43,232 home visits, health education sessions and individual counseling activities. As a result, we would hope to see increases in respondents' ability to recall these messages as a precursor to any positive behavior change that may result from these activities in the future.

Again, results from the pre- and post-intervention surveys (2005 to 2006 in West Bank, and 2006 to 2008 in Gaza) offer strong evidence supporting the hypothesis that Hanan activities contributed to significant improvements in knowledge regarding key maternal and child health themes. In 2006, following the Hanan interventions, significantly higher percentages of mothers from West Bank recalled five of the six important nutrition themes. Similarly in Gaza, following the intervention in 2008, mothers' recall of five of the six themes also increased significantly. In contrast, the year following Hanan activities in West Bank show significant decreases from their 2006, post-intervention levels. However it is useful to point out that the follow-up levels in 2008 are still higher than the baseline/pre-intervention levels for every one of the indicators. Nonetheless, the relative decreases in recall again indicate the need to integrate and sustain knowledge promotion activities carried out by the Hanan Project.

Indicator 11. # of media productions/ publications by type of production and location

Throughout the Hanan Project, 23 media products were produced, far exceeding the project target of 10. These publications have included: theatre performances, broadcasting of 10 radio plays, radio plays CD, songs CD, four different education booklets, a children's activity

book, magazine health information tips, Q&A flyer, recipe book, stories of innovation booklet, and *Danger Signs in Pregnancy* poster.

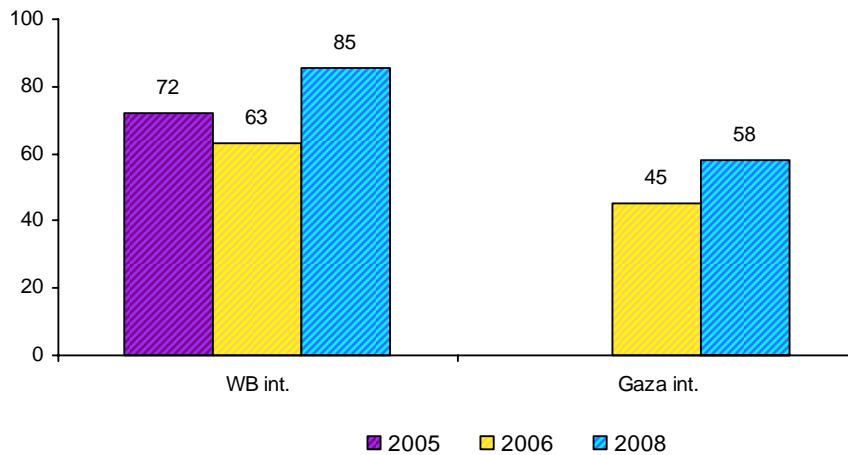
Indicator 12. *Percentage of women living in communities working with Hanan who delivered during the last 12 months and who received timely ANC services*

Hanan’s community education activities focused on encouraging women to positively change their behaviors related to MCHN through increasing their knowledge on these same topics. One of the essential behavior change indicator the project sought to influence was women seeking early and frequent antenatal care. Antenatal care is considered to be ‘timely’ if a woman received care from a skilled provider at least four ANC time, and the first visit occurrence having taken place within the first trimester of her pregnancy.

Though there was an increase following Hanan interventions in Gaza in 2008, we did not see the same increase following Hanan interventions in the West Bank in 2006. The 2008 increase in the West Bank cannot be attributed to Project activities. None of the observed changes were statistically significant in either direction, although the level of care seeking behavior for this indicator is already quite high.

Another reason for the lack of significant change is the relatively short time frame of Hanan interventions, combined with the fact that behavior change takes longer to realize than knowledge change. Further, complex behavior changes, by both providers and women, in the context of their families and communities, are needed to achieve improvement against

B1. Timely ANC services
(4 or more visits and 1st within 1st trimester)



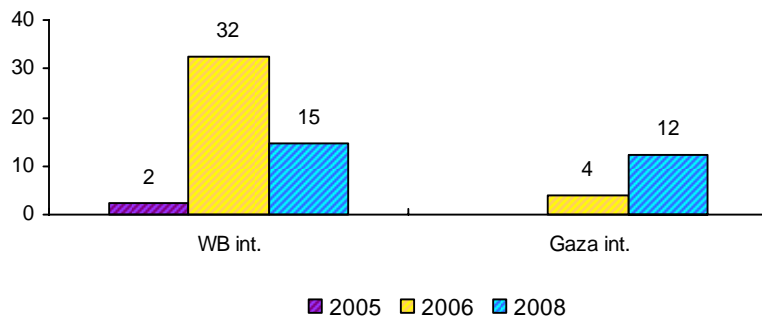
this indicator.

Indicator 13. *% of women who delivered during the last 12 months who can name (unprompted) at least five danger signs that could occur in pregnancy*

Mothers’ ability to name the danger signs of pregnancy with no prompting is a key performance indicator reflecting Hanan’s success in promoting healthy practices among pregnant women. Pre- and post-intervention results in both West Bank (2005 to 2006) and Gaza (2006-2008) provide clear evidence of Hanan successes in the implementation of knowledge building activities, and in identifying the most vulnerable communities.

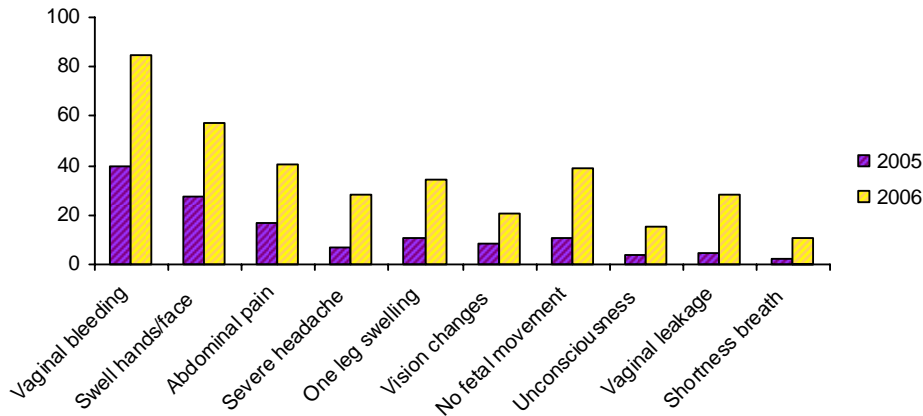
The target for this indicator was 15%, which was far exceeded in West Bank, and only 3% shy of the target in Gaza as well (having reached 12% post-Hanan activities). Prior to Hanan activities in West Bank in 2005, only 2.2% of respondents were able to name five danger signs in pregnancy. Similarly, prior to Hanan activities in Gaza in 2006, only 4.0% in Gaza were able to identify five danger signs. These low levels of knowledge were barely detectable, suggesting that the Hanan targeting exercise successfully identified areas where beneficiaries were deeply in need of the MCHN health education messages promoted by the Project. After the first five months of implementation in West Bank, almost one-third of mothers could name at least five danger signs—almost fifteen times the rate of women sampled just one year earlier in the same communities (from 2.2% to 32.3%). Similarly, in Gaza, three times as many women were able to name five danger signs during pregnancy than prior to Hanan’s community and clinic counseling interventions.

K1. Mother identified five danger signs in pregnancy, unprompted



Significant increase $p \leq .05$ in WB and Gaza intervention areas

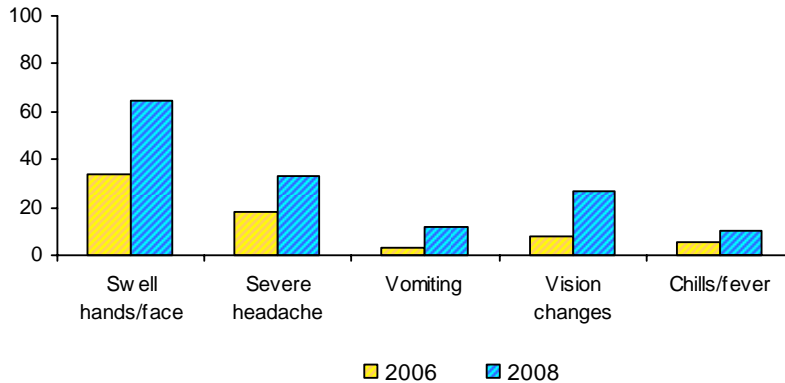
**Knowledge about danger signs in pregnancy: West Bank
All significant changes**



Follow-up results from 2008 in West Bank show the extent to which the changes detected in 2006 were sustained. Though the post-intervention level dropped from 32% in 2006 to 15% in 2008, this level is still significantly higher than prior to Hanan activities in 2005.

Furthermore, when we look all statistically significant changes—including both significant increases and decreases—we see that both West Bank and Gaza communities all show significant increases in knowledge. This increase in knowledge of specific dangers signs directly correlates with the messages discussed in Hanan’s community mobilization program, as well as discussed with health care providers in clinics to disseminate to their clients.

Knowledge about danger signs in pregnancy: Gaza
All significant changes



Mothers’ ability to recall ten dangers signs significantly increased in West Bank following Hanan interventions, and knowledge of five danger signs increased in Gaza following Hanan Project activities.

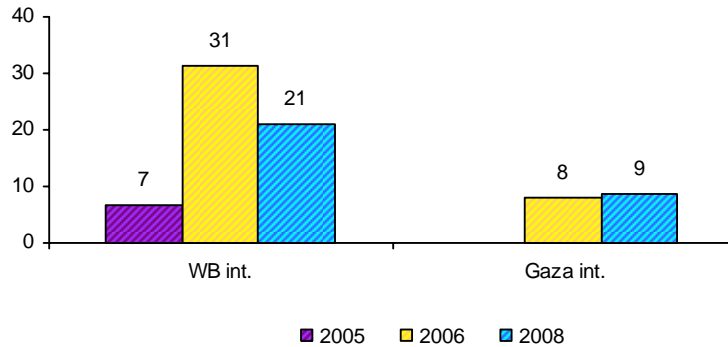
Indicator 14. *Percentage of women, with children U5, who can name (unprompted) at least three dietary iron deficiency anemia prevention practices for women and children*



Mothers’ ability to name three or more dietary practices to prevent anemia without assistance is an important indicator of how well Hanan activities communicated key maternal-child health messages. Hanan project activities intended to improve knowledge regarding anemia prevention and the dangers of anemia in order to motivate pregnant women and mothers to adopt behaviors that prevent anemia. In concert with the

project’s interventions with partner health providers, these efforts should eventually contribute to lower prevalence of anemia among these target populations. However, due to the short time-frame of project implementation, we did not see detectable changes in anemia prevalence during the life of the project.

K5. Name (unprompted) at least three dietary iron deficiency anemia prevention practices for women and children



- **Significant increase $p \leq .05$ in WB intervention area**

Mothers' ability to name three or more dietary practices to prevent iron deficiency anemia showed a substantial and significant increase following Hanan interventions in West Bank, jumping from 6.6% to 31.2%. Improved knowledge of preventive practices in West Bank was well above the project target of 15%. However in Gaza we saw no significant change in this indicator following Hanan activities.

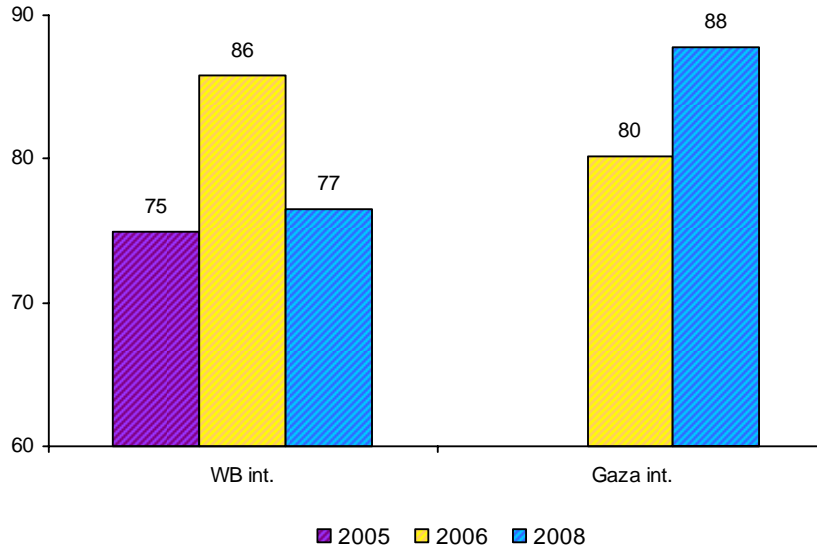
Indicator 15. % of women, with children U5, who (unprompted) know at least two signs of childhood illness that indicate the need for immediate treatment at a health facility

The Project used mothers' knowledge of the symptoms of potentially serious childhood illnesses as an indicator of how efficiently activities are communicating messages in this regard. Statistically significant increases in this indicator, in both West Bank and Gaza (rising 11% and 8% respectively), were achieved in relation to Hanan program activities.



The need to sustain the health education messages is clearly see in relation to West Bank results, which show that increases in knowledge gained (in 2006) following the intervention are lost in the subsequent year (2008).

K4. Know (unprompted) at least two signs of childhood illness that indicate need for immediate treatment at a health facility



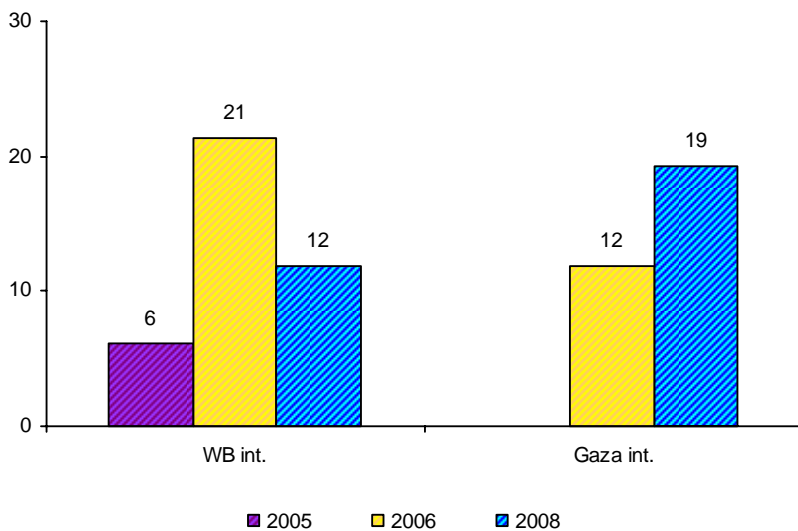
- **Significant increase $p \leq .05$ in WB and Gaza intervention areas**

Hanan activities specifically promoted the early detection, home management and referral of children with diarrheal disease (DD) and acute respiratory illnesses (ARI). Given this focus, data gathered on respondents' success in naming signs related to both of these illnesses with no prompting² provides the opportunity to assess project effectiveness in communicating these specific messages.

Mothers from the West Bank intervention areas were able to name signs of both illnesses more than three times as often in 2006 than in 2005, and Gaza also saw an increase of 7% following Hanan health education activities. Again, however, the need to sustain the health messages is clear as we see the drop from 21% awareness following the intervention in 2006, to 12% the subsequent survey year in 2008.

² Respondents are asked to name signs of illness that signal the need for immediate medical attention for their child. No symptoms or illnesses are given as prompts.

Mothers who know the danger signs of both ARI & DD

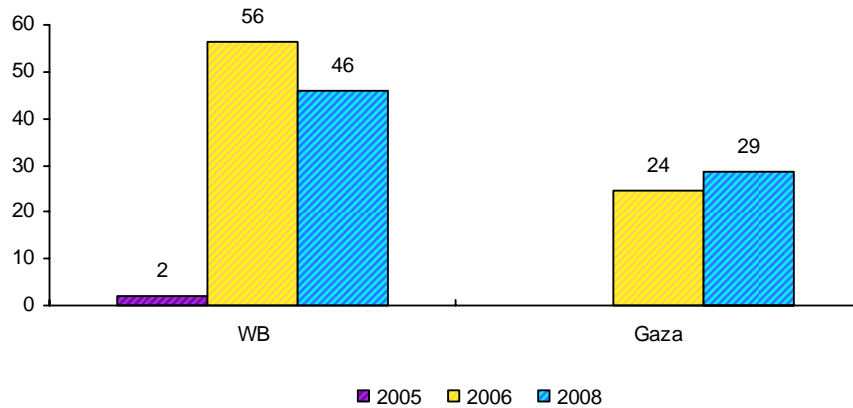


Indicator 16. % of women, with infants less than eleven months (plus 30 days), who received and consumed iron supplement for six months during pregnancy³

Paralleling the increases in knowledge of the importance on supplementation (indicator #14 above), we would expect to see increases in the proportion of pregnant women implementing the new knowledge by taking iron supplementation as clinically recommended for six months during pregnancy



B5. Iron supplementation for 6 months during pregnancy



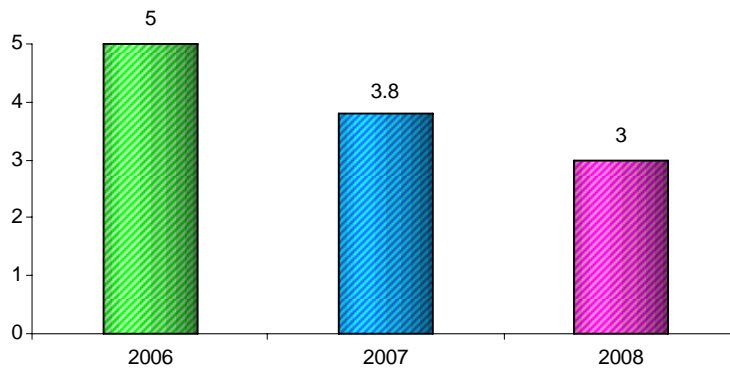
- **Significant increase $p \leq .05$ in WB intervention area**

In fact, we see a strikingly similar pattern between the large knowledge changes in West Bank and the large behavior changes in West Bank, as well as parallels between the limited knowledge changes in Gaza, and similarly limited behavior changes in Gaza on this indicator. Such parallels validate and reinforce the hypothesis that knowledge changes lead to behavior changes. But like other indicators, we see decreases in West Bank a year after Hanan activities had ceased, and though again not down to where they were prior to Hanan implementation, thus highlighting the need to sustain health education messages to encourage consistent positive behavior changes.

Indicator 17. % of children U5 who had diarrhea in the last two weeks and who were treated with ORS within the home

Although some Hanan program activities did focus on topics related to this indicator, they were not of sufficient intensity or duration to effect change, as indicated by the survey results below.

Children with diarrhea in the last 2 weeks treated with ORS at home



N=343 children who suffered from diarrhea two weeks before the survey

Sub-objective 2.2: Improved community mobilization and collective action for improving maternal and child health and nutrition status

Indicator 18. *Number of personnel working with maternal and child health NGOs that have received training to strengthen their ability to influence maternal and child health and nutrition in their communities.*

Formal courses offered by the Project to non-government organization (including community based organization) staff members, covering the following topics:

- Mother Health and Nutrition
- Child Health and Nutrition
- First Aid
- Communicable and Non communicable Diseases
- Community Mobilization
- Communication for Change

Hanan trained 681 individuals from non-government organizations to improve skills relevant to influencing positive change in MCHN at the community level. This exceeds by more than two-fold the project target of 300 individuals.



Conclusion

The end of project analysis provides compelling evidence that Hanan clinic- and community-based activities had a positive effect on mother's knowledge of targeted maternal and child health messages, and that these activities contributed to significant improvements in related healthy behaviors.

Mothers demonstrated significant improvements in their ability to recall five out of six Hanan maternal-child health messages that contribute to its performance monitoring indicators. In intervention areas, respondents' ability to identify five danger signs of pregnancy increased from 2% to 32% in West Bank; knowledge of anemia prevention methods increased from 7% to 31% in West Bank; and, mothers knowledge regarding the symptoms of both diarrhea and acute respiratory infections increased from 6% to 21%.

Evidence regarding additional targeted health messages suggests that counseling contributed to improvements in knowledge. In the case of breastfeeding, large jumps in the number of respondents receiving counseling on the subject are paralleled by substantial improvements in the number of respondents correctly identifying the age at which to introduce fluids and foods to infants. Additionally, mothers who received advice or counseling regarding child nutrition demonstrated significantly better recall of five out of six Hanan messages after the intervention, lending credence to the hypothesis that Hanan counseling had a focused effect on its recipients' recall of health messages.

Significant improvements in the practice of three targeted health behaviors supports the underlying program theory that its activities to improve knowledge would result in beneficiaries practicing healthy behaviors, resulting in improved health outcomes for beneficiaries. Women were more likely in both West Bank and Gaza to breastfed their infants exclusively following Hanan interventions. Proper nutrition and diarrhea prevention were an explicit theme of Hanan activities, and survey results show that children of mothers who had not received counseling or information regarding diarrhea suffered from the disease 66% more than children of mothers that had received information.

The Hanan Project made significant improvements in knowledge related to all five of the knowledge indicators, and 3 of the five behavior change indicators measured. And this was accomplished as a result of mainly 18 months of intensive intervention. Results of the analysis show significant improvements in knowledge related to:

- Danger signs during pregnancy
- Complementary feeding age
- Key child/infant nutritional messages
- Signs of childhood illness
- Dietary anemia prevention practices

Additional, results show significant improvements in behavior in:

- Receipt of timely postnatal care
- Exclusive breastfeeding
- Iron supplementation for six months during pregnancy

Follow-up data a year following the cessation of activities in West Bank communities show the need for keeping the momentum going by encouraging integration of the health education messages into all sectors of the health system—public to private, clinic- to community-based, and targeting not only mothers, but family members and entire communities.

Overall, results demonstrate that the Project's three years of implementation, with a condensed 18 months of intensive interventions, have contributed to visible improvements in

women's MCHN-related knowledge and behavior. As demonstrated by the household survey results for West Bank communities for which we have a third year of follow-up data, a year after the cessation of intensive Hanan activities, the need for sustaining and reinforcing the interventions and health messages promoted by Hanan is apparent.



V Bibliography

Throughout the life of the Project, a number of tools and methodologies, publications and reports, and other documents were produced. Following is a summary.

Community Mobilization

- Hanan Community Capacity Assessment Report
- Hanan Project Community Mobilization Results: Our Communities Talk, 2006
- Technical Brief: “Empowering Communities, Sustaining Social Change: Community Mobilization in the West Bank and Gaza”
- MCHN technical guidelines for CHWs
- Community Mobilization for Community Health Workers
- PMRS-Hanan Community Mobilization Training Workshop Report
- PMRS-Hanan Community Mobilization Program Training Modules
- Women’s Perspectives on Maternal and Child Health and Nutrition: Findings from Hanan Focus Groups

Communications and Marketing

- Hanan Children's Activity Booklet
- Hanan Communications and Marketing Survey
- Hanan Health Booklet: Early Care for Pregnant Women and New Mothers
- Hanan Health Booklet: Newborn Care and Breastfeeding
- Hanan Health Booklet: Complementary Feeding and Growth Monitoring
- Hanan Health Booklet: Prevention and Home Management of Acute Respiratory Infections and Diarrheal Diseases in Children
- Hanan Marketing and Communications Checklist
- Palestinian Families Take Action for Health
- C&M post-test campaign questionnaire
- Communications and Marketing: Post-intervention Results, 2008

Strengthening Mother, Child Health & Nutrition (MCHN) Clinical Services

- Supervisory Checklists: Standardizing High Quality Maternal and Child Health and Nutrition Services in Primary Care Settings
- The Hanan Model Clinic: Criteria for the Organization and Delivery of Essential Maternal and Child, Health and Nutrition Services
- Hanan’s Approaches to Providing Training and Follow-on Support: Child Health, Nutrition and Growth Monitoring and Management of Diarrheal Disease and Acute Respiratory Infection
- Early Postnatal Care
- Hanan On-the-job Training Guidelines
- Hanan Home Visit Form (1)
- Hanan Home Visit Form (2)

Job Aids

- Hanan Newborn Care Calendar and Wall Chart
- Infection Prevention and Control (IPC)
- Hand-washing booklet
- Infection Prevention and Control Posters
- Antenatal Care Job Aide
- ARI and DD (reprints from UNICEF, PMRS and WHO)

Clinic Supervision Checklists

The Hanan project developed 11 maternal health checklists, 3 child health checklists, 7 management checklists, and two infection prevention checklists. All of the checklists can be downloaded in Arabic or English on Hanan's project website at: <http://hanan.jsi.com>

Maternal Health

- Antenatal Care: First Visit
- Antenatal Care: Subsequent Visits
- Care at Admission to Delivery
- First Stage of Labor
- Second and Third Stages of Labor
- Delivery Room System, Setting and Infrastructure
- Early Postnatal Care
- Newborn Care During the Care Postnatal Visit
- Postnatal Care
- Neonatal Resuscitation
- Neonatal Resuscitation Bag and Mask Ventilation

Child Health

- Acute Respiratory Infection
- Diarrheal Disease Control
- Growth, Monitoring, and Nutrition

Infection Prevention and Control (IPC)

- Infection Prevention and Control: Specific Procedures
- Infection Prevention and Control: Systems and Supplies

Management

- Hanan Client Flow and Appointment Systems
- Marketing and Communications
- Recording and Reporting
- Referrals
- Commodities Management
- Supervision and Monitoring
- Commodities Storage and Availability
 - Preparation for Normal Delivery; Normal Delivery; Equipment Needed for Delivery

Clinic Assessment: Balanced Scorecard Tool

- Balanced Scorecard - Client Exit Interview
- Balanced Scorecard - Medical Records
- Balanced Scorecard - Staff Interview
- Balanced Scorecard - UNRWA Staff Interview
- Balanced Scorecard - UNRWA Medical Records
- Balanced Scorecard - UNRWA Client Exit Interview

Annual Household Survey

- Hanan Household Survey Questionnaire Children Under 5 Checklist
- Hanan Household Baseline Survey: Maternal and Child Health and Nutrition Indicators at the Household Level in the West Bank and Gaza
- Hanan Baseline Health Facility Assessment for Maternal and Child Health and Nutrition Services: First Cohort Clinics in the West Bank and Gaza
- Hanan Project Community Mobilization Results: Our Communities Talk, 2006

Other Project Documents

- Project Reporting and M&E Query Forms, and tracking databases
- 13 quarterly reports
- 3 project annual reports.
- Vulnerability Assessment Methodology
- Health Facility Assessment Methodology
- Training Manual for Community Mobilizers and CHWs
- Guidelines for forming Community Coalitions
- Quality Improvement Plan
- On-the-job Training Guidelines
- Hanan Glossy Brochure
- Hanan Communications Plan
- Website Content



VI. Annex 1: Household Survey Methodology

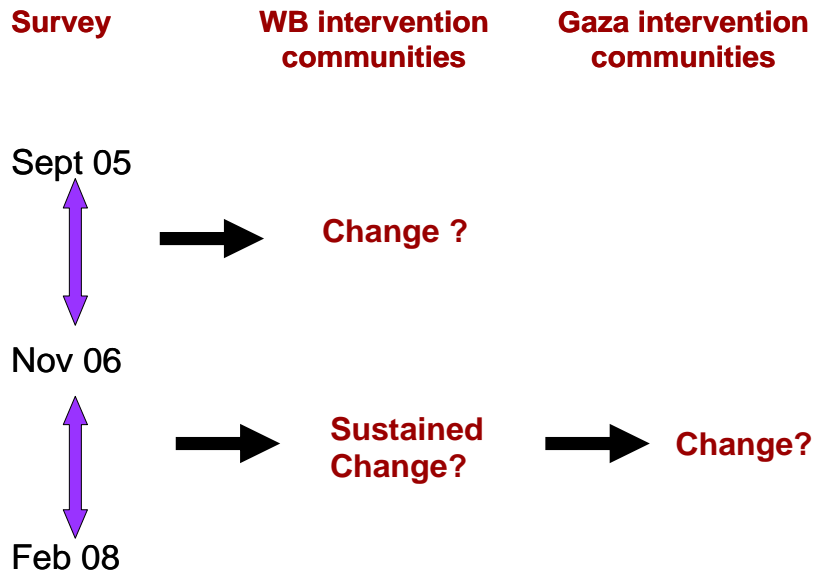
This report presents quantitative evidence of the results of the three-year USAID funded Hanan Maternal Child Health and Nutrition (MCHN) Project. The conclusions about project effectiveness presented here are derived from simple comparisons of data obtained through three surveys completed in late 2005, late 2006, and in early 2008, as well as through other project reports (checklist data, scorecard data, training data, etc). The household surveys monitored changes in women's knowledge and behavior, as well as collected data on growth status and anemia prevalence among children. A comparative analysis was performed assessing the change in key indicators prior to and after project implementation. Key steps in performing the analysis involved:

- 1) Identification of all activities that took place in relation to when the survey data was collected.
- 2) Summary and analysis of three years of survey data to identify what the observed changes were.
- 3) Conducting a wider assessment of activities carried out by other organizations and projects in the same communities addressing the same MCHN topics in order to establish a case for attribution of observed changes to the Hanan Project.

The results presented here reflect the Project's achievements in meeting the goal of improving vulnerable populations' practice of healthy behaviors and utilization of quality maternal and child health and nutrition (MCHN) services. Each household survey measured the same set of indicators targeted by project activities, and the comparative analysis addresses whether observed changes can be attributed to Hanan in the context of other quantitative and qualitative evidence, such as the possibility that the implementation of similar activities in the same area may have produced the change.

Though the Hanan Project lasted for three and one-half years, the bulk of project implementation took place over an 18 month period, between July 2006 and January 2008. All project activities were measured through pre-intervention/baseline and post-intervention/endline data collection and analyses. Activities were rolled out in West Bank prior to Gaza, and thus the 2005 survey serves as the baseline (pre-intervention) and 2006 as endline (post-intervention) for West Bank activities, whereas the 2006 survey serves as the baseline and 2008 as endline for Gaza activities.⁴ Hanan activities in the original West Bank communities included in the survey had either stopped or were significantly scaled back in 2007 as the project expanded into new West Bank and Gaza communities. Thus, the 2008 (third) survey for West Bank measures the extent to which the observed changes seen between the 2005 and 2006 surveys were sustained a year after active implementation had ceased.

⁴ By November of 2006, Hanan had initiated its first community mobilization activities, health facility-based activities, and communications interventions among vulnerable populations of the Jenin and Hebron districts in the West Bank. By January of 2007, activities had commenced in Gaza, though were being scaled back in those original communities in West Bank (and expanded to new West Bank communities).



Together, Hanan’s community, clinic and communications interventions target service quality improvement as well as the adoption of healthy behaviors and the timely use of key health services for hundreds of thousands of vulnerable Palestinian women and children in every district of the West Bank and Gaza.

Community mobilization activities utilize direct interaction with beneficiaries to improve their abilities to recognize, prevent and manage key health risks to expectant and new mothers as well as infants and children under five years of age.⁵ The project engages beneficiaries through a combination of home visits, health education activities and individual counseling to work on five priority themes: antenatal care; postnatal care; breast-feeding; nutrition for children under two; and, health for children under five. By the end of November 2006, Hanan had promoted these themes during 3,370 community mobilization activities attended by 17,251 women from 28 communities of the Jenin and Hebron districts. Furthermore, the project had conducted 1107 formal and 490 on-the-job training for health professionals, 429 supervision visits, and implemented 546 checklists throughout West Bank.

By the end of February 2008, Hanan had conducted 14,328 community mobilization activities attended by 25,002 women from 38 communities throughout Gaza. During this time period in Gaza, the project had conducted 1293 formal and 338 on-the-job training for health professionals, 475 supervision visits, and implemented 1195 checklists. In addition, the clinic scorecard was implemented in 52 clinics throughout West Bank and Gaza at least once and in some clinics up to three times.

As mentioned in earlier sections of this report, Hanan’s community and clinic/hospital activities addressed overlapping topics related to maternal child health and nutrition. The figure below shows this overlap along with the main areas measured in the household survey questionnaire.

Topical Areas of Overlap between Hanan Components and Surveys

⁵ Hanan has 18 key messages covering ante- and post-natal care, breastfeeding, and child health for children under 2 and under 5 years of age.

Survey Indicators (knowledge & practices)	Community Health Education Messages	Clinic Training & Supportive Supervision
ANC	<ul style="list-style-type: none"> • Early ANC • Importance of supplementation 	<ul style="list-style-type: none"> • ANC protocols
PNC	<ul style="list-style-type: none"> • Timely PNC 	<ul style="list-style-type: none"> • PNC protocols
Breastfeeding	<ul style="list-style-type: none"> • Early initiation • Sustained • Exclusive 	**
Nutrition / Supplementation	<ul style="list-style-type: none"> • U2 Growth monitoring • Complementary feeding 	<ul style="list-style-type: none"> • Growth monitoring protocols
Childhood illness - ARI/DD	<ul style="list-style-type: none"> • U5 ARI/DD prevention, home mgmt & referral 	<ul style="list-style-type: none"> • ARI/DD protocols

** Though Hanan did do some counseling work in clinics and hospitals on breastfeeding, this primarily takes place in hospitals where women deliver, and the bulk of Hanan's clinical work took place in private clinics. Thus, we felt any changes seen in breastfeeding would not likely be attributable to Hanan's clinic activities.

Sampling: Communities Included in the Comparative Analysis

- The 2005 survey took place in September 2005 representing 60 communities in which Hanan worked. The total sample size was 779, including 489 blood samples to estimate prevalence of anemia among children in the sample population.
- The 2006 survey took place in November 2006 representing 95 communities in which Hanan worked. The total sample size was 1,380, including 596 blood samples.
- The 2008 survey took place in February 2008 representing 92 communities in which Hanan worked. The total sample size was 2,340, including 1,158 blood samples.

Communities included in the comparative analysis are Hanan intervention communities. That is, communities in which Hanan carried out community mobilization and health education activities, and those in which the project also worked in clinics. Though the Hanan project worked in a total of 113 communities and 78 NGO clinics and hospitals, the communities included are only those for which we have pre-intervention baseline data. Thus 28 communities in West Bank and 38 communities in Gaza are included in the comparative analysis.

To assess whether any change has occurred, this analysis compares the same set of indicators from year to year. The report employs only data from respondents sampled randomly from the intervention communities to ensure that the indicators we are comparing are representative of the target population within the intervention area. Graphs and tables presented here note all differences in indicator results that are statistically significant, i.e. when we are at least 95% confident that the differences measured between the indicators are attributable to actual differences in the sampled populations and not to random chance.

The Methodology

The Hanan surveys were carried out using Lot Quality Assurance Sampling (LQAS). LQAS is a stratified random sampling methodology increasingly used in quantitative surveys of public health programs. It was originally used in industry (Bell Labs in 1920s) to assess industrial batch production; later on it was adapted (mid-1980s) to manage integrated public health programs in developing countries. One reason Hanan chose to use LQAS is that it

allows for rapid quantitative assessments due to small sample sizes needed (compared to 'traditional' cluster sampling methodologies), though it nonetheless provides statistically robust estimates at higher, aggregated levels, allowing the project to measure household-level changes in knowledge and behaviors resulting from, at least in part, project activities. The other reason Hanan chose LQAS is that, in addition to being a sampling methodology, it is also an analysis method, thus allowing project staff to make informed management decisions and for sharing information across project teams in terms of where the successes and challenges are located.

Which Indicators Were Affected?

Improving mothers' knowledge is an important first step towards beneficiaries internalizing the importance of targeted healthy behaviors and eventually adopting those behaviors. Successful implementation of Hanan activities should have resulted in improvements of mothers' knowledge and behaviors that are measurable in a comparison of mothers' responses from year to year within areas where activities were ongoing. Hanan's household survey comparative analysis assessed change in five knowledge improvement, and five behavior change indicators.

The five knowledge indicators include:

- K1: Danger signs during pregnancy
- K2: Appropriate age to introduce complementary foods/fluids
- K3: Six key child/infant nutritional messages
- K4: Signs of childhood illness
- K5: Dietary anemia prevention practices

The five behavior change indicators include:

- B1: Timely ANC
- B2: Timely PNC
- B3: Exclusive breastfeeding of infants U6 months
- B4: Immediate breastfeeding
- B5: Iron supplementation for 6 months during pregnancy

The argument for attribution

Hanan staff interviewed project staff, key stakeholders, third party documents and donors to establish whether other institutions were implementing activities that could contribute to variations in the indicators that this report compares. As a result, we conclude no other health initiative during this period would have influenced the indicators reviewed here. While a number of health interventions almost certainly had significant effects on other health outcomes, especially at the clinical level, no other activities addressed targeted behavior changes through knowledge improvement in Jenin and Hebron between the 2005 and 2006 surveys, and in Gaza between the 2006 and 2008 surveys. Hanan considered activities implemented by the American Near East Refugee Aid, United Nations Population Fund, United Nations Children Fund and United Nations Relief and Works Agency in arriving to this conclusion.⁶ Hanan project staff was also unaware of any systematic effort by the Ministry of Health to address these same topics in these same communities during the time periods measured between the surveys. Given no evidence of significant external actors that may have effected change among the indicators within the surveyed population, we are confident that any significant changes detected in this population are, at least in part, attributable to Hanan interventions.

⁶ Apparently, UNFPA implemented some health education related to post-natal care during home visits, however no related indicators are considered here.

VI. Annex 1: Project Maps
