EVALUATION SUMMARY PART

PD-AAU-150
46721

(BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS)

A. REPORTING A.I.D. UNIT (Mission or AID/W Office)

USAID/Egypt
(ES # 86-4)

B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN?

yes [X] slipped [ ] ad hoc [ ]

C. EVALUATION TIMING

interim [ ] final [X] ex post [ ] other [ ]

D. ACTIVITY OR ACTIVITIES EVALUATED (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report)

Project #	Project/Program Title (or title & date of evaluation report)	First PROG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)
263-0042 Subactivity	Nutrition Education in Health Centers (Grant to Catholic Relief Services)	12/83	12/86	LE 781 $ 260	LE 766 $ 260

E. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

Action(s) Required	Name of officer responsible for Action	Date Action to be Completed
Extend CRS/Egypt project for two more years with no additional funding and with a simplified design. This will allow time for institutionalization of the successful elements of the NEHCP into the MOH health service delivery systems, including the Child Survival program.	P. Rusby USAID, HRDC/FFP	9/86

(Attachments, if necessary)

F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION

mo ___ day ___ year ___

G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Signature Typed Name Date				

DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION

mo 5 day 26 year 86

APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:

ature d Name	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
	P. Rusby, PFP	T. Ware, DPPE/PE		F. Kimball, DIR
	for B. Wilder, AD/PFP	G. Laudato AD/DPPE		

Date :

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H. EVALUATION ABSTRACT (Do not exceed the space provided.)

This project aims to improve child health and survival by teaching mothers basic lessons in health, nutrition and child care through health centers operated by the Egyptian Ministry of Health (MOH). The project was implemented in two phases, and was funded under a grant to Catholic Relief Services (CRS) and the Nutrition Institute of the MOH. The major findings and conclusions were as follows:

- The project fell far short of attaining planned outputs, reaching an estimated 534 of 1400 target centers, or 30% of planned coverage. Project components were only partially implemented at these centers. The single most important component, nutrition education classes for mothers, was regularly held at about 342 centers.

- There is reasonable evidence that the project improved nutrition knowledge among health clinic nurses, which has important implications for reinforcing nutrition messages provided through other channels. There is weak evidence that the project had some limited but positive effect on mothers' behavior, including breastfeeding and weaning practices.

- Modest progress was made towards institutionalization, but the project did not achieve its single most important output in this area, the establishment of nutrition cells at the governorate level.

- The project evaluation plan was overambitious and was only partially achieved. These shortfalls preclude any assessment of its impact on child health and survival. Moreover, evaluation efforts suffered from major methodological weaknesses.

- In summary, the project failed to achieve its coverage and institutionalization objectives. Faulty design, rather than poor implementation or unforeseen events, was the major reason for this failure. In particular, the design underestimated the time and complexity involved in modifying and expanding an earlier pilot effort. It lacked a systematic implementation plan and did not provide adequate resources to achieve its desired objectives.

- Mass media, as used in Control of Diarhheal Diseases, may be a more cost-effective method to reach large numbers of mothers. However, the evaluator believed that over the long term, reinforcement by health professionals (as in this project) of the mass media messages is necessary to sustain these changes.

Major recommendations include the need to sustain efforts to institutionalize nutrition training for health professionals and nutrition activities at the local level, and to build on the Nutrition Institute's emerging capacity to improve and to evaluate nutrition education programs.

I. EVALUATION COSTS

1. Evaluation Team

Name	Affiliation	Contract Number OR TDY Persons Days	Contract Cost OR TDY Cost (US$)	Source of Funds
Barton R. Burkhalter	Community Systems Foundation	18	$12,000	Project (263-0042)

2. Mission Professional Staff Person Days 10 (estimate)

3. Borrower/Grantee Professional Staff Person Days (estimate)

J. EVALUATION SUMMARY PART II

SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Try not to exceed the 3 pages provided)
Address the following items:

- o Name of mission or office
- o Purpose of activity (ies) evaluated
- o Purpose of the Evaluation and Methodology Used
- o Findings and Conclusions
- o Recommendations
- o Lessons learned

USAID/EGYPT: SUMMARY EVALUATION
NUTRITION EDUCATION IN HEALTH CENTERS PROJECT
(263-0042 Subactivity)

Project Purpose: The Nutrition Education in Health Centers Project (NEHCP) was implemented in two phases, beginning in 1979, by Catholic Relief Services (CRS) and the Nutrition Institute of the Ministry of Health (MOH). The general objective of the project was to improve child health and survival, through a program to educate mothers in basic health, nutrition and child care. The program, modelled after successful CRS projects in Morocco and Tunisia, planned to accomplish this by training nurse teachers in government health centers to provide nutrition education to mothers. Phase I was a pilot program covering 165 centers. Phase II aimed to expand the program to 1400 centers. Phase II also aimed to incorporate growth monitoring activities and institutionalize nutrition education in the Egyptian public health care system.

Evaluation Purpose and Methodology: Several internal and external evaluations were undertaken during the course of project implementation. This final evaluation was carried out by an external consultant, who was given the task of consolidating and integrating information collected during previous evaluation efforts. The purpose of the evaluation was twofold: to assist in decisions regarding whether and how to use unspent funds remaining in the project, and to identify lessons for the forthcoming Child Survival Project.

Specifically, the evaluation consultant was tasked with:
(i) evaluating the adequacy of project design and implementation;
(ii) assessing the cost effectiveness of the project approach;
(iii) identifying aspects of the NEHCP that should be replicated and avoided in future projects. Methods employed in the evaluation included a review of project documents; interviews with CRS, USAID, Nutrition Institute and MOH staff; field visits to selected NEHCP centers; and discussions of the project with participants at the First Regional Conference on Diarrheal Diseases held in Cairo in April 1986.

Key Findings:

(a) Coverage: The NEHCP was officially instituted in 534 of the MOH health centers, compared with a target of 1400 centers. (There are a total of 2800 MOH centers in Egypt.) The program reached only 30% of the target number of centers, and very few centers received all planned program components. Most of the key components for a complete health center program were operational in 50-80% of project centers. The single most important component - regular nutrition education classes - was implemented in about 342, or 64% of the official NEHCP centers. Growth monitoring was only partially implemented. Scales and growth charts were only found in some centers (scales in 65%, charts in 50%, both in 39%). Only 47% of centers maintained charts on a regular basis.

Date this summary prepared: August 14, 1986

(b) Effects on Health Center Staff and Mothers: The project did have some modest impacts in this area. There is evidence from previous evaluations that the NEHCP has increased nutrition knowledge among health clinic nurses. This is an important achievement because these health professionals can reinforce nutrition messages provided through other channels, such as the mass media. There is also weak evidence that the project has had limited but positive effects on the knowledge, attitudes and practices (KAP) of mothers. These effects include breast feeding of colostrum to newborn infants; earlier introduction of supplemental weaning foods; more appropriate use of PL 480 Title II foods; and greater use of indigenous weaning foods. The usefulness of these findings is, however, limited by major methodological deficiencies in data collection efforts.

(c) Institutionalization: There has been some limited progress towards institutionalization of nutrition education in the MOH. MOH staff at various levels are now more aware and knowledgeable about nutrition. The project has laid the groundwork for the Nutrition Institute to develop an improved capacity for evaluation of nutrition programs. Some capital equipment has been acquired and distributed. Perhaps most importantly, the project has created a willingness within the MOH to integrate nutrition education into the existing health service delivery system. Nevertheless, major insitutionalization outputs were the not accomplished. The primary strategy for institutionalizing the program at the governorate level, the establishment of nutrition cells, was not realized. While several other specific outputs were achieved, most notably the Project Committee, these did not lead to the anticipated degree of institutionalization.

(d) Evaluation: The project included an ambitious evaluation plan, which was only partially realized. As a result of these shortfalls, there is no information on program impact on child health and survival. With the benefit of hindsight, the evaluation plan was totally unrealistic. The proposed impact evaluation depended on implementation of an accurate and complete growth monitoring system, an enormous undertaking requiring years of effort and substantial resources. The NEHCP did not allow sufficient time and funds for this effort. Moreover, evaluation efforts suffered from a lack of baseline data, inadequate testing for statistical significance, and serious biases in sample selection.

Conclusions: The NEHCP Phase II fell far short of attaining its planned outputs. While the Phase I effort exceeded its planned coverage, Phase II reached only 30% of target health centers. It also failed to institutionalize the activity, since it did not establish governorate level nutrition centers as orginally anticipated. These outcomes are particularly surprising, since the successful experience of a large pilot such as Phase I should have facilitated good planning and implementation. The evaluation concluded that faulty design, rather than poor implementation or unforeseen external events, was the major reason for the project's failure to achieve its objectives.

Design Failures: In the evaluator's opinion, the project design was overambitious, unrealistic and misfocused. It underestimated the time necessary to accomplish outputs requiring major bureacratic changes, such as establishment of incentive payments and nutriton cells, and development of a standardized growth chart. Moreover, the evaluation pointed out that, in moving from a pilot effort to a national program, there are important trade-offs between extensiveness and intensity.

The NEHCP made a major strategic error in opting for quantity, not quality. Although the first phase program had achieved its quantitative targets, there was little evidence of achievement of qualitative objectives.

The design underestimated the complexity of the project. Phase II introduced major modifications to the original project design, including organizational changes necessary to institutionalize the project, incorporation of growth monitoring systems, and an ambitious evaluation program. However, the project lacked a systematic implementation plan for these complex tasks. Nor did it provide the resources required for their realization. For example, introduction of growth monitoring has major clinic supply and personnel training implications, but the design only called for the MOH to purchase scales and charts, and did not allocate funds for this activity.

Implementation: The project was subject to several major implementation delays. Moreover, the Nutrition Institute, a research center outside the line operations of the MOH, was not the appropriate implementing agency for the project. Other implementation problems included discontinuity of CRS personnel, delays in incentive payments, and difficulty in achieving long-term, full-time GOE management. Nevertheless, the evaluation concluded that, in the face of a faulty design and some unanticipated difficulties, CRS and Nutrition Institute managers deserved credit for their implementation efforts.

Cost-Effectiveness: The project used Nurse Teachers as agents to change mothers' behavior. There are more cost-effective single channels such as television for changing mothers' behavior. However, multiple channels are generally more effective than single channels, and in the long-run, mass media messages need reinforcement from health professionals to sustain behavioral change.

Recommendations: The evaluation recommended that the training and motivation of local-level health providers in nutrition, and maintenance of some focal nutrition activity in health centers, should be continued under the upcoming Child Survival project. The Nutrition Institute should establish an evaluation and research section to evaluate nutrition components of the Child Survival project; to undertake a systematic operations research program to improve individual nutrition messages; and to evaluate their impacts and interactive effects with other information channels. Finally, every effort should be made to institutionalize the NEHCP into MOH health service delivery systems. The evaluation report suggested that this was an appropriate use for remaining NEHCP grant funds, to minimize the gap in nutrition activities until the Child Survival program is underway.

Lessons Learned: The design did not allow sufficient time and resources for achievement of complex objectives. It underestimated the complexity of moving from a pilot design to a national effort and making major modifications to the pilot design. Concentration on making a smaller number of centers more effective might have been more feasible and appropriate.

Secondly, project implementation was too dependent upon the dynamism and organizational skills of the project director, but he had many other responsibilities which prevented him from full-time work in the project. A realistic assessment should be made at project start of the time key managers can commit, and back-up strategies should be planned.

ATTACHMENTS (List attachments submitted with this Evaluation Summary; always attach copy of full evaluation report, even if one was submitted earlier)

ATTACHMENTS

Evaluation Report

COMMENTS BY MISSION, AID/W OFFICE AND BORROWER/GRANTEE

MISSION COMMENTS ON FULL REPORT

1. The Mission believes that this evaluation is balanced and well written. Every statement is backed up by a reference or data. The output shortfalls are balanced against the project impact. Consequently, the recommendations are a reflection of a thoughtful balanced focus on accomplishments and failures.

2. The most immediate recommendation to the Mission is to extend the CRS/Egypt contract for two additional years. The common thread running through the Burkhalter recommendations is the achievement of institutionalization of new and improved practices and behavior in the NEHCP centers. The Mission believes this achievement can be attained through extension of the CRS/Egypt project for two additional years with no additional funding and with a modified and simplified activity. This would be undertaken with prior agreement and commitment of the MOH/MCH services.

XD-AAU-150-A
47921

COMMUNITY SYSTEMS FOUNDATION
1130 HILL STREET, ANN ARBOR, MICHIGAN 48104 (313) 761-1357

SUMMARY EVALUATION

EGYPT NUTRITION EDUCATION IN HEALTH CENTER PROJECT

April 14, 1986

Barton R. Burkhalter

Submitted to: USAID/Cairo in
Completion of Work Order No. 17
Under IQC No. PDC-0262-003097-00
PIOT No. 263-0042-3-00636

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A: Executive Summary from Final Report, Field Effectiveness Report (NEHCP), SPAAC, Mar. 1936.
B: Summary of Screening Evaluation Report (NEHCP), NI, Jan. 1986.
C: Summary, Excerpts from Evaluation Report (NEHCP), Academy and NI, Oct. 1985.
D: Summary, Internal Evaluation Report (Two Giza Centers), NI, Jan. 1985.
E: Selected Information, USAID/Cairo PL 480 Title II Program Review (Phase I), June 1981.
F: Summary, Preliminary Evaluation Report (NEHCP Phase I), 4 Governorates
G: Scope of Work from Contract
H: Chronology/Memo from CRS

Table 1: Planned vs Actual Attainment of Project Goals with Budget Allocations 4-5

1.4.2 Effect on Mothers: There is weak evidence that NEHCP improved the nutrition KAP of mothers who attended nutrition lessons, particularly for the following messages: Breastfeed colostrum, Initiate supplemental weaning foods before 6 months, Use Title II foods in a variety of dishes and don't throw it away, Use indigenous weaning foods. For example, one study of mothers from 28 centers found the following differences in the percentage of mothers who self-reported the following practices:

	Mothers with lessons/NEHCP centers	Mothers without lessons/NEHCP centers	Mothers without lessons/control centers
Breastfeed colostrum	97%	79%	90%
Weaning food before 6 months	57%	32%	23%
Fed Title II food to chickens	4%	11%	51%
Used ICSM weaning food	58%	31%	13%

Thus, there is weak evidence that NEHCP has enhanced the effectiveness of Title II foods. This study indicated that NEHCP had little or no effect on other types of knowledge and practices, such as sanitation, feeding sick children, and food/nutrient economics.

1.4.3 Effect on Children: There is no direct evidence one way or the other whether the project has increased child health and nutrition.

1.5 Institutionalization:

The project is not yet institutionalized into the operations of the Ministry of Health, and so is likely to die out at the end of the current funding. The primary achievements in this regard so far are the trained nurses, and the developing capability for program evaluation in the Nutrition Institute. But the project's efforts to create nutrition cells in the Governorates and to create commitment in the operational agencies of MOH have not succeeded.

1.6 Quality of Project Design:

The Phase II project design was overambitious, unrealistic and misfocused. It made the serious error of opting to greatly expand project coverage (from 165 to 1400 centers) rather than spend relatively more effort on program improvement, institutionalization and evaluation. It called for a growth monitoring program without providing enough resources, time or implementation plan. It addressed the difficult problem of institutionalization with a collection of ideas rather than a careful plan, nor did it make provision for such a plan. Its evaluation plan was unrealistic and without adequate budget.

1.7 Quality of Implementation:

The implementation effort was reasonable in the face of a faulty design and the normal barrage of unplanned problems (which included discontinuity of key CRS personnel, withholding of incentive pay-

ments, and the Nutrition Institute's limitations as a staff research arm to the Minister rather than an operational agency). The lack of continuous and full-time managers at CRS and Nutrition Institute was a problem. In general, the participants can be proud of their implementation efforts.

1.8 Recommendations:

1.8.1 The essence of the project should be saved and transferred to the upcoming Child Survival project. That essence includes: (1) training and motivating local health providers, including doctors' in nutrition, and (2) maintaining some sense of focus and continuity in the health centers around nutrition activity, although the specific design currently being done may not be vital.

1.8.2 Improve the individual messages through a systematic program of operational research and testing. The research should include impact on health personnel as well as mothers and children, and should consider interactive effects with other channels (such as television or doctors).

1.8.3 The Nutrition Institute should establish a section devoted to program evaluation and research based on modern social, systems and management sciences. It should perform studies such as that described in Section (1.8.2) above and continue to evaluate nutrition components of the anticipated Child Survival Project.

1.8.4 Every effort should be made to institutionalize the essence of NEHCP into the proper MOH operating agencies, beginning with proper planning. This is a proper focus for resources remaining in the NEHCP grant in order to minimize the potential hiatus which may occur while waiting for the Child Survival Project to begin.

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Table 1
Planned Vs Actual Attainment of Project Goals with Budget Allocations
NEHCP Phase II

	BUDGET ALLOCATN(LE) USAID	MOH	MOE*	PLANNED	(Reference)	ACHIEVED	(Reference)	PERCENT ATTAINED/COMMENT
1. Expand Coverage								
1-1. Additional Health Centers	-			1,235	(5;2 p5,14)	368	(11,pES)369(10,p2)	30%
1-2. Additional Governorates	-			8	(5;2,p13-14)	5	(10,p2)	60%
1-3. Mothers Reached (approx.)	.			450,000	(PL480,Title II reports)	135,000	(estimate)	30%
2. Training/Personnel Development								
2-1. Retrain Nutrition Organizers (NOs)	(37,496			23	(5;2p16)	27	(13a)	117%
2-2. Train New NOs	)			60	(5;2p16-17)	33	(10, p2)	55%
2-3. Refresher Courses for NOs	6,487			3 courses	(2,p3c)	4 courses	(10, p2)	133%
2-4. Train/Retrain Nurse-Teachers (NTs)	117,600			2800	(2;p6,17-18)	807	(13j)	29%
2-5. Fellowships for Doctors	10,673			50	(2; p42-43)	180	(CRS)	360%/Format changed
2-6. Manager Study Tour	5,200				(2; p44)	Not Done		NO
3. Mother Education/Targeting & Delivery								
3-1. NE Classes at Health Centers								
a. Develop/implement Formal Curriculum	-				(5: 2p23)	Not Done	(11, p39)	NO
b. Purchase/Distribute Cassell Kits	262,162($US)			1000	(5; 2p23)	369	(10,Table IV)	37%
c. Mothers attend 12 classes	-				(5; 2p20)	7% in 12 classes 61% in some classes	(11, p39)	7%/61%
3-2. Demonstration Kitchens								
a. Additional kitchens equipped	145,625			1235	(5; 2p24)	388	(10,Table IV)	31%
b. Special Title II food allotments	-				(5; 2p24)	Yes	(9, p54)	YES
c. 5 LE monthly for local food	137,125				(5;2p9,24,B3)	Partial	(9p20-21)	PARTIAL
d. MOH support for local food		64,825			(2; p25,B2)	Partial	(CRS)	PARTIAL
3-3. Commodity Distribution Schedule								
a. Monthly distribution	-				(4,item #1)	Not Done	(11,p18)	NO
b. After weighing, classes	-				(4,item #1)	12%	(11,p17)	12%
3-4. Growth Monitoring								
a. Scale evaluation study	-				(4,item #2)	Done		YES/Never written up
b. Scale needs study	-				(4,item #2)	Done	(10)	YES/Near project end
c. Purchase/distribute scales	-	27,780		100	(2p26;item#2)	[320]	(10,Table IV)	Measured scales available, not purchased.
d. Purchase/distribute charts	-	48,638			(2 p26)	249	(10,Table IV)	50%
e. NT train center staff in chart usage	-				(5; 2p21-22,26)	-No Data-		-No Data-
f. Weigh/record monthly	-				(2 p31-32)	46%	(11, p39)	46% of Cntrs in Prgm.
g. Mothers keep/understand charts	-				(2 p32)	Not Done		NO

Table 1
Planned Vs Actual Attainment of Project Goals with Budget Allocations
NEHCP Phase II

	BUDGET ALLOCATN(LE) USAID	MOH	MOE*	PLANNED	(Reference)	ACHIEVED	(Reference)	PERCENT ATTAINED/COMMENT
4. Institutionalization, Management, Reporting								
4-1. Project Committee (PC) formed	-				(5; 2 p29)	YES	(9, p24)	YES
a. Meet monthly than bi-monthly; minutes						YES	(9, p24)	YES/Attendance = 77%
b. Field visits						No Data	(9, p24)	/Staff Visits
4-2. Nutrition Cells in Governorate MOH	-			"Most"	(2, p27-28)	Not Done	(9,p24,47)	NO
4-3. Seminars for Governorate Officials	9,600			3 courses	(5; 2 p19)	2	(CRS)	67%
4-4. Full Time Project Administrator (PA)				1	(5;2p37,B1)	PARTIAL	(NI)	Part-Time Only
4-5. Regional Supervisors (RS)	-							
a. Consolidate, increase positions				2	(2,p6,37)	YES	(CRS)	YES
b. Maintain staff								
4-6. Hire/maintain field admnstrtrs (FA)	-			5	(2, p37)	YES	(CRS)	YES
4-7. Maintain/"supervise" NOs	-					YES	(CRS)	YES
4-8. Payments to staff:								
a. PC, PA, RS, FA, CRS	11698/54171/135300*					Incentive pymnts not		
b. NO	/127913/157220*					made to NTs or NOs &		PARTIAL
c. NT	/1981905/45000*					made partially to others		
4-9. On-going administrative assessment:								
a. NT - daily attendance, lessons	-							
b. NO - bi-weekly summaries	-				(5; 2p28-29)	PARTIAL	(9	PARTIAL
c. RS - monthly summaries	-							
d. PA - quarterly summaries, financial	-							
4-10. Vehicles:								
a. Procure	85,000			8	(2p10-11,25;	YES	(9	100%
b. Maintain/Operate	32,357/154,813				3, item #3)	YES	(Vehicle Report)	YES
5. Evaluation and Research								
5-1. Interim Evaluation (Train, Supervise, Kitchens)				1	(4, item #8)	YES	(9	YES
5-2. KAP Survey (Semi-annual)				5	(2, p31)	1	(1	20%
5-3. Nutrition Status Survey (Semi-annual)	30,428			5	(2, p31-32)	NO		NO
5-4. Growth Performance (Semi-annual)				5	(2, p32-33)	NO		NO
5-5. Additional Impact Evaluation				1	(2, p33-37)	NO		NO
5-6. Operational Research Study (Al Azhar)	10,428				(2, p19)	NO		NO
5-7. Computer System:								
a. Procure/install	30,923			2	(5; 2p35-37)	2	(CRS)	2/Delayed to NI.
b. Usage	-				(5; 2p36)	WP, dBase	(CRS)	PARTIAL

2.1 Background, Purposes, Methodology of This Evaluation:

2.1.1 The original premise of the Egyptian Nutrition Education in Health Centers Project (NEHCP) was:

> "The potential represented by the combination of health/nutrition education and growth monitoring with food distributions is much more powerful than any of them in isolation." (12, p97).

That "potential" was apparent in several important problems identified as primary contributing factors to the significant malnutrition found in Egyptian children:

(1) Egyptian mothers withhold food from sick children.
(2) Late introduction of supplemental weaning foods.
(3) Unhygenic practices.
(4) Concern that the nearly universal practice of breastfeeding might decrease with urbanization, etc., and concern with the (infrequent) practice of delaying the initiation of breastfeeding about two days by some mothers.

By 1977, a U.S. PL 480 Title II program was distributing food to needy children through the 2400 Health Centers operated by the Egyptian Ministry of Health (MOH). NEHCP was conceived as a way to enhance the effectiveness of the Title II program, and to find indigenous substitutes to replace Title II commodities in anticipation of the eventual phase out of the PL 480 Title II program.

2.1.2 Phase I: NEHCP Phase I was undertaken from August 1979 through December 1981 by CRS/Egypt with a USAID grant of 218,075 LE in cooperation with the Nutrition Institute of the Egyptian Ministry of Health as the implementing agency. The project was patterned after successful CRS projects in Morroco and Tunisia. In brief, the project trained 28 full-time Nutrition Organizers (primarily hospital dieticians working for the Ministry of Health), who in turn trained one nurse (called "Nurse Teacher") in each of 165 of the 2800 government operated health centers, and then provided continuing technical assistance to the Nurse Teachers. The Nurse Teachers provided face-to-face nutrition education to approximately 20,000 mothers, by giving lectures and demonstrations and using demonstration kitchens equipped by the project. There was no growth monitoring component in Phase I. Phase I was generally thought to be successful, as it exceeded its coverage goals (150 centers planned; 165 reached), although no reliable evaluation of its impact on mothers KAP or child health/nutrition status was completed.

2.1.3 Phase II: Phase II was conceived to expand (from 165 to 1400 centers) and improve (by correcting certain deficiencies) the Phase I project. Its basic objective was to cause Egyptian mothers to alter their behavior in ways which promote the health and survival of their children. As in Phase I, the basic strategy to accomplish

(1) Train Ministry of Health (MOH) staff at the local level in nutrition.
(2) Provide MOH health centers with training materials, demonstration kitchens and supplies.
(3) Teach Egyptian mothers basic lessons in health, nutrition and child care, using the local staff as teachers and coordinated with Title II food distribution at health centers, thereby enhancing the effectiveness of Title II food distribution.
(4) Instruct mothers in use of indigenous weaning foods.
(5) Provide on-going technical support to the local staff.
(6) Institutionalize nutrition education in the Ministry of Health.

Phase II also recognized the importance of growth monitoring, and made provision to introduce it into the project through Ministry of Health funds. Phase II proposed some specific changes to correct deficiencies it had observed in Phase I. These included:

(1) Establish a Project Committee of high level MOH officials to oversee the project, in order to create stronger ties to the MOH.
(2) Create "nutrition cells" in the Health Departments of the Governorates, in order to institutionalize at that level.
(3) Appoint a full-time project administrator at the Nutrition Institute, in order to strengthen project administration.
(4) Purchase teaching aides ("Cassell") for the Nurse Teachers.
(5) Distribute and use growth charts and working scales, and record weights.
(6) An extensive reporting and evaluation program.

Phase II was funded (781,100 LE + $263,000 (U.S.)) by USAID in June 1983 following an 18 month hiatus for a three year period. As in Phase I, NEHCP Phase II was implemented by the Nutrition Institute of the Ministry of Health. Unlike Phase I, Phase II has not reached its original goals, and serious questions have been raised about the project.

2.1.4 Evaluations: There were two reviews of Phase I completed (7, 12), and four of Phase II (8, 9, 10, 11), summaries of which are included as Appendices A-F to this report.

This evaluation has been undertaken by Community Systems Foundation, as Work Order 17 under USAID IQC Contract PDC-02620I-17-3097-00, for the purpose of consolidating and integrating the information from the four evaluations of Phase II, and other relevant information.

2.2 Purpose/Scope of Work:

It is anticipated that the outputs of the present evaluation, as specified in the Scope of Work, will be used for two purposes: (1) to assist in decisions about whether and how to use unspent funds remaining in the project, and (2) to identify lessons which can be used in the forthcoming Child Survival Project for Egypt.

In order to answer these two questions, the evaluation was to look at two questions. First, does the NEHCP, and CRS/Egypt in particu-

lar, reflect a high degree of competency in project design and in project implementation, or could the investment of funds have achieved a substantially greater effect if employed differently? Second, what was done or developed in NEHCP that should be copied in future projects, and what should be avoided? The Scope of Work, which is attached as Appendix G, outlines a specific set of issues to analyze in order to answer the above two questions. The organization of this report follows the organization of the Scope of Work.

2.3 Methodology:

The Community Systems Foundation evaluator, Dr. Barton R. Burkhalter, was in Egypt from March 28 to April 14, 1986. Prior to his visit, he reviewed documents made available by USAID, and discussed the project with Dr. Carol C. Adelman, CSF Associate on this project, and Ms. Helen Bratcher of CRS. Work proceeded as outlined in the Scope of Work. In addition to reviewing documents, interviews were held with staff from USAID/Cairo, CRS, the Nutrition Institute and the Ministry of Health. One field visit was made to two health centers in the Cairo suburb of Helwan (Helwan I Mamoud, Helwan Medical Center). The evaluator was also able to attend portions of the First Regional Conference on Diarrheal Diseases held in Cairo on April 3-5 and discuss the project with many people there.

Because of the nature of this summary evaluation, one of assimilation and consolidation of the work of others, the author is indebted more than is usual to the many individuals who so greatly assisted him in the effort. They spoke frankly and insightfully of the strengths and weaknesses of the project and of their own efforts in the project. We especially want to thank, at USAID: Mr. Paul Rusby, Dr. William Oldham, Ms. Connie Collins, Mrs. Laila Boutros, and Ms. Hala Kamel; at CRS: Mr. Andy Koval, Ms. Ann Fitzcharles, Ms. Ann Crowley, and Ms. Moshira Kamel; at the Nutrition Institute: Dr. Osman Galal, Dr. Farouk Shaheen, Dr. Wafaa Moussa and Dr. Kamel Gad Michael; as well as Dr. Mostafa Hammamy from the Ministry of Health, Dr. Mamdouh Gabr, and Dr. Sarah Loza.

3. Adequacy of NEHCP Phase II Design:

3.1 Objectives:

As noted in paragraph 2.1.3 above, the general objective of the project was to improve child health and survival, by teaching mothers basic lessons in health, nutrition and child care through government run health centers. One important sub-objective of the project was to implement indigenous alternatives to Title II foods; another was to institutionalize the process of nutrition education in the Egyptian system.

It is important to place these objectives in the context of the Egyptian health care system. NEHCP was limited to that subset of the 2800 MOH run health centers that receive PL 480 Title II food through CRS. Further, it has been estimated (12, p 96) that Egyptians only receive 20-25% of their health care from the government operated facilities.

3.2 Planned vs Accomplished Outputs:

It is readily apparent from Table 1 that NEHCP Phase II fell far short of attaining its planned outputs. It failed to attain the coverage it had planned (e.g., it only reached 30% of the additional health centers it had planned to reach), and also failed to institutionalize the project (e.g., no Governorate level nutrition cells were created).

The question is, why? Was the project poorly designed, poorly implemented, or burdened by unforseeable difficulties?

It is interesting to note the difference between Phase I and Phase II accomplishments. Phase I was far more successful in reaching its planned outputs, especially in coverage. For example, the difference in new health centers reached is startling:

Additional Centers in Project	Phase I	Phase II
Planned	150	1,235
Accomplished	165	369
% Achieved	110%	30%

Phase I was a large pilot--18 months, 165 centers in 18 Governorates. A shortfall of the magnitude experienced in NEHCP Phase II is certainly unexpected, because the successful experience of a large pilot such as Phase I should enable both good planning and implementation.

3.3 Design Failures:

3.3.1 Underestimation of Time: The evidence suggests that there was serious underestimation of the time it would take to accomplish certain types of outputs, specifically efforts that required bureaucratic decisions and actions. For example, the following

outputs all required significant bureaucratic effort and all were not attained: incentive payments, nutrition cells, agreeing on growth charts. There are of course exceptions, for example, the enlisting of new centers into the project required bureaucratic agreement, but was not such a problem. In fact, the enlistment of new centers was on schedule at the end of the first year, at which time expansion to additional centers was put on hold until some of the unimplemented aspects of the project could be expedited (14; 15; section 3.3.2).

Bureaucratic delays during the project were foreshadowed by bureaucratic delays prior to the start of both Phase I and Phase II--a warning that may not have been heeded as well as it should have been. The following description of the delays before Phase I leaves little doubt that bureaucratic delays are the rule rather than the exception:

> "The current project (Phase I) was several years in the planning stage, beset by a series of delays. An initial transfer agreement between USAID and CRS was signed in September, 1977. CRS was then to sign an implementation agreement with MOH, with staff selection and other project start-up activities expected to require 6 months. However, the Minister of Health was replaced shortly before CRS signed the agreement with AID and CRS had to renegotiate its intended implementation plan with a new Minister. A resolution of issues (principally one in which MOH rather than CRS assumed direct responsibility for the 5 regional nutritionist positions under the project) finally resulted in a signed agreement in May, 1978. However, a project director and co-director were not named by MOH until November of that year. In Spring of 1979, final selection of the 5 regional nutritionists was almost complete, but there had still been no expenditures under the project. Despite CRS' and the Mission's last minute effort to get an extension, the Grant Agreement expired and a new agreement had to be readied." (12, p 67-68)

3.3.2 Underestimation of Complexity: The key issue here is the tradeoff between extensiveness and intensity, between quantity and quality. The question of when and how to scale-up from a pilot effort to a national program is not an easy one to answer. To move too soon before enough is known to deliver the goods in the more difficult national environment is to doom the project to failure; but waiting too long may lose the political base.

Phase II opted for expanding the program quickly. The arguments for this seem reasonable: the Phase I pilot was fairly extensive itself and successful, the program had worked elsewhere, and there was pressure to create indigenous alternatives to PL 480 Title II foods. However, in retrospect, this was a major design error.

We believe this was a design error for two reasons. First, the programs in the individual health centers were probably not working as well as was thought, and second, at least three other major

components were introduced into Phase II that needed far more attention and resources than they were given if they were to be successful, namely, (1) institutionalization, (2) growth monitoring, and (3) evaluation.

Phase I worked with better health centers in Governorates that were the most interested (14, p 4), a situation usually found in pilot phases. Even so, there were many centers that did not function up to expectation. Part of the reason was that in order to reach 165 health centers, Phase I also concentrated on coverage rather than impact. As the Rhoda/Callier Review of Phase I said:

> "As the first effort to introduce any kind of nutrition education into the day-to-day work of health units of Egypt, the newness of the experience was exacerbated by the reality that clinic work is low pay and low prestige with clinic workers resistant to what is perceived as add-on work without added remuneration." (12, p 100)

Phase II made some provisions to address these types of problems. For example, it provided Nurse Teachers with the Cassell Visual Learning Kits. But neither Phase I nor Phase II seriously took on the business of turning up the performance of the program, particuarly in the less enthusiastic or less capable centers. To wit, the Phase I reviewer notes that although there was achievement of outputs in Phase I, "there is little evidence that the goal (improved nutrition status) or purpose (establishing framework to institutionalize nutrition education as part of MOH services) has been achieved." (12)

In short, there is no history in Phase I or Phase II to attend to the important and difficult task of systematically searching for how to make the project work well at the level of the health center. The elaborate plan for reporting and evaluation in the Phase II proposal addresses the issue in part, as will be discussed further in the section on evaluation below.

The second reason that we believe the plan should have limited its coverage is that several other difficult components were introduced. Institutionalization is a very difficult job that requires both time and resources. The actions proposed and attempted in Phase II to accomplish this seem to be more a collection of ideas (i.e., Project Committee, nutrition cells, fellowships for doctors, seminars for regional officials) than a careful plan. For example, we suspect that each Governorate may require careful and unique planning to successfully institutionalize nutrition education. (We recognize that CRS and those helping it probably did not have the resources required to undertake a planning effort of such a magnitude, and that such planning probably needed to be part of Phase II itself.)

Growth monitoring, at least to the point of obtaining fairly comprehensive and reliable records, was clearly necessary for the impact evaluation that was proposed and needed. It is also desirable to go further, making the process of weighing and recording an important part of the training of the mother. Better yet, the mother should

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keep the chart. But this is not a simple intervention, at any of its levels. To wit,

> "There are critical supply and personnel issues which must be addressed if weight-taking and recording is to be instituted ... the use of standard weight chart in Egypt remains unresolved ... scales available are insufficient in number and often are unsuitable ... clinic personnel need to be trained to take accurate weight measurements and in the use of growth charts. Training will need to address motivation as well as expertise ... Considerable thought needs to be given to how to do it in a way which is least time-consuming, burdensome, and disruptive to clinic operation." (12, p 93)

A growth monitoring program is no easy task. Substantial resources, commitment and time are required. Apparently none of the USAID funds were devoted to the effort, only Ministry of Health funds, and at a rather low level (See Table 1). Clearly then, NEHCP was not really attempting to implement a national growth monitoring program, even though one gets the sense from the proposal that a growth monitoring program is to be implemented.

Evaluation is another difficult component introduced into Phase II, which required more attention than it received, and thus also argues for less extensiveness of coverage. This is discussed further in the section on evaluation below.

Finally, note that the decision for more coverage rather than more intensity was an error for the reasons noted above, and not because Phase II couldn't achieve the coverage targets. In fact, we suspect the project would have (approximately) achieved its coverage goals had it continued to try to do so. But a conscious decision was made by CRS in February, 1985 to delay expansion into new centers until certain administrative problems could be corrected. These problems included: (1) release of incentive payments, (2) transfer of project supervision to line agencies of the MOH, (3) full-time project administrator, (4) formation of Governorate Nutrition Cells, and (5) revision of training program. (14; 15)

3.3.3 <u>The Question of Validity</u>: In this context validity refers to whether or not the targeted outputs would have achieved the ultimate objectives of the project had the outputs been achieved. For example, would an ideal program in a health center (i.e., a trained Nurse Teacher holding classes, a demonstration kitchen, a Cassell Visual Learning Kit, etc.) result in a change in the knowledge, attitudes and practices (KAP) of mothers with respect to certain nutrition issues, and would this change in the mother's KAP increase the health and survival of their young children? Further, did each component (e.g., the Cassell Learning Kit, the demonstration kitchen) contribute significantly to this change?

This is an enormously difficult question. It is hard enough to answer whether the project as a whole is valid, let alone whether and to what extent each component of the project is valid. In truth

we do not know whether the whole project is valid because all of the evaluations are flawed by lack of baseline data, as we discuss in more depth in the evaluation section below. Those evaluations generally find that the KAP of mothers who have participated in the program is better than mothers who have not, a finding which means we can not reject the program as invalid.

There is no evidence of which we are aware that deals with the issue of the validity of individual components of the program.

(a) Other Cost-Effective Approaches: This project uses Nurse-Teachers as agents to change mothers. Other approaches exist that are probably more cost effective, especially the use of television. The Egyptian Diarrheal Control Project has reported dramatic success with this approach. This success is credited not only to using television but to developing it over a period of years with careful testing to find out what worked.

A study just being completed by the Nutrition Institute (with funding from the USAID PRICOR Project) has found that a letter sent from the Ministry of Health to each health center containing simple messages for the mothers was successful. The messages reached the mothers. Furthermore, the percent of mothers who were able to repeat the messages after three months was greater in centers participating in NEHCP than in centers that weren't. Nationally televised messages were also repeated more frequently in centers receiving the MOH letter and participating in the NEHCP program. (Note: These results are reported based on discussions with the principal investigators and without the benefit of a final report.)

In our opinion, then, there are more cost-effective single channels for changing mother behavior than NEHCP. However, multiple channels are generally more effective than single channels. In the long run it will be necessary to insure that mass media messages are reinforced by health professionals to sustain these changes. We believe, along with most of the previous evaluators, that NEHCP is a valid way to do this.

3.3.4 Government Capacities and Constraints: Were the development capacities of the Egyptian government, given the constraints of government, adequate to implement the project as planned?

We have already noted above (Section 3.3.1) that bureaucratic delays were not adequately accounted for.

It is also clear that while the technical expertise resided in the Nutrition Institute, it was the wrong implementing agency. It is a research institute outside the normal operations of the Ministry of Health, and as such, was at a great disadvantage with regard to health center activities.

We believe the implementation capacity existed within the Ministry at the national level. We are less confident that such capacity exists at the Governorate level. Although the previous NEHCP eval-

uations have not dealt with this issue, regional health departments are often well below the national level in absorptive capacity.

Since the start of NEHCP, the Egyptian health system has undertaken many new major projects, with funds from USAID and other international agencies. In some ways these new projects will have enhanced the capacity of the government to accomplish NEHCP and in other ways they compete with NEHCP for scarce resources. This can be seen in the Nutrition Institute, where the time of top people is stretched thinner with additional projects but where the results and resources from these projects have sometimes enhanced NEHCP (e.g., the study reported in 3.3.3(a) above). The net effect is difficult to ascertain.

3.3.5 The Evaluation Plan: (a) What the proposal said: An extensive evaluation plan was set out in the proposal which included both process and impact evaluation (See Table 1). Impact evaluation was to be done every six months, using data from growth charts. A growth monitoring system was to be established and monitored to insure complete and reliable data. The impact evaluation was to include KAP surveys of mothers, nutritional status, and growth performance studies, all semi-annually. Special studies were to be done to establish baseline infant mortality rate, program entry weight as a control, and seasonality effect, all on attending mothers and non-attending mothers through home visits, and then an analysis of all this with respect to the individual contributions of Title II food and nutrition education to impact. In addition, special analyses were to be done on the need for weighing scales and their availability and suitability in the market, and an on-going operational research of training methods. At 14 months, the plan called for an interim process evaluation. In brief, a major research effort was proposed to be done, all for 35,000 LE plus a computer.

(b) What was accomplished: As can be seen from Table 1, there was a large shortfall in accomplishing the planned evaluation regimen. The growth monitoring system was not implemented. A KAP study of mothers was done twice (8, 11), not semi-annually. The nutritional status and growth performance studies were never done (they required growth charts). The operational analysis of the training was not done.

Nevertheless, a fair effort was put into evaluation, even though small relative to what was planned. The two KAP studies were done (8, 11). The interim evaluation was completed (9). A special screening study of coverage (10) was completed that included the scale needs study plus other useful information on program coverage not called for in the evaluation plan. The scale availability/suitability study was done but not written.

(c) Reasons for the shortfall: The evaluation plan was totally unrealistic. In the first place, much of the impact evaluation depended on data from growth charts, and that required implementing an accurate and complete growth monitoring system. This is an enormous undertaking requiring years of effort and substantial

resources and cooperation. The NEHCP Phase II allowed essentially no time and no money (except for scale and chart purchase) to accomplish this.

The budget allowed minimal resources for evaluation. For example, there was no money for technical assistance, yet program evaluation is a highly technical and specialized discipline. It may have been possible to carry out semi-annual impact studies with the budgeted resources because the scope (e.g., sample size) was not specified. However, many poorly-done studies would not have been useful.

(d) The major methodological fault in the evaluations: All of the impact evaluations suffer from the lack of baseline data. Three impact evaluations obtained data on mothers' KAP (7, 8, 11). The other three studies included two reviews primarily aimed at process (9, 12) and a screening study of coverage (10). The three impact evaluations all used the same basic research design, which looked at three groups of mothers: (1) mothers in attendance at an HEHCP center who attended some of the nutrition education classes, (2) mothers in attendance at that same NEHCP center who had never attended any of the nutrition education classes there, and (3) mothers in attendance at some other health center that was not an NEHCP center. Group (1) was the program group, whereas groups (2) and (3) served as partial controls. The essence of the design is that differences between groups (1) and (2) or groups (1) and (3) might be due to the program.

The trouble with this design is that the mothers who attend the classes (group 1) are self-selecting, and thus may be better mothers in the first place, which means that differences between groups (1) and (2) can not be ascribed to the program. Group (3) might serve as a control if the participating and non-participating centers really were similar with respect to mothers KAP prior to the program. However, participating centers are often chosen to participate because they are more receptive to the program, so there is significant doubt about similarity. Also, the KAP score for group (3) should be closer to group (2) than to group (1), and significantly below the mix of (1) and (2) for it to be an effective control. It is not sufficient for it to be lower than group (1). In many cases, the evaluations discussed differences between groups (1) and (3) as if they were due to the program without considering the above logic.

Baseline data on KAPs of mothers in these three groups would have enabled the analysis to determine the relative changes in the KAPs, and thereby provided a much stronger argument that the changes were the result of the program. Some effort was made by the last evaluation (11) to overcome this problem by comparing independent characteristics (such as age and education) of the mothers in the three groups, but this is a much weaker control than comparable baseline data.

The Nutrition Institute study on messages reported in Section 3.3.3(a) used another approach. They attempted to determine the

source of the mother's knowledge, and in this way argued it could be ascribed to the intervention.

There were other methodological problems with the impact evaluations as well, including: (1) lack of statistical testing of significance, (2) bias in sample due to selection from mothers at the center, and (3) bias in the sample of participating clinics by ignoring the inactive "participating" clinics.

It is important to note that there was a clear awareness by the authors of the Phase II evaluations that baseline data was lacking and the methodological problem this created for them. Other methodological issues were also discussed directly. For example, the SPAAC Report (11) clearly spells out that their study is not based on a random sample of NEHCP Centers, but rather includes centers specifically chosen because they possessed certain characteristics, such as "good" or "bad", urban or rural, etc.

(e) Ways to strengthen such evaluations: Many of the ways to improve the evaluation are suggested in the prior discussion. The most important are:

- The ambitiousness of the plan should fit the funds to do it.
- Make evaluation an on-going effort that has the goal of improving the project month-by-month, rather than a once-a-year or end-of-project judgmental exercise. Operational analysis and tests (such as was proposed for Al Azhar) are an important component of such a management oriented approach.
- Improve impact evaluation designs, especially by generating baseline data and avoiding biased samples.
- Continue process evaluations, such as the Academy Mid-Evaluation (9), especially for difficult-to-assess objectives such as institutionalization.
- Obtain proper technical assistance; program evaluation is a highly technical field with many recent advances.

4. Project Implementation:

4.1 Nutrition Organizers:

4.1.1 Selection and Turnover: The required number of nutrition organizers were assigned to the project and turnover was not a major problem. Informal discussion suggests competent selections were made, although this is not dealt with in any of the formal evaluations.

4.1.2 Training of NOs: During Phase I, objections were raised by the NOs themselves that the training was too abstract, without enough practical content. This criticism is supported by most studies and experience, which show that competency based training is much more effective in such contexts. The curriculum was rearranged in Phase II to accomodate this desire, and apparently is working well.

A basic issue is what are the messages that should be given to Nurse Teachers and to mothers? This question needs to be studied systematically, thoroughly and continually for it is the heart of the entire project. How many messages should be sent? How should they be worded? Should they vary by region of the country? How can they be coordinated with messages from other programs? As far as we know, this analysis has not been done to anywhere near the degree that it should be. It is part of what was sacrificed when the project design decided for coverage rather than intensity.

4.1.3 NOs in the Field: Have the NOs functioned effectively in the field? The evidence suggests they have for the most part. Trainings of the Nurse Teachers were held with some success. Centers were visited on a regular basis and many maintained an active presence. There are exceptions: The Academy Mid-Evaluation notes that reporting is a weakness and that some nurse teachers report that their own records have not been checked (9, p 38).

4.2 Nurse Teachers:

4.2.1 Selection and Turnover: The required contingent of nurses were assigned and accepted responsibility. However, turnover apparently is a problem, and reported to be 30% in Upper Egypt (9, p 39).

4.2.2 Training NTs: Classes were held as planned. Were they effective? The evidence suggests they were (although methodological problems plague the evaluation of nurse teacher KAPs as well as those of mothers). The Academy Mid-Evaluation reports that:

> "There is no doubt that nurses acquire valuable knowledge on nutrition and hygiene through courses offered by the NEHCP." (9, p 38).

This statement is arrived at based on interviews in 24 health centers.

In a study of 28 Nurse Teachers, the SPAAC REport (11) found that the trained Nurse Teachers had an average score of 72% on a comprehensive nutrition test. This score was higher than nurses who did not attend NEHCP trainings or who did not work in NEHCP centers, as shown below:

	Average Score
Trained Nurses in NEHCP centers	72%
Untrained Nurses in NEHCP centers	65%
Untrained Nurses in non-NEHCP centers	56%

This difference could be due to the training, or to a selection process that sent more knowledgeable nurses to the training courses. However, the fact that untrained nurses in NEHCP centers scored higher than untrained nurses in non-NEHCP centers is less likely to be due to selection bias, and for that reason is very interesting. It suggests that nutrition education of nurses is occuring in NEHCP centers that is not occuring elsewhere. This may be the most important and reliable finding in all of the impact studies.

The SPAAC Report (11) notes that the low average test scores of trained nurses (72%) may be due to the total inadequacy of the teaching manual "Messages for Mothers" which is being used as the basic text. The evaluation says: "The manual is confusing, unclear, unspecific and sometime inaccurate. It is not adequately conducive to train trainers of mothers or mothers themselves." (11, p 15).

The differences in test scores between nurse teachers in urban and rural centers, and between Phase I and Phase II centers are insignificant, and differences between governorates in different regions of the country are irregular depending on the question.

4.2.3 NTs in the Field: The Academy Mid-Evaluation found that:

> "Cases of excellence are more than 70% (of the 24 centers studied) where nurse teachers carry their responsibility effectively and efficiently." (9, p 38).

The Screening Study (10) found that only 79% of the NEHCP centers had a NEHCP trained nurse teacher currently on the staff, but 93% had a trained or untrained nurse assigned as a nurse teacher. However, only 64% were holding classes regularly (11, Table IV). There are a significant minority of the centers, therefore, where the nurse teachers aren't assigned or aren't carrying out the program.

4.3 Child Surveillance:

4.3.1 Growth Monitoring: Scales and charts were to be found in many of the centers by the time of the Screening Study (10). Specifically, 50% of the centers had growth charts and 63% had functioning scales. Only 39% had both.

From a sample of 16 centers, the SPAAC Report found that 50% had growth charts; and from a random sample of 160 of those charts that 47% were maintained, of which 45% had unbroken monthly weighings and another 15% had regular but less than monthly weighings. (11, p. 15-16).

Given the inadequate plan set forth for the growth monitoring activity, as described in Section 3.3.2 above, we consider these results to be encouraging. However, it is clear than an adequate growth monitoring program which can be used for evaluation has not been accomplished.

4.3.2 Home Visits: Anecdotal information suggests that home visits are made only rarely, by committed nurses. (9, p 38). The only systematic data on home visits was gathered and reported in the SPAAC Report, which found home-visit registers in only 9 of 16 centers (11, p 16). No data on actual home visits was reported. We doubt that NEHCP has had much impact on home visits.

The question needs to be asked whether home visits are appropriate in the context of Egypt at the present time. However, the experience reported on NEHCP does not contribute to the answer to this question.

4.4 Breastfeeding:

A large percentage of Egyptian mothers breastfeed their children; well over 90%. Therefore it is difficult to find significant improvements as a result of NEHCP or any other intervention. However, there are some important issues, including early breastfeeding, maintenance of breastfeeding during diarrhea, and preventing an erosion of the breastfeeding rate in the face of urbanization.

There is evidence that NEHCP may have caused more mothers to breastfeed on the first day rather than waiting several days. The Giza Two Health Centers Study (8) found that all 50 mothers sampled in the control center said that they delayed the initiation of breastfeeding beyond day 1 compared to only 30% of the mothers in the NEHCP center. In other words, 70% of the mothers in the program center said they breastfed colostrum compared to none in the control.

Results in the SPAAC Report of a study of 28 centers are less clear cut, but still encouraging, as shown below:

	% Mothers who report breastfeeding Colostrum
Mothers with lessons/NEHCP Centers	97%
Mothers without lessons/NEHCP Centers	81%
Mothers without lessons/non-NEHCP Centers	90%

This result is weak for the methodological problems noted above in Section 3.3.5-d). The Giza Two Health Centers Study suffers from concern about the equality of the two centers.

The study that was previously described in Section 3.3.3a found that a message to continue breastfeeding during diarrhea sent through official MOH channels was finally received and remembered by more mothers in NEHCP centers than in regular centers (73.7% to 55.7%). This indicates that NEHCP centers may be more receptive sites for health messages through other channels.

4.5 Weaning Food Skills:

4.5.1 Program Effect on Mother KAP: The SPAAC Report (11, p 23) presents moderately strong evidence that NEHCP had a positive effect on mother's KAP, as shown below:

	% Mothers who report they introduce Weaning Foods before 6 months
Mothers with lessons/NEHCP Centers	57%
Mothers without lessons/NEHCP Centers	32%
Mothers without lessons/non-NEHCP Centers	23%

This is convincing data because the percent of mothers from regular centers is much lower than from NEHCP centers, and because differences are large. Nevertheless, bias due to differential selection is still a threat, but less so than in much of the other data. Furthermore, more attending mothers believed that weaning foods supplied needed nutrients not available in milk than non-attending mothers or non-NEHCP mothers (28%, 15%, 22% respectively). (11, p 23). Finally, the attending mothers were more aware of the proper (more nutritious) kinds of weaning food that should be given, such as fruit, beleela, porridge, egg yolk. Low nutritional foods were mentioned much more frequently by non-attenders (11, p 24).

4.5.2 Utilization of Title II Foods: The SPAAC Report concludes that attending mothers use Title II foods in much more beneficial ways than non-attending mothers. By contrast, non-attending mothers report using Title II food as chicken feed more frequently, as shown below (11, p 28):

	% Mothers who report they Fed Chicken with Title II Food
Mothers with lessons/NEHCP Centers	4%
Mothers without lessons/NEHCP Centers	11%
Mothers without lessons/non-NEHCP Centers	51%

4.5.3 Enhancing Use of Indigenous Weaning Foods: The SPAAC Report also shows evidence that NEHCP mothers are more likely to use indigenous weaning foods than other mothers (11, p 27, 28).

	% Mothers who report giving Beleela, Porridge, Supramine at 6-8 months
Mothers with lessons/NEHCP Center	46%
Mothers without lessons/NEHCP Center	29%
Mothers without lessons/non-NEHCP Center	26%

They also report better use of ICSM by attending mothers (11, Table 11).

4.6 Sanitation, Waste Disposal, Hygiene and Water:

The SPAC Report (11) collected considerable data on the KAP of mothers in these areas, but the results are irregular and unclear. In summary, the authors of the study say: "Not all mothers who attended nutrition education lessons reported exposure to ... sanitation, waste disposal, child hygiene and safe drinking water. However, on average, homes of (attending) mothers tend to be cleaner and their infants more healthy looking than non-attending mothers. ∴ 22% of attending mothers would boil drinking water if it is not clean (as compared to 16% and 12% of other mothers). But still more than half (54%) of attending mothers disposed of solid waste in unsanitary ways (as compared to 40% and 62% of other mothers)." (11, p ES).

The problem in this area may well be that too many messages are being sent. Furthermore, many of the messages may be irrelevant to any particular mother, either because it isn't a problem in her case or because she can't do anything about it if it is a problem. We suspect this is an area where much more careful testing need to be done to be sure the messages are relevant and effective before sending them.

4.7 Food Values and Economics:

In the SPAAC Report (11), the sample of mothers was asked three questions: (1) if all types of food had the same nutritive value, (2) what constitutes a cheap nutritive meal, and (3) how to preserve vegetables. The responses were inconsistent with respect to the program and not encouraging.

Most mothers knew that not all food types have the same nutrient value, but a much larger percent of mothers who did not attend the classes knew this. The percent knowing for attending mothers, non-attending mothers, and non-NEHCP center mothers was 58%, 85% and 61% respectively. On the other hand, slightly more attending mothers were able to suggest cheap meals that contain all four food groups (cereals, legumes, fruits or vegetables, and animal source)--14%, 6%, 11% respectively for attending mothers, non-attending mothers, and non-NEHCP center mothers. No difference between the three groups was noted in their responses to vegetable preservation (11, p 33, 35).

Mothers were also asked questions about feeding sick infants, exposing infants to sunshine, and extra food for pregnant women, but essentially no differences were observed between the groups (11, p 36).

4.8 What Mothers Want:

Possibly more attention should be given to this question. The SPAAC Report (11, p 44) says that "Mothers are in need of these lessons

and want them. ... mothers who attend lessons appreciate them, and those who do not attend lessons, wish they did." In fact, the principal author of that report thinks this may be its most significant finding.

4.9 Incentive Payments:

The project plan called for incentive payments to staff at all levels to compensate them for the additional responsibilities. For the most part, these payments were never made; some were paid out of funds designated for other uses, but the Ministry of Economy never released the designated funds, in spite of the agreement to do so (14).

This failing has been widely blamed for many of the implementation failures of the project. For example, CRS used it as a primary reason to stop expanding to additional health centers. The Academy Mid-Evaluation (9) also believes this was the major problem in the implementation of the project. CRS states the case why this is such an important problem in its third quarterly progress report (13c):

> "The problem of clearance for project vehicles is minor, however, compared to that posed by the Ministry of Investment and International Cooperation (MIIC). To date, no money has been forthcoming from the MIIC Special Account to supplement the salaries of GOE employees working on the project. Some project staff have been at work on the project for a full year without any recompense for their labors whatsoever. Morale is eroding. Regional Supervisors on their trips to the field are beginning to lose the good will of the unpaid Nutrition Organizers over this issue; their explanations and calls for patience carry less and less weight. The Regional Supervisors themselves are less and less inclined to extend themselves for the project--they too have not been paid for their services. Considerable effort was expended during the quarter to obtain release of the authorized funds, but without avail. Unless this issue is resolved quickly, the vitality of the project will suffer."

NEHCP Phase I included incentive payments, and it is our understanding that most other foreign funded projects do also. Reasons for lack of payment in Phase II remain obscured. All involved believe this has been a major problem, although it is not clear the extent to which it affected project performance. In any case, it is certainly worth finding out the real reasons why the incentives were not paid, so that this can be accounted for in future planning. Incentive payments may or may not be necessary, but it is ill advised not to pay them by default when they are expected.

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5. Success and Failures:

5.1 Major Accomplishments:

This section discusses the most important accomplishments of the project, relative to the general goal and purpose of the project but not in relation to targeted outputs. In the following section, shortfalls relative to target outputs are discussed. Much of the information in this section and the next is summarized in Table 1.

5.1.1 Coverage: NEHCP was officially instituted in 534 MOH health centers, or 19% of all 2800 health centers in Egypt. If these centers provide 25% of the health care as has been suggested, then the NEHCP centers are positioned to reach 5% of the children at the present time.

Most of the 534 NEHCP centers do not function with the complete NEHCP program. Some lack NEHCP trained nurses, others do not have a functioning scale, etc. From Table 1 it can be seen that most of the key components for a complete health center program (i.e., Cassell Learning Kits, equipped demonstration kitchens, funds to buy local produce, scale, charts, NEHCP trained Nurse Teacher, regular classes for mothers) are operational in 50-80% of the project centers. The single most important component is probably the holding of regular classes, which is being accomplished in 64% of the centers. Using this as the indicator, the percent of functional NEHCP centers is 64% of 534, or 342 centers.

5.1.2 Effect on Health Center Staff: There is evidence that NEHCP increased the nutrition knowledge of health clinic nurses. A study of 24 health centers (9) concluded that "There is no doubt nurses acquired valuable knowledge on nutrition ..." (p 38). A comprehensive test given to nurses in 28 centers (11) found that both NEHCP trained nurses and nurses who had not received nutrition training but who worked in NEHCP centers scored higher than nurses in centers without the NEHCP program. (See Section 4.2.2 above.)

This is a particularly important accomplishment because it is important that nutrition messages sent by other channels, such as television, be reinforced by health professionals on a day-to-day basis. This thesis is supported by preliminary evidence from a just being completed study (Section 3.3.3a) in which NEHCP centers were found to transmit nutrition messages on to the mothers more effectively than other clinics. The messages were in the form of simple letters from the MOH Undersecretary to health center directors.

5.1.3 Effect on Mothers: There is weak evidence that the project has had limited but positive effects on the knowledge, attitudes and practices (KAP) of mothers. One study (8) found a large increase in women who breastfed colostrum to their infants, although this finding was neither supported nor rejected in a second study (11). NEHCP mothers introduce supplemental weaning foods earlier. A study of 28 health centers (11) found that more attending mothers (56%) and non-attending mothers (32%) introduced weaning food before the 6th month of life than mothers in non-NEHCP centers (23%). The same

study found that NEHCP mothers also made more use of indigenous weaning foods than non-NEHCP mothers.

In general, mothers at NEHCP centers felt nutrition education was important; mothers who attended nutrition classes were appreciative and those who didn't attend wish they had. However, the above evidence is weak due to methodological weaknesses.

5.1.4 Enhancement of PL 480 Title II Program: There is weak evidence that NEHCP mothers used PL 480 Title II foods in more beneficial ways than non-NEHCP mothers, incorporating it into a wider variety of weaning and family foods and not throwing it aways. Further, NEHCP mothers made greater use of indigenous weaning foods, in preparation for the day when Title II food distributions stop (see Section 4.5.1).

5.1.5 Institutionalization: There have been some accomplishments towards the institutionalization of nutrition education within the MOH structure, although there is still a long way to go. Many MOH employees at various levels have become aware of and more knowledgeable about nutrition. The Nutrition Institute has laid the groundwork for a strong capacity in evaluation of nutrition programs. Some capital equipment (kitchens, scales, learning kits) have been acquired. Perhaps most important, if true, is the finding of the Academy Mid-Evaluation that NEHCP has shown that the MOH system will ... "allow the successful and permanent institutionalization of nutrition education as an integral part of the overall health services without any disruption of the existing mechanism." (9, p 52).

5.2 Major Shortfalls:

5.2.1 Coverage: Only 30% of the target number of health centers were incorporated in the program, very few of which received all of the components (e.g., learning kits, scales) that were targeted. Furthermore, many components were not functional. For example, only 64% of the NEHCP centers held nutrition classes regularly.

5.2.2 Growth Monitoring: This program was not implemented. Scales and growth charts were found in some centers: growth charts in 50%, functioning scales in 65%, both in 39%. (10). A sample of centers with growth charts found only 47% were maintained on a regular monthly basis (11, p 16). A program to insure complete and reliable growth data was not done, as was planned. A program to have mothers keep charts for their own children was not successfully implemented, as called for in the proposal.

5.2.3 Institutionalization: This was not accomplished. Nutrition cells were to be the primary strategy for institutionalizing at the Governorate level, but none were achieve. While several other specific outputs were achieved, most notably the Project Committee, this did not lead to the institutionalization hoped for.

5.2.4 Evaluation: The proposal called for semi-annual impact studies of mothers' KAP, nutritional status, and growth performance.

Two impact studies on KAP were accomplished (8, 11). The called for interim study was completed, but significantly late. In addition the proposal called for a special impact study that would establish baseline data on program entry weights and infant mortality and analyze the separate effects of food distribution, nutrition education and seasonality. This was not done. Finally, the plan called for on-going research on ways to increase the effectiveness of the training program, which was not accomplished.

As a result of this shortfall, there is no information available on the impact of the program on child health and survival.

5.3 Design vs Implementation:

This program did not achieve its targets by a wide margin. Was the reason for this due to faulty design, faulty implementation, or several unfortunate and unforseeable events beyond what could reasonably be expected.

5.3.1 Design: We believe the program design was faulty. It was far too ambitious in many ways. The specific criticisms of the design follow:

(a) In retrospect, it should have concentrated on quality rather than quantity. Lots of work needed to be done to make the NEHCP program work up to its potential, especially in less capable or less receptive health centers. This need still exits. While plausible arguments may have existed at the time to focus on expansion of coverage rather than on effectiveness during Phase II, the Rhoda/Callier Review (12) of Phase I argued strongly in favor of a more intense and less extensive program for Phase II.

(b) The plans for a growth monitoring system were totally inadequate. Growth monitoring is a complicated and difficult program to introduce and make function correctly. The design gave little or no thought to this, and provided no funds beyond the purchase of scales and charts by the MOH.

(c) The evaluation plan was unrealistic. Although it contained some good ideas, such as frequent evaluations throughout the project rather than one big evaluation at the end, there was no hope that the plan could be accomplished with the resources available. First it required the data from the growth monitoring system, which itself would have taken a long time to implement even if the plan to do so and the required funds were available. Second, very little money was made available for the effort. No provision was made for technical assistance in program evaluation.

(d) The design for institutionalization appears to be a collection of ideas rather than a plan to deal with a very difficult problem. For example, individual governorates probably require careful and unique efforts.

(e) The time to achieve bureaucratic decisions and actions was underestimated, in spite of fair warning during the delays before Phase I and Phase II.

5.3.2 Implementation: The project has some successes and failures in its effort to implement, as described in Table 1 and the text. In our opinion, the implementation was reasonable in the face of a faulty design and the normal barrage of bad fortune, in which CRS was plagued by discontinuity of personnel, the Nutrition Institute was plagued by its position as a staff research arm to the Minister rather than a line implementing agency and by the increasing demands placed on its key people, and the entire project was plagued by the unexplained withholding of incentive payments.

These unforseen problems and inability to achieve targeted goals have naturally caused frustration in project personnel, which has sometimes led to concern by some participants as to whether the other participants are doing their job. In general, we believe a credible job has been done on implementation by all participants within the constraints they faced. Further, we believe that Egypt can be proud of the accomplishments of NEHCP, even though they did not come close to the unrealistic targets that were set. In fact, it is unfortunate that not enough attention was given to the successes of the project, because a negative syndrome may have developed which hindered project spirit. One reason for evaluation is just that, to identify successes around which a project can rally.

An important hinderance to project implentation was the difficulty in achieving long-term, full-time management. CRS went through three stages: the original CRS NEHCP project director who became ill, an interim period of considerable time, and finally a new NEHCP director (14). The Nutrition Institute faced the opposite problem--their NEHCP Project Administrator was a key person in the Institute and intended to be full-time on NEHCP but other responsibilities interceded resulting in considerably less than full-time on NEHCP. This is not an easy problem to solve, for good people are in demand, but every effort should be made to think through ahead of time how a large proportion (if not full-time) of the key managers' time can be committed to the project, as well as back up strategies.

Evaluation is an interesting case in point concerning implementation. The plan called for evaluation far beyond what could be achieved with the resources made available. Reliable growth chart data didn't exist; technical assistance was not provided for; there was no baseline data. An early study of two health centers was undertaken (8) which was very instructive.

Additional studies were designed, using the Program Committee, so that the results would be listened to. This was the correct strategy, of course, but also created delays. One of these studies, by the Egyptian Academy of Scientific Research and Technology, produced many thoughtful recommendations based on extensive interviews and field visits, especially with regard to institutionalization, but late in the project. The other study, a

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screening of the NEHCP centers by the Nutrition Institute and CRS, made clear the extent to which the project had been implemented. These were well done and consuming efforts. More was needed, especially the operations analysis studies aimed at improving the training design, but time and people to do them were not found.

It is very significant, we believe, that the quality of the evaluations improved as the project progressed, with the later studies being better methodologically than the first impact evaluation of Phase I. The just-being-completed study on nutrition message effectiveness described in Section 3.3.3a will continue this trend, we suspect, based on our preliminary review of it.

In short, the major problems lie in faulty design, while the effort at implementation was reasonable under the circumstance.

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12. Rhoda, R. and Callier, S. USAID/Cairo PL-480 Title II, Program Review. June, 1981. (This is a review of Phase I, and is referred to as the "Rhoda/Callier Review.")

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13. Quarterly Progress Reports - NEHCP Phase II (CRS/Egypt):
    (a) July-December, 1983 (2 quarters)
    (b) January-March, 1984
    (c) April-June, 1984
    (d) July-September, 1984
    (e) October-December, 1984
    (f) January-March, 1985
    (g) April-June, 1985
    (h) July-September, 1985
    (i) October - December, 1985

14. Memorandum/Project Chronology from CRS staff to Evaluator of NEHCP. (No date, circa April 1, 1986).

15. Letter dated March 3, 1985 from Andrew J. Koval, CRS/Egypt, to Paul Rusby, USAID/Cairo.

Appendix A

EXECUTIVE SUMMARY

From Final Report, Field Effectiveness Report (NEHCP), SPAAC

March 1986.

This study was requested by USAID/Egypt, to test the field effectiveness of the Nutritional Education in Health Centers Project (NEHCP). The Project was implemented through the Ministry of Health infrasturcture with technical assistance, supervision and follow up provided by the Institute of Nutrition Catholic Relief Services (CRS) designed and advised on the Project which was funded by USAID.

The objectives of the study were:

- To test and grade the degree Nurse Teachers are conversant with "messages for mothers": a child health manual used in two weeks training course;
- To evaluate the accuracy, reliability and maintenance of age-weig charts;
- To test the universality of the standardized practical curriculum participating mothers and the extent to which participating mother attend a series of twelve classes;
- To test mothers' retention of, and actual practice of nutrition education instructions received.

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The study was based on a purposive random sample of 16 participating MCH centers representing centers from urban and rural governorates, Upper and Lower Egypt, recognized "good" and "bad" Governorate Nutrition Organizers, urban and rural centers, and Phase I and Phase II centers. Twelve non-participating centers were selected to match the sampled participating centers in terms of georgraphical proximity. Ten mothers of infants, 3-18 months old, were randomly selected from each sampled center to represent participating and non-participating mothers for comparison. Sampling was based on available lists of mothers who attend Nutrition Education (NE) classes, mothers of infants with maintained growth charts, mothers who receive Title II Food, or mothers registered when pregnant. The actual list used was based on the first available list in the same order of priority.

This process of selecting centers and mothers produced a sample of 16 participating centers: four from urban metropolitan area, four urban and eight rural centers; Nutrition Teachers (NT) who are trained (12) and untrained NTs (4); participating mothers who attended NE classes (98: 61%) and participating mothers who did not attend NE classes (62: 39%). The non-participating sample produced 12 centers from urban (4) and rural (8) areas and 120 non-participating mothers.

The analysis proceeded to ascertain the accomplishment of four objectives of NEHCP by comparing participating and non-participating centers breaking down participating mothers into those who have attended NE lessons and those who did not. The four objectives tested were:

Objective (1): At the end of their respective ing courses, Nurse Teachers will be fully convers th "Messages for Mothers" a child health manual ared by the WHO-EMRO;

Objective (2): Introduce growth charts to 140 ticipating centers covering 450,000 infants;

Objective (3): Develop and implement a stand d practical curriculum for the participating mothers;

Objective (4): Cause mothers to change their ior by adopting and consistently practicing techn designed to promote child survival as a result of nstructions they received in the standardized cal curriculum.

Objective (1): Nurse Teachers Knowledge:

A multiple choice, objective, test was ed based on the manual "Messages for Mothers" and administered to pating and non-participating NTs.

The average scores of the test indicate participating NTs had on average, scores 23% higher than non-part ng NTs, trained participating NTs 11% higher than untrained ipating NTs and Phase II NTs 6% higher than Phase I NTs.

Scores of participating NTs ranged from 88% of the total score, with an average of 70%. This relati performance may by attributed more to the quality of the manu which was found to be inadequate as a teaching manual in terms o t and layout.

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Objective (2): Surveillance: Visits & Growth Charting of Infants:

The total number of centers participating in NEHCP by end of February, 1986 were 533 centers. From the 16 centers surveyed, eight centers (50%) had growth charts. From a random sample of 160 charts surveilled (20 from each center), 75 cards (74%) were maintained, from which 45% indicated unbroken monthly visits to center by mother, 15% indicated regular visits but not monthly, and 40% indicated irregular visits.

Not all nurses responsible to weigh infants are necessarily the NTs. Fifty six percent of the 16 nurses responsible to weigh infants know how to use growth charts. Lists of malnourished children for follow up were only maintained in two centers.

Objective (3): Mothers Attendance to Clinics & Exposure to 12 Classes:

Only 11% of participating mothers who attended Nutrition Education (NE) classes had 12 lessons or more. Sixty six percent attended five lessons or less. Records of topic of lessons and names of participants were kept in two centers (12%). The standardized practical curriculum is not used in a standardized organized manner in most of the centers.

Not all recipients of Title II Food attend NE classes, and not all NE class attendants receive Title II Food. But those who attend NE classes tend to receive Title II Food distribution more regularly and visit the center with their infants more regularly than those who do not attend lessons or those who are from non-participating centers.

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Objective (4): Behavior Changes in Mothers:

Effectiveness of NE classes was measured by comparing behavior and knowledge of mothers attending NE classes with those who do not and/or those from non-participating centers. The results indicate that differences do exist in some areas but the effectiveness of the NE classes has not been substantial.

Mothers who have attended NE classes breastfeed colostrum, but only 28% know its protective function. Breast feeding in general is almost universally practiced for long durations with or without NE classes. Nutrition education, however, has had some impact in the introduction of a greater variety of specially prepared weaning foods for infants at ages six months and less in addition to breast-milk. Also NE has enhanced utilization of Title II Food as well as utilization of ICSM to infants as weaning food.

Not all mothers who attended NE lessons reported exposure to nurse instructions in relation to sanitation, waste disposal child hygiene and safe drinking water. However, on average, homes and infants of mothers who attend NE lessons versus those who do not, tend to be on average cleaner and their infants more healthy looking. Around one quarter of mothers (22%) would boil drinking water if it is not clean (as compared to 16% and 12% of other mothers). But still more than half (54%) disposed solid waste in unsanitary ways (as compared to 40% and 62% of other mothers).

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Three items were measured in relation to food values and economics: knowledge of differential value of different foods, knowledge of cheap nutritive meals, and knowledge of preservation of nutritive value of vegetables. NE seemed to have some effect in knowledge of cheap nutritive value (14%) of NE mothers as compared to 6% and 5% of other mothers).

NE did not have any impact on mothers' behavior of stopping or reducing food for sick infants. It had no impact in changing the behavior of stopping breast feeding when the mother becomes pregnant. Limited effect was indicated in knowledge of extra food needs of lactating pregnant mothers (58% of NE mothers as compared to 45% and 42% of other mothers). NE lessons, however, seem to have some effect in relation to importance of sun for infants as 46% of mothers who received NE lessons (versus 41% and 24% of others) knew that the sun is a source of vitamin D or that it prevents rickets.

Most of the maintained growth charts (80%) belong to infants of NE mothers. Around one quarter of NE mothers (27%) maintain monthly monitoring of the growth of infants and 7% maintain it on irregular basis. So NE lessons tend to promote growth monitoring of infants. Slightly more than half of NE mothers (56%) knew that if weight of an infant is below the age weight average then better nutrition is the action required. However, NE impact seems to be negligeable in that aspect as 52% of mothers of the same centers who did not receive NE had the same knowledge.

All mothers, however, professed that NE was important. Mothers who attended classes indicated that these lessons should be given to other mothers because they themselves have benifited from them. The majority of mothers who did not attend these lessons (75%) indicated that they would like to receive such education.

CONCLUDING COMMENTS:

The general overall effectiveness of NEHCP has not been substantial. Yet NE has helped some mothers to adopt behavior that is condusive to survivability of their infants. This is an indication that NEHCP has greater effectiveness potential than what has been achieved. Several factors are responsible for this gap. Turnover in nurses and long leaves of absence hamper the continuity and sometimes even the start of the Project in some centers. Space, required effort, and funds seem to limit applicability of practical lessons. Lessons are not given according to the curriculum in a specified time span. The training curriculum for NTs and for mothers lack identified and specific objectives. The general poor quality of health services at some centers are reflected in quality of NE as implemented, as mothers who attend NE lessons tent to receive Title II Foods more regularly, visit the centers with their infants more often, and more of them have maintained growth charts for their infants.

All the above justify the conclusion that the limited effectiveness of NEHCP should not be considered as the main criterion for evaluation of NEHCP. Nutrition education has the potential to be effective and it is appreciated and needed by mothers.

Appendix B

SUMMARY

Screening Evaluation Report of NEHCP Phase II

(Original Report: Screening Evaluation Report, Nutrition Education in Health Centers Project. Nutrition Institute, Ministry of Health, Gov't of Egypt. Cairo: January, 1986).

The Nutrition Education in Health Centers Project (NEHCP) provided nutrition education to mothers through health centers operated by the Ministry of Health. NEHCP trained health center nurses in proper nutrition, who in turn ran nutrition classes for mothers in the health centers. NEHCP also provided weighing scales, growth charts, money for demonstration kitchens, kitchen equipment and video teaching devices ("cassels"). NEHCP was coordinated with the USAID PL-480 Title II commodity food program and included food donations to the needy mothers. The overall goals of NEHCP were to reduce child morbidity and mortality in Egypt and to help generate effective substitutes (especially for weaning foods) for PL-480 Title II food which was being phased out. Nutrition Institute and Catholic Relief Services carried out the project, with funds from USAID and the Ministry of Health.

At the time of this evaluation, 534 health centers had participated in the program. 165 of these had begun during the pilot Phase I (August 1979 - December 1981), and the other 369 were added during Phase II (started July 1983). The general purpose of this evaluation, done near the end of Phase II, was to determine the extent to which the various components of the project had actually been implemented in the 534 health centers.

A one page data collection sheet (attached) was designed and administered by approximately 10 interviewers from the Nutrition Institute and Catholic Relief Services to most of the participating health centers. The interviewers traveled to the health centers, interviewed with the nurse and physician and also made independent observations. For example, the scales were usually checked by the interviewer to see if they were functioning. Nutrition classes for mothers were considered to have been held regularly (Item B-3 on the data collection sheet) based on the existence of attendance records, whether a class was held the day of the interview, statements of the health center staff and the general background knowledge of the interviewer. The specific type of data obtained can be seen on the attached data collection sheet. No tests on the data reliability were made. (Information on methodology given in this paragraph was obtained by personal interview with Dr. Farouk Shaheen, Project Administrator and Evaluation Study Director, and is not available in the original report).

The interviewers reached 98% (162/165) of the Phase I health centers, and 90% (332/369) of Phase II health centers. Of the 3 unreached Phase I centers, two were no longer functioning. Fifteen of the 37 unreached Phase II centers were in one Governorate (Menia).

The results are summarized in the attached Table B-1 from the original report. From this table, it can be seen that: 39% of all centers had an adequate growth monitoring set-up (charts and working scales), 61% had an adequate set-up for kitchen demonstration classes, and 56% held frequent classes by a NEHCP-trained nurse. Only 20% had all of these items working.

Phase I centers scored significantly higher than Phase II centers in their set-up for kitchen demonstration classes (75% vs 54%) and in regularly held classes by a NEHCP-trained nurse (73% vs 47%), but Phase I and Phase II centers were similar in set-up for growth monitoring (37% and 4[illegible]%). (The higher scores in Phase I centers might be explained by (at least) two arguments: (1) Phase I centers might be more capable, interested and/or accessible than Phase II centers, which could be why they were included in the pilot Phase I, or (2) Phase II centers have had more time to implement changes which may take time. We are not aware of data supporting either explanation over the other).

Table B-2 probes more deeply into the difference between Phases I and II. In Upper Egypt (the more remote and primitive area) performance is consistently much worse in Phase II centers than in Phase I centers. Furthermore the performance drop (from Phase I to Phase II) in Upper Egypt is much greater than the corresponding small and inconsistant drop for Lower Egypt (a less remote area). For example, in Upper Egypt the composite performance in growth monitoring, kitchen set-up, and holding classes (lines 6, 10 and 13 in Table 2) dropped 35% to 24%, 89% to 51%, and 91% to 30% respectively, whereas the corresponding changes (from Phase 1 to Phase 2) in Lower Egypt were 30% to 53%, 89% to 69%, and 91% to 74%. This data tends to support the time delay hypothesis noted above (#2) if it is granted that it takes more time to effect changes in the remote centers of Upper Egypt than in Lower Egypt.

HEALTH CENTER SCREENING FOR NUTRITIONAL EDUCATION ACTIVITY

YES = 1 ☐

NO = 2 ☐

A- GROWTH CHARTS:

1- Are growth charts available? ☐
2- Are scales available? ☐
3- Are the scales functioning properly? ☐
4- Can they properly use growth charts? ☐

B- DEMONESTRATION CLASS:

1- Is there a convenient place for holding it? ☐
2- Are kitchen equipments available? ☐
3- Are the class held regularly? ☐
4- Is the cassele available? ☐

C- NURSE TEACHER :

1- Is there a nurse assigned for nutritional education project? ☐
2- Is the nurse trained ☐
3- Is there more than one trained nurse in the center? ☐

GOVERNORATE : ☐☐

NAME OF THE HEALTH CENTER ..... ☐☐☐

DATE OF VISIT : ☐☐ ☐☐ ☐☐

NAME OF THE INTERVIEWER.....

Table B-1

Summary of Results from NEHCP Screening Evaluation by Phase

(Source: Table IV, Nutrition Institute, Summary Evaluation Report, Cairo, January 1986

		Phase I	Phase II	Total
Sample Response	1. Health Cntrs. in Program	165	369	534
	2. Health Cntrs. Responding (%)	162 (98%)	332 (90%)	494 (93%)
Set-Up for Growth Monitoring	3. Growth Charts Avail. (%)	83 (51%)	166 (50%)	249 (50%)
	4. Weighing Scale Avail. (%)	122 (75%)	233 (70%)	355 (72%)
	5. Scales Funct. of those Avail. (%)	112 (92%)	208 (89%)	320 (90%)
	6. Scales Funct. &Charts Avail. (%) (3 + 5)	60 (37%)	132 (40%)	192 (39%)
Set-Up for Demonstration Classes	7. Kitchen Equip. Avail. (%)	152 (98%)	236 (71%)	388 (78%)
	8. Cassel System Avail. (%)	134 (83%)	235 (71%)	369 (75%)
	9. Convenient Place for Demon. (%)	147 (91%)	292 (88%)	439 (89%)
	10. All Equip. and Space Avail. (%) (7 + 8 + 9)	122 (75%)	181 (54%)	303 (61%)
Holding Classes	11. Hold Classes regularly	137 (84%)	179 (54%)	316 (64%)
	12. Nurse Teachers trained (%)	135 (83%)	235 (71%)	370 (79%)
	13. Trained NT Holding reg. Classes (11 + 12)	119 (73%)	157 (47%)	276 (56%)
	14. NEHCP Trained Nurse Assigned (%)	154 (95%)	303 (91%)	457 (93%)
	15. More than one NEHCP Nurse (%)	64 (40%)	71 (21%)	135 (27%)
	16. Growth Monitoring & Classes (%) (6 + 13)	48 (30%)	89 (27%)	137 (28%)
	17. Monitoring, Set-Up & Classes (%) (6 + 10 + 13)	42 (26%)	57 (17%)	99 (20%)

Table B-2

Percentage of Health Centers with Program Components by Phase and Region

(Source: Table II and III, Nutrition Institute, Screening Evaluation Report, NEHCP, Cairo, January 1986)

		Upper Egypt		Lower Egypt		Great Cities		Canal Cities	
		Ph. I	Ph. II	Ph. I	Ph. II	Ph. I	Ph. II	Ph. I	Ph.II
Sample Response	1. Health Centers in Program								
	2. Health Centers Responding	46	154	47	139	46	4	23	35
Set-Up for Growth Monitoring	3. Growth Charts Available	43%	41%	45%	58%	61%	25%	61%	60%
	4. Weighing Scales Available	80%	64%	66%	70%	76%	50%	83%	100%
	5. Scales Funct. of Those Avail.	89%	54%	94%	92%	72%	50%	74%	100%
	6. Scales Funct. & Charts Avail. (3 + 5)	35%	24%	30%	53%	41%	0	48%	60%
Set-Up for Demonstration Classes	7. Kitchen Equip. Available	98%	75%	98%	79%	87%	100%	91%	60%
	8. Cassel System Available	83%	69%	96%	79%	83%	75%	74%	46%
	9. Convenient Place for Demonst.	98%	86%	91%	96%	85%	100%	87%	60%
	10. All equipment & Space Avail. (7 + 8 + 9)	89%	51%	89%	69%	70%	75%	52%	11%
Holding Classes	11. Hold Classes Regularly	90%	35%	98%	84%	87%	75%	52%	14%
	12. Nurse-Teachers Trained	94%	62%	94%	88%	87%	100%	43%	34%
	13. Trained NT hold. Reg. Classes (11 + 12)	91%	30%	91$	74%	78%	75%	17%	11%
	14. NEHCP Trained Nurse Assigned	100%	91%	98%	98%	98%	100%	87%	66%
	15. More than one NEHCP Nurse	35%	21%	51%	25%	50%	50%	4%	3%
	16. Growth Monitoring & Classes (6 + 13)	33%	9%	30%	51%	35%	0	13%	11%
	17. Monitoring, Set-Up & Classes (6 + 10 + 13)	28%	8%	28%	30%	30%	0	0	9%

Upper Egypt includes Aswan, Beni Suef, Assiut, Sohag, Fayoum, Qena, Giza.

Lower Egypt includes Menoufia, Beheira, Damietta, Kafr El Sheikh, Gharbeya, Sharkeya, Kaliubeya.

Great Cities includes Cairo and Alexandria. Canal Cities includes Ismailia, Suez, Port Said, Nova Val

Appendix C

SUMMARY

Excerpts from Mid-Evaluation Report, NEHCP Phase II

(Original Report: El-Nockrashy AS, Kassem MA, Abdel-Salam ME. Evaluation Report, NEHCP. Academy of Scientific Research and Technology, and Nutrition Institute (MOH): Cairo, October 1985).

This extensive analysis by a team of Egyptian experts in the middle of Phase II of NEHCP made use of numerous interviews with national and governorate officials, health center personnel and project staff, and with recipient mothers during field visits to 24 health centers. The report is couched in diplomatic language and uses limited quantified or otherwise verifiable data, but it makes many interesting observations and recommendations which are carefully thought through and generally correct, we believe.

The principal findings and recommendations quoted below are from the Executive Summary. (pp 52-55):

The major general findings include:

The MCH system of Egypt is a well coordinated network that allows successful and permanent institutionalization of nutrition education as an integral part of the overall health services, without any disruption of the existing mechanisms.

There is a strong desire and perceptible movement on the part of all groups involved in the NEHCP to establish and institute nutrition education in the MCH-system. Also great receptivity and support as to the integration of nutrition education to the overall MOH-services have been expressed by top officials in the visited governorates and by

The nutrition education message found its way to almost all nurse teachers (NT), who demonstrated capabilities of addressing mothers of different socio-economic levels. NEHCP has created awareness, both in rural and urban communities as to the primary importance of nutrition and hygiene to overall health aspects.

The NEHCP has directly or indirectly developed the institutional structure and performance of participating organizations.

Future prospects of the NEHCP depend upon the extent of support that will be given by the MOH. The expansion to include other centers, and have a nation-wide network necessitates the development of a responsible, technically capable body and above all quaranteed career opportunities that attract doctors for MCH-care. Top level administration in the MOH should reorient services to give chances for MCH-care like therapeutic care. The proposed "Nutrition - Cell" approach is a logical way for institutionalizing nutrition education once financial and organizational factors are taken care of.

<u>The major specific findings are</u>:

the project has an ambitious goal by planning for a national program that extends nutrition education services to 1400 MCH centers by the end of Phase II. Though in principal nutrition education should find its way to all 2800 MCH centers, yet it is proposed that the project would concentrate on upgrading the quality of services in the 534 centers.

The PC which carried the primary responsibility of follow up of nutrition education program in centers, should consider examination of different options of institutionalization of nutrition education in the MOH-fabric as its primary responsibility. The team recommends the start of a pilot with nutrition cell(s) in Damanhour and/or Assiut.

The role of MOH-Governorate level officials has been marginal. Their collaboration and complete involvement are prerequisites for any effective program of institutionalization of nutrition education in MOH-infrastructure.

The NI which carried the primary responsibility of training is commended for the overall achievement, the quality of services delivered and the supervisory mechanisms. The many examples of behavioral impact among NT and mother participants reveal beyond any doubt the excellence of performance of the NI and all other collaborating bodies. However, future plans should consider integration of nutrition and health education in one program, that would be offered by MCH-staff supported by NI specialists.

All centers participating in NEHCP, receive the PL-480 commodities of Supplementary Feeding Program "SFP". The objective of linking both programs has been generally fulfilled. Problems such as: the lack of storage place and irregular provision with SFP allowances, sometimes force centers to distribute products among participants and

non-participants of nutrition education classes. This also affects kitchen demonstration and the general objective of integrating both programs.

CRS reports and minutes of PC are complete and informative. Reporting at other levels, though sometimes exists, yet is incomplete. The majority of NT keep books, nutrition organizers (NO) reporting is less punctual. Problems include: (a) unawareness of whom reports should be submitted, (b) inexperience in report writing, and (c) lack of feedback and follow-up.

The problem of honoraria and incentives is byfar the major constraint that affected performance during the second phase of the NEHCP, yet hardly affected the integrity of the infrastructure and the willingness to move ahead with nutrition education.

Other observations include:

. The Policy Committee (PC) met regularly, had 77% attendance, and always issued minutes. No records exist of official (PC) trips to the field, but project administrators made frequent visits to health centers in different governorates. (p. 24).

. The role of the Field Administrators and Regional Supervisors was not discovered. (p. 24).

. One of the major problems is personnel turnover in Upper Egypt (about 30%). (p. 39).

. "To intermesh nutrition education into the fabric of the health delivery system on a national scale, the project has still to solve some major problems before its termination. (It) has to develop an organizational structure which is compatible with and apt to fit in the organizational structure of the health delivery system". (p. 29).

- It needs to better involve the health center directors, the Directors of MCH and Therapeutic Medicine at the Governorate level as well as the highest governorate officials, and at the national MOH the director general of MCH and Under-secretary of state for primary health care because the project is using people under their jurisdiction. (p. 27).

- The present management system should be viewed as pilot project management rather than a nationally integrated system management. (p. 30).

. The NEHCP alone or in conjunction with other inputs has succeeded in (p. 43-44):

- Changing the long practiced habit of withholding newborns from the breast for 2 days.
- Increasing awareness of the importance of growth monitoring.
- Increasing awareness of nutritional value of supplementary food products such as ICSM.

. Mothers are motivated to attend the nutrition education classes by (p. 44-45):

- Friendship with nurse/trainer and other mothers.
- A pleasant friendly place (demonstration kitchen) to sit and relax.
- Medical treatment and attention.
- SFP Supplies.

SUMMARY

Internal Evaluation Report of a Study in Two Giza Centers

January 1985

(Original Report: Internal Evaluation Report, NEHCP F. Shaheen, Nutrition Institute, Min. of Health, GOARE, Cairo, January 1985).

Phase I of NEHCP was implemented in 165 health centers throughout Egypt during 1979-81. Phase II was begun in July 1983. Both phases had the objective of improving child health and survival by giving nutrition education to mothers in conjunction with the distribution of US PL-480 Title II food.

This study is the first attempt to measure program impact on the knowledge, attitude and practice of mothers, using two health centers in the Giza Governorate. One of the centers (Giza I Health Center) joined NEHCP early in Phase I, while the second center (OM-Khanan MCH Center) joined NEHCP during Phase II only a few months before the study. Fifty mothers from each center were contacted as they entered the center and asked to self-report on several questions, mostly related to child feeding practices. A standard questionnaire had been developed and was administered verbally by trained interviewers. The results are summarized in attached Table D.1.

The original assumption of the study was that the Phase I center would score higher than the Phase II center if the program was effective. The logic behind this assumption was as follows: (1) The two Giza health centers were chosen to be similar, (2) essentially the same program was implemented in both Phase I and Phase II, (3) the program would certainly have achieved its full effects after 5 years in the Phase I center, whereas very small effects would be measurable in the newly implemented Phase II program. However, as the study report clearly points out, this logic is not very robust due to the lack of baseline data and the vulnerability of the first assumption (i.e., similar centers).

The data (in Table 1) shows that the Phase I center is superior in most of the indicators: breastfeeding starts earlier (line 5), supplemental milk is given from a cup rather than a bottle (line 7), supplemental feeding starts first before the 6th month of life (line 8), babies are fed when they are sick (lines 9 and 10), and more mothers find the growth chart useful (line 12). Percentage of mothers breastfeeding (line 4) and exposing their child to sunlight (line 11) are about the same in the two centers, while more Phase II mothers breastfeed exclusively (line 7), which is considered inappropriate after the 6th month of life. Phase I babies are better nourished than Phase II babies based on standards of weight-for-age (line 3).

These results are encouraging, but are not conclusive for the reasons noted above.

TABLE D-1

Differential Effect in Two Giza Health Centers of a Nutritional Education Program as Self-Reported by Mothers

(Source: Table entitled "The Effect of Nutrition Education on Mothers Knowledge and Attitude towards Child Feeding" in Internal Evaluation Report, NEHCP. Nutrition Institute: Cairo, Jan. 1985.)

Item	Giza I Hlth Cntr (Ph I) Males	Giza I Hlth Cntr (Ph I) Females	OM-Knanan MCH Center (Ph II) Males	OM-Knanan MCH Center (Ph II) Females
1. Mean age of child (months)	13.3	11.0	10.9	13.7
2. Mean weight of child (kgs)	8.9	7.6	6.7	6.4
3. Percent of standard weight	93%	81%	70%	68%
4. Percent breastfed	90.1%	96.3%	100%	89.5%
5. Percent starting nursing first day of life	70.5%	67.0%	0	0
6. Age stopping breastfeeding	- Data Unclear -			
7. Children with some breast-feeding:				
a. Given formula w/cup(%)	57.2%	54.7%	3.5%	6.8%
b. Given formula w/bottle	19.1%	27.2%	27.6%	13.3%
c. Breastfed exclusively	23.7%	18.1%	68.9%	79.9%
8. Mean age when supplemental feeding starts (months)	5.5	5.5	7.1	8.0
9. Percent given food during diarrhea	95.5%	96.3%	27.0%	36.3%
10. Percent given food during other illness	95.4%	96.3%	22.9%	46.6%
11. Percent exposed to sun-light	90.9%	88.4%	93.8%	94.7%
12. Attitude about growth chart:				
a. Useful (%)	36.4%	62.7%	0.5%	7.0%
b. Not useful (%)	0	0	0	0
c. Not understandable (%)	13.6%	0	0	0
d. Don°t know (%)	50.0%	37.3%	95.0%	93.0%

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Appendix E

Selected Information

from the NEHCP Phase I Program Review

(Source: Rhoda R and Callier S. USAID/Cairo PL-480 Title II Program Review. June 1981)

1. This independent review includes the NEHCP Phase I project. The review notes that Phase I accomplished the following:

   (1.1) 28 Nutrition Organizers (NOs) trained and operating in their areas, and provided with salary.

   (1.2) A management structure in place that includes a Project Director, Project Co-director and five regional nutritionists, with four equipped regional offices in Alexandria, Assiut, Cairo and Port Said Governorates.

   (1.3) Transportation for management staff and NOs through provision of 29 cars.

   (1.4) 165 health centers with nutrition education classes given by center nurses trained by the program.

   (1.5) 165 health centers equipped with demonstration kitchens and provided with 5 LE monthly for local supplies.

   (1.6) An evaluation based on consumption behavior in 8 Governorates.

   (1.7) A partially completed study by Al Azhar of improved designs for carrying out nutrition education in the health centers.

In summary, "the nutrition education component implemented under Section 204 project has generally accomplished the outputs as outlined in the logical framework of the project paper. However, there is little evidence that the goal (improved nutrition status of preschoolers) or purpose (establishing framework to institutionalize nutrition education as part of MCH services) has been achieved. This is not surprising since the linkages of outputs to purpose and goal were not strong in the program design".

2. Several interesting observations are made about NEHCP Phase I. They are:

(2.1) "The current project was several years in the planning stage, beset by a series of delays. An initial transfer agreement between USAID and CRS was signed in September, 1977. CRS was then to sign an implementation agreement with MOH, with staff selection and other project start-up activities expected to require 6 months. However, the Minister of Health was replaced shortly before CRS signed the agreement with AID and CRS had to negotiate its intended implementation plan with a new Minister. A resolution of issues (principally one in which MOH rather than CRS assumed direct responsibility for the 5 regional nutritionist positions under the project) finally resulted in a signed agreement in may, 1978. However, a project director and co-director were not named by MOH

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until November of that year. In Spring of 1979, final selection of the 5 regional nutritionists was almost complete, but there had still been no expenditures under the project. Despite CRS' and the Missions's last minute efforts to get an extension, the Grant Agreement expired and a new agreement had to be readied". (p 67-68).

(2.2) "Drop-outs among the group of (nurse organizer) trainees has been minimal". (p 69).

(2.3) There is slippage between nutrition education and Title II food distribution components. The eligible participants for nutrition education span the total MCH group (pregnant and lactating women to mothers of children under 6), whereas food is received by families outside this group. This slippage is due to "lack of direct linkages at national level" between the MCH Director of MOH, which operates food distribution, and the Nutrition Institute, which operates nutrition education. (. 72).

(2.4) "The capability to measure goal achievement on a large scale assumes improvement in clinic record-keeping, the resolution of the impasse regarding the national weight chart, and the providion of the necessary supplies and

personnel training/motivation to institutionalize weight-taking in the clinics. In the interim, it is assumed, small, study-based verification of goal achievement can be undertaken". (p. 90).

(2.5) "MOH clinics represent the best available delivery system for reaching the intended MCH target group". (p. 90).

(2.6) "There are critical supply and personnel issues whi h must be addressed if weight-taking and recording is to be instituted in (health centers). ... the use of a standard weight chart on Egypt remains unresolved ... Scales currently available are insufficient in number and often are unsuitable. ... Clinic personnel need to be trained to take accurate weight measurements and in use of growth charts. Training will need to address motivation as well as technical expertise. ... Considerable thought needs to be given how to (do growth monitoring in a way) which is least time-consuming, burdensome or disruptive to clinic operations". (p 93).

(2.7) "The potential represented by the combination ... of growth monitoring and health/nutrition education ... with food distribution is much more powerful than any of them in isolation". (p 97).

(2.8) "As in all programs with limited resources, there is an unavoidable tradeoff between extensiveness and intensity. Phase I reached 165 centers ... As the first effort to introduce any kind of nutrition education into the day to day work of health units in Egypt, (it was) an ambitious task, (particularly) in a context where ... clinic work is low pay and low prestige with clinic workers resistant to what is perceived as add-on work without added remuniration. In such an environment, covering 165 centers in 18 different governorates has meant concentrating on coverage rather than impact". (p. 100).

(2.9) "The Al Azhar project reflects CRS recognition that the content and methods (of the nurse organizer training program) are less than optimal and is intended as a testing ground for improving the broader program. (This effort) is critical and deserves additional emphasis even at the expense of postponing more extensive coverage". (p. 100).

(2.10) "... it is generously estimated that 20-25% of the population are served by (MOH health centers). The centers have low prestige due at least partly to poor quality service. Those who have other alternatives

generally avoid use of the public health system. The 20-25% who do use the MOH centers are therefore most likely from poor socioeconomic groups. Their preschool children are most likely to be those suffering from malnutrition. This deduction is supported by MITs weighing exercise which found higher rates of malnutrition among the center population than in the general population. The MOH centers, then, are one means to reach the target group of 6-36 month old children". (p. 96).

Appendix F

SUMMARY

Preliminary Evaluation Report for NEHCP Phase I

(4 Governorates)

A preliminary evaluation of NEHCP Phase I was conducted. It included information on class attendance by mothers, and attempted to determine changes in infant feeding practices as a result of the program.

Rhoda and Callier (12) report that data was collected in all 18 Phase I Governorates, but that data was analyzed for only 8 of them. (p. 74). Data from four of the Governorates was attached as Appendix D of the proposal for NEHCP Phase II found in the USAID/Cairo files, and it is that data which we summarize here.

Three health centers were selected in each Governorate, two of which were participating in NEHCP Phase I and one of which was not (the "Control"). Thirty mothers were interviewed at each health center, more or less in sequence as they arrived at the health center. Thus, at the two participating health centers in each Governorate, data was obtained both from mothers who has attended nutrition education classes and those who had not. (Naturally none of the mothers in the control health center had attended the classes). The interviews were carried out by staff of the Nutrition Institute.

The four Governorates and their health centers for which we have data are:

1. Sharkia Governorate (Zagazig MCH Center I, Heriet Razanah Health Unit, Zagazig MCH Center II (Control)).
2. Ismailia Governorate. (Center names not included).
3. Fayoum Governorate (Sannores, El-Sheikh Hassan, Cenro (Control)).
4. Aswan Governorate (Draw Health Center, West of High Dam Health Center, El Gozaira (Control)).

Results are summarized in Tables F-1 and F-2. The number of mothers interviewed is given in Table F-1, broken down by age of the infant, governorate and whether the mother had attended the nutrition classes or not (if she were in one of the participating centers) or was from the Control center. Note that the 9-12 month age group has a very small sample throughout. Also Table F-1 shows the attendance rate, overall 70%.

It is lower in the Sharkia and Fayoum Governorates, which apparently joined the program later than Ismailia and Aswan.

Table F-2 is more interesting. The interview with the mother obtained the age of the baby, and then asked her if she fed her baby each of 26 different food items, including breast milk. Table F-2 shows which food groups (*) she reported feeding to her baby. The main effect of the program appears to be an increase in solid food at an earlier age. Tables F-2(c), F-2(d) and F-2(e) respectively show a larger percentage of attending mothers feed their babies carbohydrate foods, animal/dairy foods, and vegetables between the ages of 6-18 months, which was a desired effect of the program.

However, in both the animal/dairy food group and in vegetables, the fact that the control group is between the attending and non-attending mothers rather than equal to the non-attending mothers suggests that the difference between the attending and non-attending mothers may be due to self-selection (mothers who perform better attend) rather than to the NEHCP program. In carbohydrates, the result is more consistent with the program-as-cause, because the control group is more or less equal to the non-attending group.

(*) "Bottle feeding" contains both animal milk and powdered milk. "Animal foods" contains eggs, cheese, meat/poultry, fish, oil/fats, and youghurt. "Vegetables" contains vegetable soup, legumes, cooked vegetables and fresh vegetables. "Carbohydrates" contains rice-water, rice, mehalabia, wheat Belila, macaroni, bread, potatoes, fruits, sugars, beverages, weaning mixtures and sweetened concoctions.

Results on breastfeeding and bottle feeding do not seem to show any program effect.

Two comments are appropriate at this point. First, no statistical analysis has been done on the figures in Table F-2, as the general comments above may or may not prove to be significant if they were subjected to proper statistical analysis. Second, the original reports, on a Governorate by Governorate basis, report that the program does seem to have had a positive effect.

However, Our review of the data in summary suggests that such positive effects are very weak on an overall basis. One reason for the descrepancy between the results reported for individual governorates and our summary analysis may be that each Governorate has some positive and some negative effects which we average out in the larger composite sample.

Table F-1
Sample Sizes and Nutrition Class Attendance
NEHCP Phase I Evaluation: 4 Governorates

	Age (Months)	Sharkia	Ismailia	Aswan	Fayoum	Total
Attending Mothers	6-9	5	17	10	0	32
	9-12	1	4	7	0	12
	12-18	8	12	5	11	36
	18-24	4	4	10	7	25
	24 +	17	10	20	15	62
	Total	35	47	52	33	167
	% Attending	58%	78%	87%	55%	70%
Non-Attending Mothers	6-9	4	0	3	0	7
	9-12	0	0	0	2	2
	12-18	4	1	1	1	7
	18-24	2	3	1	6	12
	24 +	17	9	3	18	47
	Total	25 1/	13	8	27	73
Mothers From Non-Participating Control Center	6-9	5	0	10	9	24
	9-12	0	4	6	4	14
	12-18	9	7	7	3	26
	18-24	7	5	0	11	23
	24 +	9	14	7	3	33
	Total	30	30	30	30	120

(1) The numbers in this column do not sum to 25, as they should, due to inconsistencies in the original reports.

Table F-2
Summary Results from NEHCP Phase I Evaluation
4 Governorates

Table 2 (a) % Breast Feeding

Age	Attend	Non-Attend	Control
6-9	84	86	100
9-12	100	50	93
12-18	81	57	88
18-24	72	67	87
24 +	6	2	9

Table 2 (b): Mean % Bottle-Feeding

Age	Attend	Non-Attend	Control
6-9	20	21	8
9-12	13	25	11
12-18	24	43	25
18-24	20	29	17
24 +	21	21	14

Table 2 (c): Mean % Receiving Carbohydrates

Age	Attend	Non-Attend	Control
6-9	33	21	17
9-12	31	29	27
12-18	35	33	35
18-24	35	33	31
24 +	36	37	37

Table 2 (d): Mean % Receiving Animal Foods

Age	Attend	Non-Attend	Control
6-9	21	7	13
9-12	32	17	19
12-18	31	21	24
18-24	35	46	16
24 +	39	35	28

Table 2 (e): Mean % Receiving Vegetables

Age	Attend	Non-Attend	Control
6-9	35	7	25
9-12	46	25	32
12-18	48	25	35
18-24	41	31	30
24 +	56	53	52

Notes: Age in months. "Mean %" obtained by taking sum of all responses to foods in that category and dividing by number of opportunities.

Appendix G

STATEMENT OF WORK

1. Summary Evaluation Report:

The contractor shall prepare a final summary evaluation report covering, at a minimum, the major items listed on the attached outline based on the information specified in Para V 1 and 6 hereafter, which will clearly answer the following two (A+B) questions:

(A) As measured by the accomplishments and failures of the subject project, evaluate the competency of CRS/Egypt in the field of nutrition education by answering the following two questions:

(1) Did the CRS/Egypt performance in project design and their performance in project implementation (to the extent CRS could have controlled implementation) reflect a high degree of competency in matters of nutrition education? If so where; if not why not; what were the major problems?

(2) Did the US and Egyptian funds invested provide the maximum return on investment; alternatively, considering the funds made available, might the CRS expenditure have achieved a substantially greater (more effective) behavioral change (of the kinds promoted by the CRS Nutrition Education II Project) in mothers, had these funds been employed differently?

N.B: The question is clarified by the following:
(a) The contractor should not attempt a cost benefit analysis.
(b) The contractor should include in his response a discussion of alternative procedures to achieve the same nutrition education goals and objectives which might have provided better results.
(c) Ultimately, the answer will be judgemental based on the contractor's extensive experience with other attempts to accomplish the same nutrition education goals and objectives.

(B) What techniques were developed in the CRS activity which could be adopted/repeated in any new project in the future? What techniques should be avoided, revised, changed, etc. in designing and implementing future projects in Nutrition Education?

2. Findings, Conclusions, and Recommendations:--The contractor shall include in his summary evaluation a recommended course of action for future support of nutrition education activities in Egypt by USAID. In satisfying this requirement the contractor is required to distinguish clearly in his report between his findings (i.e. the "evidence"), his conclusions (his interpretation of the evidence and his best judgement based on this interpretation), and his recommendations based on these conclusions.

3. Methods and procedures:--In order to develop findings, make conclusions and recommendations with respect to questions A+B above, the contractor shall:

a. Review Prior Evaluations--This review shall cover the 45 page CRS project proposal, the USAID approval documents, and all of the documentation of an evaluative nature produced thus far about the Nutrition Education in Health Centers Project (NEHCP) Phase II including (but not limited to):

(1) Evaluation Report - Nutrition Education in Health Centers Project - Dr. El-Nockrashy, Kassem, and Abdel Salam - C tober 1985.

(2) Report of Assessment 534 Health Centers -CRS + Nutrition Institute (to be published end February 1986).

(3) Nutrition Education in Health Centers Project--Internatl Evaluation REport - January 1985 Nutrition Institute + CRS.

(4) Field Effectiveness Report - Local contractor SPAAC - (to be published approximately March 30, 1986).

b. List Inputs/Outputs Planned Versus Inputs/Outputs Accomplished:
The contractor shall prepare a "Summary of Status/Attainment of Original Inputs/Outputs" (Appendix B) by (1) itemizing the outputs listed in the CRS unsolicited Nutrition Education in Health Centers Project, Phase II Proposal including Annexes A-F thereto;
(2) itemizing the outputs actually delivered by the project. This will be done largely by a file search, but also office interviews, and perhaps by spot checks in the course of possible field visits.

c. Analyze Inputs/Outputs Planned Versus Those Accomplished
From Appendix B above answer the following questions and incorporate them in findings, conclusions and recommendations:

(1) Were the planned inputs/outputs over ambitious (time wise).
(2) Were the planned inputs/outputs realistic (attainable other than time)?
(3) Were the planned inputs/outputs valid? Had they all been achieved, would all have made equal contibution to achieving the project putpose - or were some of limited usefulness from the start?.
(4) Were the planned inputs/outputs appropriate to the levels of GOE policy development and GOE implementation capacity which then existed?; were the promised achievements appropriate to the bureaucratic and political constraints which then existed?

d. Analyze Evaluation Regimen:

Based on the experience of Nutrition Education I, evaluation was an important component of the Nutrition Education II activity and included the following:

(1) To thoroughly and periodically evaluate the project.
(2) To perform an interim evaluation on the 14th month.
(3) To perform the evaluation regimen cited in the Project Paper Section H pages 30 -37.

The following questions concerning the evaluation regimen shall be answered by the contractor:

(1) Was the above (1), (2), (3) evaluation regimen followed? If not, why not? If so, were reports useful? For example were lessons learned, identified constraints, etc. used to adjust strategy.
(2) Comment on the adequacy and complexity of this evaluation regimen.
(3) Was this evaluation regimen realistic? Why?
(4) How might the evaluation regimen been strengthened.

e. Analyze Field Effectiveness:

(1)Drawing largely upon the Field Effectiveness Evaluation Report prepared by another consultant in Feb-May 1986, develop findings, draw conclusions, and make recommendations with respect to project effectiveness by examining the following activities and answering questions related thereto:

(1) NURSE TEACHERS

Comment on the quality of nutrition education conveyed to nurse teachers based on the results of the Field Effectiveness Report.

Participating versus non participating differences.
Upper/Lower Egypt differences.

Based on these results, what changes should have been made in design and/or implementation?

What are reasons for differences in quality of messages received by nurse teachers?

(2) INFANT SURVEILLANCE

- Growth Charts
  Were they - adequately designed?
- distributed?
- used properly (instructions adequate)?
- are they serving their purpose?
  (a) providing at least a monthly observation of
  (b) identifying endangered infants?
- Home Visits - Is this a realistic and appropriate aspiration in the present Egyptian context or do the humand and fund resource limitations preclude home visits?

(3) BREAST FEEDING

- Did the education message cause more mothers to breast feed than those no so instructed?
  How might the instructions, presentation technique, etc. been altered to cause even more mothers to breast feed than those not so instructed?
- How might the instructions, presentation technique been altered to cause even more mothers to breast feed?

(4) WEANING FOOD SKILLS

- How was mother's cpacity enhanced by the project to identify, select, prepare, and serve adequate weaning foods made from resources available to her in her village?
- How might this capacity been augmented within the same time and funding constraints?
- To what degree, if any, did provision, demonstration, and distribution of PL-480 Title II imported foods contribute to mother's feeding of indigenous weaning food to her infant? Was there a disincentive to learning about the use of indigenous weaning food food because Title II was provided?
- To what degree, if any, did the project enhance the effectiveness of the Title II foods being distributed?

(5) SANITATION, WASTE DISPOSAL, PERSONAL HYGIENE, SAFE DRINKING WATER

- Did more participating than non participating mothers show positive behavior here? If no, how might the design/implementation been improved.

  If yes, what were the factors which promoted or fostered this difference? How might the design be further improved to achieve even greater positive impact here?

  How was mother's capacity to provide safe drinking water enhanced by Nutrition Education II?
  What alternative procedure within the same budget and time frame further enhanced that capacity? Was the clean water instruction to mothers realistic?

(6) FOOD VALUES & ECONOMICS - To what extent are mothers aware of:

(a) food nutritive values and how to preserve them?
(b) how to feed the sick child?
(c) importance of sunshine?
(d) need for extra food for pregnant and lactating mothers?

f. Analyze Successes/Failures Related to Purpose Attaintment; Contribution to Overall Goal:
The preceeding items sections (2) to (6) (Breast Feeding, Weaning Food, Sanitation, Food Values and Surveillance) are five activities that were to be addressed by this project because of their anticipated positive impact on reducing infant mortality. Comment on the following:

(1) Was the project purpose achieved with the above mix of activities and their related outputs? If so, how? If not, what were the major shortcomings? What were the major successes?
(2) Is the experience (successes and failures) of this project consistent with the experience elsewhere with similar activities?
(3) Are the differences between this project's experience, and experience elsewhere, due primarily to the adequacy (or inadequacy) of design or implementation?

6. REPORTING REQUIREMENT & DEBRIEFING:

a. The contractor shall deliver a draft English Language Summary Evaluation Report to the Project Officer for approval not less than than 36 hours before departure from Cairo; debrief the Mission, CRS and GOE representatives at a single meeting not less than 24 hours prior to departure from Cairo; and deliver fifteen English language copies of the final Summary Evaluation Report within 30 days after departure from Cairo. The final Summary Evaluation Report whall be delivered to: Mr. Paul G. Rusby, Project Officer, American Embassy, Box 10, HRDC/FFP, FPO NY 09527.

Appendix H

Chronology of Actions taken by CRS
in the NEHCP in Fiscal Years
1985 and 1986

July 1983: Project started without the release of the "incentives" money.
CRS loaned the Policy Committee Approx. L.E. 10,000 to start work.
This money was to be repaid when the incentives were paid.

October 1984: George Popes became ill and left the project.

October 1984: Mrs. Helen Bratcher- Nutrition Consultant from CRS/NY started a 3 month " holding" operation.

February 1985: Mrs. Bratcher wrote a report on the current state of the project which suggested that CRS's involvement should cease unless the following two actions take place.

(a) the incentives are released

(b) the management of supervision of the project is transferred to the Ministry of Health.

CRS/NY agreed; meantime expansion of the project is to stop.
Dr.Hammamy MOH Undersecertary for Primary Health Care said that it would be imposible to appoint MOH personnel to supervise the project until such time as the incentives are available to pay them.

July, 1985 Money for project activity excluding incentives paid on request by CRS to the Nutrition Institute is found to have been used to pay incentives for the second time

April 1985: In the following discussion with the Policy Committee the poor performance of the project was challenged and it was decided to do a "screening" of all participating centers.

September 1995 : Plan of action in the event of non payment of incentives developed:

The development of materials for use in Secondary Schools of Nursing and for physicians;

"Model Centers to be chosen and furthur developed.

A mid-term evaluation was commissioned. Further expansion of the project is not recommended.

November 1985: The results of the screening show that out of the 534 centers listed only 100 are working well.

January 1986: Refresher training for Nutrition Organizers already at post and seminars for physicians were held.

February 1986: USAID rejects "plan of action" amendment request on the grounds that it is outside the stated objective and planned action of the project.

The money for project activities excluding incentives paid on request by CRS to the Nutrition Institute is found to have been used to pay incentives for the third time. Also, it appears that money which had been given to the Nutrition Institute to transmit to governorates for MCH centers had not been received on a regular basis,

March 1986 : CRS took over direct payment of project expenses.

Side Issues:

(a) Formation of Nutrition Cells-suspended;

(b) Repackaging - started on a pilot experimental basis;

(c) Extension of the project still under discussion- form to be decided;

(d) Development of educational materials-proceeding.

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For the Evaluator of the NEHCP
From CRS Staff

I. Goals
II. Institutional Framework
III. Operational Difficulties

I. Goals

To strengthen the government of Egypt MCH services through the introduction of a nutrition education program in conjunction with the distribution of title II foods. Ultimate goal to improve family health, in particular the health of children aged between 6 - 36 months.

To introduce an awareness of nutrition and health education into the Ministry of Health Maternal Child Health sector by: (1) training nurses in nutrition education and setting up a situation where they can conduct classes using visual aids and practical demonstrations, (2) to train nurses to moniter infants' growth by using growth charts and scales.

To institutionalize nutrition and health education within the MOH structure by (3) training a team of supervisors usually hospital dietitians (4) forming nutrition cells; (5) strengthening the nutrition institute training function.

II. Institutional Framework

The NEHCP is based within the MOH MCH structure. It is subject to the strengths and weaknesses which charactarize this system. The strength is the fact that the MCHs serve the entire population and also that it is in these centers that related projects are based, i.e., ORT, Urban and Rural Health and UNICEF. The infrastructure of the MCHs is reinforced by the training and equipment donated by other projects and the NEHCP benefits from this. However, the NEHCP is also adversely affected by the weaknesses of the MCH structure. One factor is the general preference within the medical profession for curative rather than preventive medicine. This of course is reinforced by the public demand and the lucrative rewards to the profession of meeting this demand. The staffing system, especially in rural areas where there is a rapid turnover of physicians and nurses, allows for very little continuity. The quality of the physical enviornment and of personnel varies a great deal- it is not a consistent service nationwide- and the NEHCP is subject to this variation.

The internal administrative system of the MOH is often slow and not very efficent, i.e., the delay between the payment of the check to buy kitchen equipment and the delivery of that equipment to a center has been as much as one year!

One of the goals of the project was to make nutrition education available all over Egypt. Centers were selected over a very wide area. In some cases the roads leading to the centers are not good and distances between centers, even in the same governorates are very great, so supervision is both difficult and time consuming. The selection in phase I of easily accessible and well functioning centers was a factor in the success of this part of the project -but as more centers were added the quality and accessibility has declined.

The presence of several related projects in centers seems to work well. The NEHCP depends for its success on a staff who keep good records of patients, have a systematic approach to mother and child health - have regular check - ups for pregnant mothers, a good delivery service and functioning inoculation program. Where these functions have been strengthened by UNICEF, Urban and Rural Health projects the inclusion of nutrition education is a natural progression and not too difficult to organize. However, where these services do not exist and where there is no public demand for them, the expectation that a regular and well attended nutrition education class will take place is unrealistic .

The goal of the project that growth monitoring could be introduce and would be widely used within three years was over ambitious. To introduce a new activity, to which there is cultural resistance, at only one level of the MOH -MCH- is unrealistic.

III. Operational Difficulties

The project selected a new group of people "nutrition organizers" (usually dietitians from within the hospital services) and trained them to teach and supervise the nurses who perform the work of the project. On the positive side this added a new group of committed, informed nutrition educators to the MOH structure; on the negative, it required them to perform a supervisory function which was outside and beyond their capabilities. They were not, authorized to supervise or manage the personnel of the centers.

The goal of the project to create nutrition cells which would establish and institutionalize nutrition education within MOH MCH has been delayed because of the non payment of incentives by the Government of Egypt. This has been a major factor in the limited success of the project.

Nurse tutors receive only two weeks training. In my opinion this is not enough to equip them with the motivation and skills necessary to make the transition from nurse to teacher.

The selection of the Nutrition Institute to perform the management and supervisory function was probably ill advised. The proper role of the Institute is research and its staff is best at performing the training and advisory function. Supervision should have been centered within the Ministry of Health, chain of command.

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