

Strengthening Rural Health Services Delivery

Grant 263-015-76

Second External Evaluation

September 16-24, 1984

Executive Summary

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Submitted: October 25, 1984

## Acknowledgments

The team would like to express their appreciation to the Ministry of Health, project staff and others who assisted the team in formulating this report. We have attempted to reflect their insights and experience in these recommendation and thank them for their participation and assistance.

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Directory of Abbreviations Used in the  
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DDCS	Diarrheal Disease Control Study
DHO	District Health Office
DNRP	Draft Nationwide Replication Plan
FP	Family Planning
GOE	Government of Egypt
HHS	Household Survey
HSR/PHC	Health Services Research in Primary Health Care
MCH	Maternal/child Health
MOH	Ministry of Health
ORT	Oral Rehydration Therapy
PACD	Project Activity Completion Date
PHC	Primary Health Care
R & D	Research and Development
SRHD	Strengthening Rural Health Delivery
TAC	Technical Advisory Committee
USAID	United States Agency for International Development
WSS	Work Sampling Survey

## Executive Summary

The strengthening Rural Health Delivery (SRHD) Project was conceived to:

1. Identify, develop and validate replicable interventions with the potential of improving rural health services and hence the population's health status; and,
2. Institutionalize the capability to conduct such applied research within the Ministry of Health (MOH).

Throughout the project, several reviews were conducted by a Technical Advisory Committee (TAC); and formal evaluations were undertaken to guide the Project's development. The present evaluation concerning the Draft Nationwide Replication Plan (DNRP) is particularly critical because it occurs at the juncture between the completion of project activities and the initiation of a self-sustaining process to improve Egypt's health services on a continuous basis.

The Evaluation Team was impressed by the enthusiasm of the project staff and their dedication to strengthening rural health services. The staff has accomplished a great deal in the past six years; however, a great deal more remains to be done. The magnitude and complexity of remaining tasks necessitates that priorities be set carefully to concentrate on activities with the greatest potential for long-term impact. It is from this perspective that the Evaluation Team offered its recommendations for the consideration of the MOH, U.S. Agency for International Development (USAID) and project staff. All parties showed interest in implementing these recommendations.

## Review Team Activities

**Conclusions.** The SRHD staff have put commendable efforts into developing and testing the various interventions intended to be replicated in Phase II and then nationwide.

The project has satisfied its mandate by developing a draft Nationwide Replication Plan (DNRP), based on available information and experience gained from Phase I of the project as well as expected population growth in the coming 15 years.

The team believes it is premature to assess the social, economic and administrative feasibility of the present plan. During Phase II, we expect that the plan will be revised and modified through more participation of communities, Governors and Directors of other projects and will be able to reflect the social, economic and technological changes currently evolving in Egypt.

The economic analysis conducted thus far, while highly commendable, is insufficient to provide a satisfactory basis for estimating the cost implications of a nationwide replication plan. The team strongly endorses the suggested cost-sharing studies which the project intends to conduct and expects greater emphasis on cost identification in Phase II.

The team believes that with some refinement and modification many of the project interventions have the potential for immediate nationwide replication. Such replication would include the prioritization of rural health activities, the use of training materials, (e.g. manuals and slide presentations), management techniques and delegation of technical responsibilities. Other interventions need further development

and testing of alternative approaches to identify those that are most cost effective. This would apply particularly to such interventions as outreach activities, where the parameters to be tested might include: the home visitor, the content and method of communicating messages, training, the scope of the visit and management and logistical support.

In many cases, it is premature or not possible to attempt to evaluate the effectiveness of many of the interventions, either singly or as a package. The interventions were not introduced into the project systematically, and many were implemented too recently to assess their effect. Thus, it is of prime importance that projects with similar activities in Egypt be screened during Phase II in order to better understand the outcome of individual interventions before national replication.

The team found that there is minimal and insufficient coordination among various projects dealing with similar activities as well as among relevant technical offices in the central ministry. This impedes the sharing of information and leads to duplication and unnecessary wasted effort and resources. This also hampers planning and the transfer of appropriate technology.

The team noticed significant differentials in levels of incentives provided by various MOH projects. This may lead to confusion of priorities, distortion of the institutional framework and adverse effects on morale, all of which affect nationwide replicability.

## Recommendations Regarding Transfer of Implementation Responsibility

While we expect the project staff will play an important role in developing plans for replicating interventions, such a process must involve the participation of a large and diversified group of responsible and concerned parties. Such parties, at a minimum, would include the executive leadership of the MOH, the governorate level, communities, planning and financing agencies and directors of other projects.

## Institutionalizing and Strengthening R & D

Conclusions. The project has demonstrated the possibility of conducting research to improve health services. This provides a strong potential for developing an R & D function in the MOH. However, further development and strengthening of this research capability will be required to realize fully this potential to improve health services through research. Among other things, this will require stimulating research at the local level by involving health personnel in various stages of research development, implementation, monitoring and evaluation as well as strengthening the review of research protocols and products and obtaining technical assistance in such areas as research design and data analysis. Because of competing demands, the project seems to have responded insufficiently to these TAC recommendations.

The project has accumulated a great amount of information in the form of data and experience which needs to be further analysed, interpreted and disseminated within Egypt in Arabic so

it can have the maximum impact. Subsequently, papers can be prepared for dissemination to a wider audience.

### Recommendations Regarding Priority Areas for Research

1. The team strongly recommends that the project form the nucleus of the R & D Unit within the MOH. The team is pleased that the Minister of Health endorsed this recommendation as a critical need for the MOH. This endorsement should take the form of a ministerial decree as soon as possible.
2. Such a unit, in addition to the nucleus developed by the project, needs to develop mechanisms to acquire necessary skills to conduct successful health services research on an ongoing basis. This could be accomplished by combinations of: additional training for existing staff, bringing in full- or part-time staff possessing specialized skills, e.g. economists, anthropologists, etc. and establishing relationships with existing institutions whose staff have these skills, including universities, development institutes and private consulting firms.
3. In this connection, it would be especially helpful if a Technical Research Advisory Group would be formed to advise on various aspects of development and management of research. Mechanisms must be established for the adequate scientific review of research protocols prior to their implementation. Also, mechanisms must be established to involve various experts in the analysis, interpretation and presentation of results.
4. An appropriate mechanism should be established to stimulate and support health services research at the local level.
5. Given the importance of FP services to improved maternal and child health, we recommend that the project should give urgent attention to analysis of the impact of its current interventions and to testing ways to improve access to and the quality of FP services in rural areas.
6. We recommend that the project employ local consultants supplemented, when necessary, by expatriates to undertake the further analysis and preparation of appropriate reports, research papers and information documents. More efforts should be devoted to dissemination of information using available channels, such as special issues of existing journals, seminars, workshops, etc.
7. Staff should review various interventions developed

during Phase I to identify those which should be tested for nationwide replication in Phase II. These selected interventions should be tested and evaluated as to their cost effectiveness, either singly or as packages, as appropriate. Of particular importance during Phase II will be the testing and evaluation of the mechanisms by which replication will be achieved, e.g. training of master trainers who will train Phase II trainers and be a resource for training in connection with eventual national replication.

8. Given the importance of the identification of costs and the experimentation of feasible mechanisms for cost sharing, we recommend that the project give much higher priority than appears to be planned to measuring costs (either in LE or real resource units) and testing cost-sharing mechanisms. This will require reallocation of project resources to meet this need. More attention should be paid to macro-economic impacts of nationwide replication.

#### Project Outcomes

At the end of the project, the Evaluation Team anticipates that the following will be accomplished.

1. Screen and assess interventions developed by SRHD and other related projects. This may be accomplished by the establishment of a screening committee composed of related projects, the central ministry and relevant technical experts and submission of recommendations to an appropriate MOH entity for consideration and possible adoption.
2. Establish a systematic process for transferring implementation responsibility to the central ministry, governorate and other projects.
3. Consolidate and strengthen the SRHD Unit as a permanent entity in the MOH for applied research and development.
  - Obtain ministerial decree for permanent status as a unit for applied research and development;
  - Strengthen the unit's capacity to define, design and implement research activities, including the necessary supporting data analysis and management.
4. Carry out high priority research activities.
  - Carry out appropriate pre- and post-performance evaluations in Phase II districts;

- Initiate new research activities in priority areas:

Cost Sharing Studies  
Family Planning (FP) Services  
Home Visiting Program

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## Introduction

### Project Support

The Strengthening Rural Health Delivery (SRHD) Project (263-0015) was designed to contribute to a sectoral goal of improving the health status of the Egyptian population and reducing population growth through improved family planning (FP) services. Specifically, the project has two purposes:

- to identify, develop and validate a replicable and effective means to strengthen the rural health delivery program; and,
- to institutionalize the SRHD Project office in the MOH to be responsible for health services research in primary health care (HSR/PHC).

The project is supported jointly by the Government of Egypt (GOE) and a grant from the U.S. Agency for International Development (USAID). It was initiated on April 5, 1978, one and a half years after the signing of a grant agreement on September 30, 1976 providing \$1.8 million and LE 100,000. Subsequent amendments to the project paper and the grant agreement have raised the total life-of-project funding to \$14.9 million from USAID and LE 29.23 million as the GOE contribution. The project activity completion date (FACD) has been extended to May 1, 1986.

The USAID financed grant has provided vehicles, commodities, long- and short-term training, local consultants and evaluation. It has also supported meetings of an expert Technical Advisory Committee (TAC) and long- and short-term technical services under a contract with Westinghouse Health Systems.

The GOE contribution has included staff of the SRHD Unit, supervisory, training and health facility personnel, training

centers and vehicle maintenance workshops, office space and health facilities. The GOE has also assumed increasing financial responsibility for fees paid to local consultants and incentives for all levels of project and participating health facility personnel. Currently, according to project reports, the GOE pays all incentives to project and health system personnel.

The project is developing ways to strengthen rural health services. Important components of the project include the strengthening of the maternal/child health and family planning (MCH/FP) health education programs; the expansion of a home visiting program by nursing staff; delegation of increased responsibility to nursing staff; improved systems of supervision and monitoring; development of a program of pre-service and in-service training for physicians, nurses and sanitarians; development of an incentive program linked to performance and supply of vehicles and commodities to rural health facilities.

Originally, the project introduced these interventions in four test districts in four governorates - Assiut, Beheira, Dakhaleya and Fayoum. In 1981, project interventions were expanded to six additional districts to cover a total of 232 health facilities (60 rural health units and 172 rural health centers) covering an estimated population of 2.1 million. The project now plans to expand the coverage of these interventions to an additional ten districts within the same four governorates. In addition, discussions are underway to extend certain activities to the Suez Canal Governorates in cooperation with the Suez Canal University's Faculty of Medicine.

## Project Evaluation

In addition to reviews by the TAC, the SRHD Project has had two formal evaluations. In 1981, an evaluation team headed by Dr. Eugene Boostrum found that although there had been significant accomplishments, there were delays in most areas of project implementation and data processing and analysis. The team also found that there were major differences between the stated project objectives in the project paper and the activities approved in the implementation plan. Following the recommendations of the evaluation, the project paper and the grant agreement were amended to reflect more realistic objectives.

This, the second formal project evaluation, occurs at a critical juncture in the project. Much of the work of developing and field testing interventions has been carried out. Decisions are pending on further testing in an expanded geographic area and ultimate national replication. In addition, while MOH support is expected to continue, external financing is scheduled to end in 18 months. Therefore, the Evaluation Team was asked to:

- review the project's outputs in relation to the logical framework and;
- assess the technical, economic and social feasibility of the Draft Nationwide Replication Plan (DNRP).

(See Scope of Work, Appendix A.)

## Present Evaluation Activities

The team assembled on Sunday, September 16, 1984 at the project offices and was welcomed by Dr. Hammamy, Project Director. Following adoption of the review agenda (see Appendix

E), the team listened to critical aspects of nationwide replication presented by project staff. The team then began its review. Each team member read the DNRP written by project staff and was provided with access to all SRHD Project documents (listed in the DNRP).

Throughout their assessment, the team members benefited from frank and open discussions with Dr. Nagaty, the Project Executive Director, and project staff. In a field trip to Beheira, the team members divided and visited two health facilities that have been involved with the project and one that had no involvement. In addition, on September 22, the team met with key staff of other projects working in related areas and central MOH Departments. Also on September 22, the team leader, accompanied by other members and project staff, presented the team's conclusions and key recommendations to the Minister of Health. He accepted the findings and endorsed several key recommendations. On September 23, the team presented its conclusions and recommendations to USAID and the project staff.

#### Project Status

The logical framework presented in the project paper provides for a rapid review of the project, its components and expected accomplishments. Project staff provided the team with a summary logical framework with their report of current status (Appendix D). The comments provided below relate only to project status considerations.

In general, the project has, in almost all respects, accomplished its targeted output tasks as set forth in the

project paper amendment of 1983. It is remarkable to note, particularly in light of the 1981 Evaluation findings, that the project is now on schedule. Tremendous progress has been made in developing and testing interventions, processing and analyzing data and developing and implementing training programs.

Nonetheless, in several cases more will need to be done in order to realize expected satisfactory end of project status results; and in other cases, the project appears to have interpreted its mandate too ambitiously. These cases are noted below.

#### Sector Goal

Comment. The reported project status is too ambitious and implies a misconception of the role of the project with regard to the stated goal for the health sector. Specifically, the project cannot be expected to accomplish the sector goal of increasing life expectancy, achieving national population goals and achieving reductions in mortality and morbidity for the nation as a whole. The evaluation of the SRHD contribution should not be viewed, even in an ultimate sense, as "contingent on completion of nationwide replication. . ." Rather, the contribution of the project should be judged in terms of its conduct of specific activities and processes that contribute to the broad outcomes of many and diverse sectoral interventions originating from a variety of sources. The project has already made many contributions to developing and initiating processes which are already being replicated nationwide, with modification, by other projects and implementing agencies. Examples are the expansion of the use of oral rehydration therapy (ORT) in a

national diarrheal disease control program and the adoption of training elements into governorate pre-service training for rural physicians.

**Project purposes:**

- To identify, develop, validate, and replicate an effective means to strengthen the rural health delivery program.

**Status:**

- Health services delivery Replication Plan written;
- Analysis of tests is due in April of 1986.

**Comment.** A draft plan has been written for testing in Phase II districts. The following chapter discusses the plan and its components in detail.

- To institutionalize the SRHD Project office as one of the two units of the General Administration of Rural Health Services. The SRHD office will be responsible for operational research.

**MOH FY 1985/86 budget allocation:**

**Comment.** Appreciable budget allocation has been made.

Project reports indicate that responsibility for incentives, as an example, have been assumed fully by the GOE. It is not clear whether or not this will continue to adequately support the project in completing its tasks, to continue to attract and retain adequate staff and to carry out an aggressive HSR/PHC Program.

- MOH approval of the organizational plan, including SRHD, is responsible for applied research.

**Comment.** The plan approved by Ministerial Decree 569/72 is a laudable step in this direction. However, action taken to date does not appear to establish the SRHD project as a nucleus of a permanent HSR/PHC Unit within the MOH with full authority to

continue operational testing and applied research essential to the appropriate evaluation and planning of rural health services delivery of PHC. The team draws attention to the support given to establishing the project as a permanent HSR/PHC Unit for the purposes cited by His Excellency the Minister of Health on September 22, 1984. Appropriate follow-up should be taken immediately to establish permanent status and thereby institutionalize the unit together with appropriate staff and budgetary support as soon as possible.

Project outputs:

- Develop, test and replicate two integrated service packages.

Comment. The DNRP includes such program plans, "based on results (data) from on-going Health Information Systems." However, because of the timing and duration of various interventions, it is observed that in several cases the results of data analysis are not definitive with respect to the effectiveness of elements of program packages. Therefore, continued development and testing is strongly recommended. In addition, assessments must be made of developments and experiences gained by other projects.

- Developed services tested and analysed with written plans and standing orders ready for obstetric care, respiratory/eye infections, FP and environmental health.

Comment. Developed services tested, results written, written plan and standing orders ready for antenatal and postnatal care components of MCH as of November 1983 and respiratory/eye infections as of January, 1983. FP manuals have been developed, staff trained and tests will be completed in

connection with Household Survey # 7, scheduled for mid-1985. Environmental health was planned and implemented in September 1983 but was not formally evaluated.

**Cost analysis studies:** A major study area was completed July 31, 1984. Additional studies of more accurate cost identification are strongly recommended (see Conclusions and Recommendations) as well as project contemplated cost-sharing studies. Greater priority and resources should be accorded to activities in this area due to the importance of cost considerations to eventual replication of interventions, regardless of source of origin.

**Job descriptions:** Job descriptions have been completed for physicians and sanitarians. These await assessment. Guidelines were completed for expanding the functions for laboratory assistants as of March 1984. Testing of these is pending. Although major project efforts have been directed toward the delegation of technical tasks to nurses, the logical framework does not mention new job descriptions or the issuance of standing orders.

An illustrative implementation schedule for replication is included in Appendix D.

## Comments on the Draft Nationwide Replication Plan

### The Project

Although the replication of project interventions will be discussed individually for each intervention, the following general comments can be made concerning the project as a whole.

- There have been no data presented, apart from the Diarrheal Disease Control Study (DDCS), which demonstrate impact on infant mortality, morbidity or crude birth rates;
- Results on process indicators are ambiguous. The project appears to have had a generally positive impact, especially on the increased focus of nurses' activities on child care. At the same time, data from the Work Sampling Survey (WSS) suggest that, in comparison to unimplemented facilities, the percentage of outreach time spent by personnel on preventive activities is lower and time spent on administrative requirements higher while the absolute figures showed that the productive time spent on outreach activities and administrative requirements is higher in implemented than in non-implemented areas. On the other hand, the staff attendance level is higher in implemented than in non-implemented regions. One must interpret these results with care. Nonetheless, such indications may give reason for caution in recommending nationwide replication;
- There has been, throughout the project, a lack of significant attention to economic analysis of specific programs, e.g., tetanus, as well as to the economic analysis of program alternatives. It is clear that the project leaders are keenly interested in these matters, and some initial efforts have been made toward preliminary economic assessments and the development of a proposal for Phase II to look at cost-sharing alternatives. These interests and initial efforts should be greatly amplified in view of the importance of the economic considerations facing the MOH in assessing the replicability of this program and other alternatives;

### The Draft Nationwide Replication Plan

General comments. The project presented its general proposal for a DNRP based on its own experience and research concerning specific interventions, most of which have been conducted during the period that the project has been in

existence. Some of the interventions proposed, however, are new and would be tested during the remaining 18-month period of the project. The DNRP also sketched a process by which the activities of other projects would be involved or harnessed to the task of nationwide replication.

The Evaluation Team's general reactions to the proposed DNRP and process of implementation will be briefly summarized in this section. The immediately following section presents specific comments on each of the individual interventions proposed in the DNRP. General reactions may be discussed under three headings: appropriate mix of intervention packages, appropriateness of assumptions regarding interventions and the proposed process of implementation.

Appropriateness of mix of intervention packages. Many of the proposed interventions were only partially tested during the course of the project. For example, while the relationship between the availability and use of vehicles and the level of home visiting was established in connection with regression analysis, further analysis of this relationship was not undertaken. Many questions can be posed in this connection. Did vehicles increase incentives to undertake home visiting? Did the use of vehicles improve supervision and thereby increase the level of home visits? Did the use of vehicles alter the content and/or the quality of home visiting? Is there evidence that vehicles may be expected to maintain or sustain a higher volume of home visiting in the future?

These are important issues in connection with nationwide replication given the relatively high expense of vehicles and

importance attached to outreach in general and to home visiting in particular in the SRHS Project approach.

Appropriateness of assumptions. As perceived by the team, the DNRP appears to be predicated on the basis of the following assumptions:

- That GOE resources directed to rural health will be substantially increased, both to keep pace with the growing population and to augment the current program with the additional capital investment and recurrent costs required by the plan;
- That the MOH will continue its commitments to provide manpower, drugs and commodities to the rural health system, at least at current levels, in relation to population size;
- That the plan can be further developed and implemented in a way which responds to evolving administrative roles and responsibilities of local government and which reflects socioeconomic changes taking place in rural Egypt that may affect patterns of access, demand, disease, income and available services;
- That the incentives provided under the plan (economic, intellectual and emotional) will be sufficient to retain and motivate rural health services personnel in the context of changing working conditions, rising rural expectations, rising income and possible inflation.

It is not clear that these assumptions are valid or that serious efforts have been made to assess their accuracy. In addition, while population factors have been incorporated as suggested by the TAC, other factors should be given at least some subjective consideration. What are the probable trends in institutional and technological change in medical practice, administrative decentralization and decision-making, transportation, communication, levels and distribution of income, education and literacy which will occur in Egypt by the Year 2000; and what effect will these have on the appropriateness of

the proposed replication? What macroeconomic cost implications are involved in a scaling-up of the project's interventions nationwide? Can the necessary number of trainers be recruited at the level of incentives provided by the project currently, even allowing for general inflation? Would the addition of 3000 or so new vehicles constitute a sufficient increase in the demand for drivers so as to cause a significant increase in the necessary supply price of drivers, petrol, tires, etc? Numerous questions of this sort should be examined in connection with nationwide replication. To the extent that these questions are beyond the scope of the SRHD Project, the team recommends that the MOH consider them as the basis for a comprehensive national health plan.

Proposed process of implementation. The project staff's proposed use of other projects currently operating in Egypt as a vehicle for implementing replication is ingenious. However, the Evaluation Team has serious reservations that the project staff can be successful in obtaining effective cooperation from all the other projects in adopting SRHD strategies and interventions in view of the differing mandates and constraints of time and resources under which each must operate. Some of these projects are currently designing, testing and implementing interventions which are rivals to those proposed in connection with the DNRP. Does the project have the influence to change the scope and mandate of other projects and divert their resources in the manner contemplated? Is it reasonable to expect the project staff to take on the political burden of negotiating with project directors, MOH officials, governorate and district level

executives, community leaders and other technical experts, all of whom have deep-seated, vested interests and responsibilities in their respective areas? Can the project staff be expected to wrestle with these problems, continue to conduct health services delivery and HSR/PHC testing and extend the project into the remaining unimplemented areas? The judgement of the Evaluation Team is that this will not be possible. Therefore, the team has recommended a revised approach to implementation (see Appendix D) which sees the SRHD Unit participating in a screening process to review proposed interventions and which transfers implementation responsibility to those parts of the MOH with line responsibility.

#### Individual Interventions

Although the Evaluation Team could not undertake a comprehensive, in-depth analysis of the evidence supporting the replication of each individual intervention, comments and recommendations for specific interventions based on the DNRP are offered in the following section.

## Maternal and Child Health (MCH) Services

### Introduction

MCH services, prior to implementation of service interventions as a component of the SRHD Project, consisted mainly of the following five elements of primary health care (PHC) (identified DNRP, 2.2.1):

- antenatal care;
- home delivery;
- home-based post-natal care;
- curative care for children and pregnant mothers;
- examination of FP clients and distribution of contraceptives.

Implemented interventions. Four major interventions were implemented as a component of SRHD. These were chosen to address serious health problems which persisted inspite of efficient delivery of the previously available PHC services.

The interventions included:

- an active search for children with specified major health problems;
- provision for the immediate initiation of treatment for specified conditions;
- provision of referral backup at the health facility;
- health education for mothers regarding early recognition of these conditions and initial measures to take.

It was felt to be especially important to detect pregnancy early and to promote registration of all pregnant women. Also important were the immunization of the mother, maternal and child nutrition, blood pressure checks and the identification of pregnant women at risk. The home visiting program, including

health education, was an essential component of care during all stages of pregnancy, including ante-, peri- and post-natal care.

### Replication

In general, the entire MCH package has proven to be effective and should be replicated. Attention should be paid to the following during the replication:

- Health facility management should support the added responsibilities given to nurses to make initial assessment and begin therapy before consulting the physician;
- Nurses should be given a checklist along with careful training regarding when it is appropriate for her to act versus referring clients to a physician. Adequate physician backup must be provided;
- Physicians need training to accept the changed role of the nurse vis-a-vis their own responsibilities;
- Careful supervision needs to be maintained at all levels to insure that interventions are being properly implemented;
- Health education efforts should especially be directed toward the mother's early recognition of respiratory and diarrheal diseases, including initial treatment procedures and indications of when a physician should be consulted;
- Home visitors should review the immunization status of children aged 1 to 5 years;
- Nurses should be provided with essential medical equipment to support the home visiting program.

Changes in interventions package. The following changes in the proposed package of interventions should be considered:

- Should only selected topics be addressed during each home visit? As outreach efforts support a number of interventions, some invariably will be deemphasized. Thus, home visitors could be instructed to concentrate on only specific topics, such as immunizations, during one time period and to make home visits relative to another topic at another time;
- A more active participation of dayas is needed;

- Although the initial implementation of MCH interventions reportedly did not meet with community rejection, a program needs to be introduced for the more active involvement of community members, including community and religious leaders; a training program for community leaders should be initiated to mobilize their efforts in the establishment of an effective PHC system relative to maternal and child health;
- Alternative materials used in health education classes conducted at the facility and in health education efforts during home visits need to be tested;
- An ongoing evaluation needs to be conducted to test the effect of the introduction of the interventions package upon both utilization rates and various measures of the health status of the population, including morbidity rates and infant and maternal mortality rates;
- Incentives need to be reviewed and revised so that they are consistent across facilities and projects. There are gross inconsistencies at present leading to decreased efficiency and morale.

## Family Planning

### Interventions

Prior to the introduction of interventions, FP services in the rural area consisted mainly of facility-based physician consultations, the prescription of oral contraceptives, occasional IUD insertions and the limited distribution of condoms.

As the project has evolved, family planning (FP) has been integrated into the MCH-FP service package. The project prepared a draft plan for FP in October 1982 which proposed a systematic approach to strengthening this component of rural health services by expanding the nurse's role in educating and motivating women through the home visiting program, training physicians in the project area in IUD insertion and reinforcing them with an IUD team which would travel from facility to facility. This plan has been developed into a comprehensive training program for the health facility staff. Under the project, facility staff have been trained, and FP motivation and education is an integral part of the home visiting program.

Household Survey # 7 surveyed FP attitudes and practices in implemented and unimplemented districts. The data are currently being processed and will provide baseline data for the program. The other indicator of project impact is the WSS which found that 7.4 percent of nurses' outreach time was spent in FP related activities in newly implemented areas. The follow-up WSS should provide additional data on project impact. When these data are available, the effectiveness of the approach adopted can be better judged.

## Replication

In light of the DNRFP's recognition that replicating a FP component is "not a matter of choice," it is urgent that this component be strengthened significantly. The status of the plan called for in the grant agreement needs to be clarified and agreed upon so that this component can be adequately and immediately addressed in the final eighteen months of the project.

The following factors should be considered during implementation efforts.

- The context of FP has changed nationwide. What was a topic to be approached more cautiously at the beginning of the project is now discussed openly - by the press, by the President; FP has received support at the highest governmental levels and constitutes an important component of national health policy;
- The approach adopted does not intend to affect the availability of services, the quality of services, contraceptive resupply, users' access to services. These objectives all seem to be consistent with a health-based approach to FP;
- The approach adopted relies on the nurse through education, counseling and screening as the main change agent under the supervision of the physician who is designated by the MOH as the main provider of service.
- A more active program to train physicians in IUD insertion is needed;
- The feasibility of training nurses for behavioral modification and IUD insertion should be investigated;
- A more intensive training in behavioral modification is recommended for nurses;
- Home visitors should encourage initial acceptors of contraceptives to visit the health facility; repeat users can be distributed contraceptives during the home visit;
- Women who discontinue the use of contraceptives need to be identified; the cause of their discontinuation should be investigated, and the problem should be resolved were

possible. The husband's role should not be ignored in this process;

- Audio-visual materials should be utilized to the extent possible in health education efforts; health education should be directed toward groups as well as toward individuals;
- Post-partum cases should receive special attention as these are most easily motivated to practice contraception;
- An active orientation program is needed for community and religious leaders to sensitize them to available services and program objectives;
- Nutrition education is particularly important for pregnant and lactating mothers;
- Early detection and correction of anemic conditions has proven effective and should be continued;
- Services should be targeted for both those women who desire birth spacing and for those who have completed their families.

## Environmental Sanitation

### Evidence of Effective Areas

**Background.** Environmental factors are of great significance in connection with their adverse consequences on the health status of rural dwellers in Egypt. The project's focus in this area has been to improve the health education skills and practices of doctors and nurses and to attempt to assist in improving water and sanitation conditions at the community level, principally helping in the activities of sanitarians working out of rural health facilities. Emphasis has been placed on the training of rural health staff team members, upgrading and improving supervision and on educating rural populations through outreach activities.

**Major constraints and problems.** Major constraints in this area include the following:

- Doctors have a pronounced curative care bias and thus are not very willing to provide leadership in health promotion and illness prevention;
- There is a high level of illiteracy, particularly among women in rural areas;
- The role of sanitarians was found to be ill-defined, and supervision was poor;
- Sanitarians have multiple responsibilities (inspection of markets, public water distribution points, insect and rodent control, etc). Education/outreach activities are included in their range of activities and responsibilities, but in practice, they receive a lower priority as they compete with other more attractive areas like water and food sanitation.

**Outcomes.** The motivation of sanitarians to maintain family folders, conduct outreach health education activities, promote ORT and FP and promote family hygiene needs more attention.

Revision of approach to be tested prior to replication. The following revisions are being implemented in connection with testing during Phase II.

- Recognition that environmental sanitation responsibilities must necessarily be shared by doctors and nurses as well as by sanitarians and that primary emphasis must be placed on health education at the community level through outreach activities;
- Recognition that management of environmental conditions is a long-term investment and that the benefits will occur slowly, but steadily over time in the future;
- Evaluation of educational kits (including magnetic boards) with the necessity of exposing people to health education messages repeatedly before significant changes can be expected to take place in a significant fashion.

#### Considerations for Replication

This is a crucial component of any integrated health services delivery package. The project has not in the past, and is not in the future, treating this component as a single, free-standing intervention, but rather has been attempting to develop a strategy for broad intervention which is still evolving. While little documentation supports strong success to date, Phase II will provide opportunities to test the revised strategy that the project has developed. It is the judgement of this revision that the project strategy is feasible with emphasis on health education as the means to motivate communities to improve environmental conditions. This component should be worth its investment costs as a candidate for replication. Community participation is crucial in this area. It may also be possible to reinforce community-level efforts in health education with mass media.

## Increasing Consumer Knowledge and Participation

Community-focused efforts in the project have sought to improve the communities' knowledge and practices in health through basic, one-to-one contacts in the home visiting program and in-facility instruction. This has been supported with a series of visual learning materials built around basic health messages developed by the project. Project data from the household surveys suggest that efforts have been successful to increase consumer awareness of such basic areas as ORT and FP. However, the DDCS indicates that actual behavioral change has proven to be difficult to achieve and, if dependent upon nurse-patient contacts alone, requires repeated and frequent visits to achieve desired changes.

At the same time, data have not been collected to assess the effectiveness of the VLS as a health education tool. The DNRP reports a concern that the materials may be underutilized. Because of this concern, the project is currently developing self-instruction manuals in health education for use by all staff.

Before recommending national adoption of these materials, careful understanding of the extent of and reasons for underutilization is needed. An evaluation of the VLS could draw on the experience of SRHD as well as that of several other projects which adopted them. It would also afford an opportunity to look at the complementarity of messages developed by the SRHD Project and other projects (PDP, POF II, NDDCP, etc.) for facilities and mass media use.

Fostering community participation in a broader sense has not been attempted in the SRHD Project. The studies planned on cost-sharing in the next 18 months will be one important step. Greater community involvement should be a future focus of the HSR/PHC Unit. This will depend upon broadening the disciplinary base of the staff to include anthropologists, economists and related specialists.

Other projects may have experiences to offer in approaches to developing community participation. This should be explored during the process of screening interventions and Phase II testing.

## Medical Curative Services

The SRHD Project recognized the need to significantly strengthen prevailing medical practices at rural health facilities. An early success of the project was seeing elements of its orientation program for physicians adopted for use in the regular program of pre-service training for all physicians entering rural service. The project has recommended several critical areas for nationwide replication:

1. Improved management of common diseases, including diarrheal diseases and acute respiratory infection.
2. Increased emphasis and training for the management of pregnancy and birth.
3. Expanded laboratory capability, including the training of laboratory technicians and provision of basic laboratory equipment.

Replication of these activities is recommended based largely on recognition of need and project experience rather than on any specific study of the intervention's impact upon physician performance or other such indicator. There is little question that it is desirable to establish such priorities in rural health services and to reinforce them with effective in-service training. It is difficult, however, to assess the effect on laboratory capabilities, in particular, without more direct evidence. This is especially so since so little of the training has in fact been directed toward laboratory technicians (an estimated 1.5% in project reports).

Because of possible costs and other considerations, certain elements have not been included in the DNRP, notably distribution of drugs and obstetric care upgrading. Project studies and staff

indicate that these remain areas of concern. It is certainly desirable that project experience in these areas be discussed in the process of screening interventions.

One cannot expect efforts such as these to correct for basic deficiencies in the training and education of professional staff. For this reason, the Evaluation Team endorses the project's efforts to see its findings and products institutionalized in medical and technical school curricula. The adoption of the maternal care unit in the curriculum of the secondary technical nurse training schools is one important step. The team also endorses project cooperation with medical faculties, such as at Assiut and Suez Canal Universities. Such cooperation can have a synergistic effect giving the medical schools expanded contact with and opportunities for research on basic health problems and allowing the rural health personnel to have opportunities for continuing medical education.

## Outreach

### Program Description and Objectives

The outreach program should be viewed as a vehicle which brings concepts, principles and techniques of modern medicine from rural health facilities to homes and which collects health and health-related information necessary for health facilities to identify, prioritize, plan, manage and evaluate various health-related issues in the community. It can also be effectively used to endow families with skills necessary for improving self-help skills.

The activities of outreach workers often involve working as a change agent to deliver health education messages and training to improve self-help skills, either at the health facility or in the client's home. The outreach worker also acts as a recording agent in developing and extending the rural health information system.

Although outreach is a component of many of the project interventions, two outreach efforts have been specifically identified:

- home visiting
- school visiting

Home visiting. As described in the Replication Plan, home visiting includes "health education (on nutrition, FP, environmental hygiene), recognition and early management of childhood disorders, case-finding and 'treatment-on-the-spot' and/or referral." The program involves physicians, nurses and sanitarians, although the bulk of the visits were made by nurses. Nurses were expected to make about 285 visits per month.

Home visiting programs have been proven to be effective elsewhere in Egypt, especially for FP programs. The home visiting program implemented in 1982 in Ishaqua and Arimone is an excellent example of such a program which has been evaluated in a well-designed, carefully controlled study (see Health Services Researcher, September 1984). However, further thought should be given to the expected number of nurse visits, the personnel responsible for visits and the increase of home visits being made outside of the project implementation area.

The home visiting project in Ishaqua and Arimone established criteria of 100 home visits per month. The average number of visits actually made by each nurse per month ranged from 106 to 118, somewhat above the 100 expected. This varied considerably by month, with the greatest number of visits reported from March through October and very few visits reported for December when floods occurred. Therefore, it would appear that a goal of 285 visits per month may be too ambitious. The number of expected visits per month should be established on a community-by-community basis by the directors of individual health units in conjunction with home visiting personnel as distances to be covered, available transportation and other travel conditions vary by region. Perhaps seasonal criteria should be established.

The specific personnel utilized for home visits should be examined. Specifically, the role of sanitarians should be questioned in future project efforts. Their use thus far has proven to be unsatisfactory as housewives often refuse them entry when their husbands are absent. The use of village leaders has

been proven effective in Egypt for home visiting programs in conjunction with FP. Perhaps their increased use for FP and non-technical health education should be investigated, especially in view of the lack of qualified nurses willing to work in rural areas.

Lastly, the dramatic increase in the number of home visits made outside of the project implementation area should be studied. Factors may be identified which are of value in motivating home visiting personnel.

School visiting. As a health-oriented intervention, the school visiting program has been found to be largely effective. Service providers have expressed satisfaction with the program, and the community response has been overwhelmingly positive. Perhaps efforts can be made to link the two outreach programs, if this is not already being done, by utilizing home visits to follow-up on problems identified during school visits and to foster community support of the school visiting program.

#### Replication

The home visiting program requires thorough screening and evaluation of its various components in light of home visiting programs implemented in various other projects. Consideration should be given to the establishment of more realistic, region-specific performance criteria, an investigation of the most effective personnel for the program with a view toward decreasing the workload of nurses where non-technical visitors can be utilized and study of the increase of nurse visits being made outside the demonstration area.

The school visiting program should be reoriented to reinforce educational achievement. Efforts can also be made to integrate the two outreach programs.

## Training

### Objectives

The stated SRHD training objectives are as follows:

- to assure a high level of knowledge and skills needed to identify and respond correctly to the health needs of the population;
- to enable health care providers at all levels to evaluate accurately the results of their efforts;
- to strengthen sections and departments within the MOH to assure logistic support for the project, to facilitate evaluation and analysis of SRHD Project results; and eventually to improve planning, implementation and evaluation of the entire rural health service delivery program.

The second two objectives should really be considered sub-objectives. They are important only as they contribute to the ultimate goal of responding to the health needs of the population.

### Description of the Intervention

Toward these objectives, the following three types of training programs were held:

- pre-implementation orientation and training
- in-service training
- special training

### Replication

Before replication is considered, whether or not the stated objectives are being met needs to be more completely investigated. Evidence suggests that the two sub-objectives are being supported by pre-implementation orientation and in-service training. However, objective data are not reported in the

Replication Plan to enable a determination to be made as to whether or not the major objective, to increase knowledge and skills which will eventually lead to an improvement in the health status of the community, is being met. Such data should be collected and evaluated, to guide further development and replication of special training programs.

The team finds that the pre-implementation and in-service training programs emphasize the development of technical know-how and skills with less than optimal attention to behavioral inputs, which are crucial to the development of health team members as change agents rather than technocrats.

Presently, a didactic approach is deemphasized. Innovative training methods are lacking, e.g. the use of role playing in supervision training. The use of standardized modules and audio-visual materials encourages the trainer to ignore local differences.

Local area instructors should be used where possible. In instances where an expatriate consultant/trainer is utilized, they should work in conjunction with an Egyptian instructor to minimize language barriers. Supervisors should play an active role in the development of course materials.

Special training often involves very costly training in the United States. Its role should be closely examined within the context of the overall training objectives. Only physicians and especially health administrators have benefited from this program as nurses have not been able to meet the English requirements for study in the United States. Thus, those personnel who are largely responsible for the direct care of rural patients have

not been able to participate in this special training. Also, a portion of those trained (5 of 29) have not returned to Egypt, even though their training has been completed. The DNRP does not, because of its cost, recommend replication of overseas training. A university-based training program could be developed utilizing Egyptian professors to conduct training in Arabic to reduce the language barrier which limits those who can attend. This program should include course content which has only been available abroad thus far but with elements specific to Egypt.

In addition, both long- and short-term special training programs tend to be in the areas of administration and program research/evaluation rather than in technical skills development. Courses are additionally restricted to those encompassed by the Public Health Concept rather than Health Development which is of wider scope and more appropriate to a developing country such as Egypt.

Training facilities. The feasibility of adding an annex or additional floor to an already existing health center in each district to be used as a training center should be studied as an alternative to the construction of a separate training facility. Additional staff are needed for training. An investigation should be made of whether or not temporary living arrangements are necessary for those enrolled in long-term training.

## Supervision and Motivation

### Evidence of Effectiveness

Major constraints and problems. Supervision problems encountered in rural health service delivery include the following:

- There tends to exist little by way of supervision of governorate-level personnel or district-level counterparts due to personal sensitivities related to promotional patterns traditionally based on seniority;
- Periodic visits tend to be irregular, and procedures tend to be non-uniform;
- Little linkage tends to exist between supervision and training; supervisory focus was on detection or policing with supervisors selected from ranks based on seniority.

Staff motivation problems include the following:

- Low salaries;
- Poor working conditions and support;
- Limited opportunities to earn more money, low or negative "real" salary increments and limited career development opportunities such as in-country or overseas training.

Government salaries have fallen in real terms since 1974.

Housing was made available to doctors and nurses at government expense as early as 1942 and is recognized as representing an increasingly important complement to wages and salaries as housing costs have increased enormously in the last decade or so due to inflation. In 1975, a law was passed allowing doctors to maintain a private practice under specified conditions and rates. However, this law may have only legitimized what was already happening. Other sorts of job motivation particular to health workers, other than doctors, are very scarce.

General approach to supervision. Specific project

interventions include the following:

- Strengthening district and governorate supervisory competency through training and motivation;
- Development of an objective, systematic, responsive and supportive approach to supervision;
- Standardization of supervisory procedures;
- Introduction of supervisory procedures;
- Institutionalization of performance-related incentive payments to facility technical staff;
- Provision of critical equipment and supplies;
- Expansion of staff roles and responsibilities;
- Institutionalization of in-service training, based on needs, and deficiencies detected through supervision;
- Establishment of opportunities for post-graduate training in public health;
- Regular central project staff supervisory field visits, to serve as role models for district governorate supervisors.

Outcomes and second initiative. Physician leadership

ability, as measured by SF studies and reports over the interval 1980 - 1983, showed measurable improvement. However, improvement appeared to be esoteric. Greatest gains were recorded in the case of nurses, particularly in the areas of home visiting and immunizations. Sanitarians' administrative duties were below expectations, but coverage of places showed some improvements. Laboratory assistant administrative and technical performance was high in the beginning and made only modest improvement over the period.

A formal review of the MOH/SRHD sponsored supervisory system was initiated in late 1983, with the aid of external expertise in

a new attempt to overcome perceived constraints to effective supervision. Findings show that constraints within the system include:

- Misunderstanding at different levels of the concept and scope of supervision;
- Sensitivity (related to seniority) to supervision between intermediate levels and the resulting weaknesses in supervision of supervisors;
- "Inspectory" attitude of some supervisors;
- "Novelty" of the district structure within the National Health System;
- Supervisory staff shortages at the district and governorate levels;
- Underutilization of effective, uniform and consistent supervisory practices;
- Motivational factors, including the nature of the linkages between performance, evaluation and incentives.

The resulting proposed modifications, based on an affirmative and supportive approach to supervision, provide for a dynamic and didactic interaction between supervisor and supervised, centered on joint supervisor and facility team analysis of staff achievement of defined community health improvement and productivity goals (indicators). This focus, and its linkage to different types of incentives, make up the core of the system. Main features of the revised system include:

- Categorical (staff member) supervisory modules (instruments) which evaluate facility activities (vs. individual) on the basis of guidelines and criteria (in manuals being produced) for staff observation, interview, and in-service training during each visit;
- Routine programmed supervisory visits scheduled bimonthly or monthly in facilities with poor performance;
- Discussion of results of the visit with the facility physician and written feedback in the facility supervisory log before completing each visit;

- District staff (team) interpretation, comparison, discussion of results; feedback to facilities; and use of information for programming subsequent activities. Awarding of incentives and presentation of positive results to other facilities;
- Governorate supervisor facility visits as an indirect check on the quality of district-level supervision;
- Institutionalized remedial training programs (using diverse modalities) to correct detected knowledge and skills deficiencies common to several facilities;
- Development of district quarterly reports (based on supervisory modules and facility monthly reports) to be forwarded to governorate headquarters;
- Analysis of district reports by the FFED, feedback to the District Health Office (DHO), and forwarding of these to the central level (MOH Rural Health Department/SRHD) to be used for evaluation of the supervisory system as a whole;
- Feedback and follow-up from the central level;
- A plan to upgrade supervisor capabilities through continuing education, with emphasis on teaching, counseling and analytical skills;
- The central supervisory role of the physician, particularly at the facility (physician to other staff members) and DHO (District Health Officer to district categorical supervisors);
- The initiation of formal training in supervision for facility directors (physicians);
- Use of updated job descriptions for each staff member as the basis for supervisory manuals (currently being prepared);
- The development of a collaborative mechanism between Governorate Health Offices (headquarters) and DHO for strengthening the quality of supervision and linkages between categorical supervisors at each of these levels;
- Revised selection criteria for new supervisors, which emphasize competency and experience over seniority.

## Incentives

Initially, incentives were set which were based on low individual performance ratings (LE 15 per quarter if 80% or

higher score on SF) and group health facility performance (an extra LE 15 if each staff member scored 60% or higher). Later the system was modified to require a minimum individual score of 70 percent, and incentive payment was determined by multiplying the score times LE 30. This provided a range from LE 21 to LE 30 per quarter. These incentives represent roughly 10 - 17 percent of total wages and salaries of staff with 5 years experience and 6 -11 percent of earnings of staff with 10 years or more of service as compared to an estimated 15.8 percent increase in consumer prices. In FY 1982/83, fixed incentives ranging from 50 percent (district) to 200 percent (central level) of base salaries unrelated to performance were paid to supervisors.

Outcomes. In general, the entire package of incentives, including provision of equipment and supplies, transport and increased training and monetary incentives, appears to have resulted in increased outreach activities, increased facility utilization, greater productive use of time in general and reduction in physician turnover. However, the linkages are not clear, and the differential effects have not been estimated. Yet improvements are evident.

Consideration for replication. Some efforts should be made to determine the differential effects of each of these interventions. This could be done by simple questionnaire techniques, including asking staff to express which of these incentive components is most important. Consideration should be given to upgrading the skills of supervisors. Incentives appear to be important, but the effects are rapidly being eroded by

inflation; and as suggested, the true motivational value of actual incentive payments should be assessed. The results of SF reports show that discipline and management are very important problems in Egypt. Project efforts and progress should be incorporated in plans for replication, but processes should be designed to continue to assess results and to allow further testing and implementation in the future even after replication nationwide. Consumer and community perceptions might reasonably be incorporated into supervisory assessments and used as a basis for incentives at some point in the future.

## Program Evaluation and Information

### Description of Intervention

As used in the DNRP, the concept of "program evaluation and information" appears to refer to data collected for use in operational decision-making, i.e. for guiding operations rather than assessing their value (which is encompassed by HSR/PIC). The project intervention appears to be composed of six activities, designed to accomplish six objectives. The project executive director reports their interrelationships to be as shown:

### Interrelationships between Interventions and Components

(DNRP, p. 2.46 - Program Goals and Information)

Evaluation Objectives	Components					
	1 HHS	2 SF	3 WSS	4 RDF	5 CAS	6 Spot Eval.
- Identify:						
- needs	+			+		
- shortcomings	+	+	+			+
- Permit project response to identify problems	+	+				
- Monitor progress and costs	+	+		+	+	
- Standardize evaluation criteria		+		+		+
- Generate staff experience	C*	All	C	All	C	C/M*
- Promote positive attitudes		+	+	+		+

C = Central Level

M = Middle Level

## Evidence for Effectiveness

The DNRP reports that two activities were not be carried out (the rapid data feedback system, and spot evaluation). Three others were mentioned in connection with the research - the cost analysis, HHS and WSS. The remaining activity was supervisory feedback. This activity seems to relate to the management of personnel rather than to programmatic decision-making.

## Replicability

Certain specific activities were tested, but other components will be tested prior to replication. However, as the DNRP recognises, information is needed to manage health services delivery. Project staff say that the HHS is not replicable because it is an expensive, centrally executed activity. This fact notwithstanding, periodic use of this data collection mechanism would seem appropriate to nutrition services. Practical facility records could be the source of information useful for funding operations. To be effective, such systems should be useful at the rural level. This may mean educating field staff on how to use information to manage activities. Project staff mentioned several records in use or in development that might be useful for this purpose: family/MCH records and physicians' logs. A set of such simple records should be designed and tested to see the extent to which they can be and are used in practice and with what effect.

Different types of information are needed at the various administrative levels. The volume of information should be kept

to a minimum; collect only what can be used for inter-relationships between interventions and components (2/2/8, DNRP, pp. 2-46).

## Logistics

### Transportation

Vehicle procurement and allocation. Transportation has been identified as one of the major constraints on effective rural health services delivery. The provision of transportation and maintenance facilities was a major objective of the SRHD Project. A variety of problems were encountered with regard to vehicles and maintenance which would need to be resolved before replication of this component of the SRHD Project.

Of the 258 vehicles which were supplied to the project, 140 were vans and 118 were jeeps. The vans were found to be too large to negotiate village streets, and their fuel consumption was found to be unacceptably high. Mechanical difficulties were experienced with the 4-wheel drive vehicles, especially with transmissions, and they were also found to be high in fuel consumption.

The availability of alternative vehicles should be investigated, especially four-cylinder vehicles. A portion of these vehicles should be four-wheel drive, and all must be suitable for conversion to an ambulance for the transfer of patients. Vehicles must carry basic emergency medical equipment, including a stretcher and an oxygen cylinder.

In addition, practices in the allocation of vehicles have been too generous. Vehicle logs show extremely low utilization. It may be possible for some facilities within one to two kilometers from each other to share one vehicle. Also, outreach accounted for 61 percent of vehicle use; and many clients are

within a reasonable walking distance of the facility. Thus, a "reasonable walking distance" for home visitors should be determined.

If vehicles are recommended for replication, the MOH has indicated that they will not be able to pay the cost of new capital but will only be able to fund transportation operation.

Vehicle maintenance and operations. Vehicle maintenance capability must be developed within each governorate, and spare parts must be made available. The lack of spare parts has proven to be a major problem. In addition, a mobile mechanic should be available who can make on-the-spot repairs where possible.

The salary scale for drivers must be reviewed, and an adequate incentives program for drivers must be established. The feasibility of training a member of the non-professional clinic staff as a driver should be investigated where a governmental driver is not available.

#### Drugs and Commodities

Drugs and other commodities are supplied by the GOE. The current list of drugs supplied to rural facilities on an on-going basis is adequate. The drug program emphasizes rehydration solution, medicines for acute respiratory infections, vaccines for immunization, antihelminthics and contraceptives. All these must be permanently and regularly supplied. This program component should be replicated following screening and incorporation of the experience of other projects.

The DNRP does not specify the commodities required for replication. The project has had extensive experience with

selection and procurement of basic commodities which should be utilized in planning the commodity list for nationwide replication.

## Health Services Research in Primary Health Care

### Description of Intervention

The project intervention appears to have been the accretion of research experience by project staff. The DNRP states these objectives:

- institutionalization of research capability;
- scientific testing of interventions; and,
- involvement of rural health staff in research (p. 2.58)

### Evidence for Effectiveness

Project staff report six professionals involved in research. The executive director reports that these professionals spend less than 50 percent of their time engaged in HSR/PHC activities, unless one conceives of the entire project as HSR/PHC. Five of the six professionals have MPH training; one is working toward a DPH. Six studies are reported in support of the research capability and scientific testing of interventions. They are: DDOS, AR I, neonatal tetanus control, CAS, WSS and HHS. To date, there appears to have been little involvement of field staff in HSR/PHC except for data collection of centrally identified and designed projects.

### Replicability

The institutionalization and improvement of HSR/PHC capability is vital to any system designed to improve health services delivery. Such research represents the most solid measures of providing information for improving practices, programs and policies. Any replication plan should encompass a

test of the extent to which HSR/PHC interest and activity can be permitted locally and suggested locally and centrally.

Particularly critical is the need to find ways of disseminating valid, relevant research results to field staff who could use the findings in practice to improve health services and the health status of the population.

## Institutionalizing and Strengthening HSR/PHC Activities and Products at Central and Local Levels

As originally conceived, a major objective of the SRHD Project was to institutionalize the capability to conduct HSR/PHC within the MOH. While in their role of researchers and scientists, members of the Evaluation Team have been critical of some of the research efforts of the SRHD Project. They recognise that throughout the course of the project, the staff has had to cope with a severe tension of being responsible for health services delivery, research, planning and health services delivery system implementation. The responsibility of such a broad range of activities has undoubtedly detracted from the precision of the HSR/PHC that has been conducted in the past. Undertaking such research is difficult under the best of circumstances, and the context of rural Egypt is far from the best of circumstances. Problems have been further compounded by the necessary assumption of project responsibilities in the areas of planning and implementation.

It is the Evaluation Team's judgement that the project has demonstrated unparalleled promise in a demonstrated capacity to conduct HSR/PHC in the context of rural Egypt. If freed-up from the burdens of planning and implementation, especially in regard to nationwide replication, the project can concentrate on improving its capacity in conducting HSR/PHC in rural areas during the remaining 18 months of the project. It can also play a very big role in assessing the experience and research of other projects in the interest of promoting recommendations concerning

the best combinations of interventions that would be viable candidates for replication in the future. The team feels that the DNRP is an important first step in initiating the replication process and that the project has completed its mandate in presenting its draft plan. However, during the next 18 months, the project should give less effort to "managing" replication and greater effort to developing its unique capabilities as Egypt's only viable and existing governmental agency for conducting HSR/PHC on behalf of the rural health system.

This section will make recommendations concerning those courses of action which the Evaluation Team believes are of high priority in working toward this overall objective, identify technical assistance needs and discuss the relationships among research, planning and implementation.

#### Recommendations

By the end of 18 months, the Evaluation Team recommends that project staff accomplish the following:

1. Obtain a ministerial decree establishing permanent status as a unit for HSR/PHC and development.
2. Establish a Technical, Scientific Advisory Group to assist in guiding all aspects of the unit's work. Such a group should consist of technical experts, both inside and outside of the MOH, including universities and private consulting groups.
3. Establish a systematic way of identifying needed research projects and obtaining comments on the potential value of the information each would generate to improving health service interventions and/or delivery and health status. Such process should at least involve central MOH offices and governorate levels.
4. Establish appropriate mechanisms to support high priority research projects (identified through the above process). Such mechanisms must include the review of

written protocols for scientific, technical adequacy prior to their implementation. The purposes of this review is to:

- Identify projects that meet minimum criteria for implementation; and,
  - Provide helpful suggestions to authors of those that do not so that they may remedy flaws. Research projects could be conducted by project staff, under contract with universities or private consulting groups. In the case of contracted research, a project staff member should monitor progress and/or participate, as appropriate, and with appropriate consultant experts, assure scientific, technical adequacy of implementation to assess the quality of research products. At the conclusion of a research project, the scientific, technical adequacy of products (reports) should be assessed by appropriate experts to substantiate the scientific supportability of conclusions (to ensure that only interventions with scientifically substantiated conclusions are recommended for dissemination or replication).
5. Develop a pilot project to stimulate interest in and support of HSR/PHC among physicians (and other staff, if appropriate) at district and facility levels. Such a project may include testing the contribution of HSR/PHC in improving physician job satisfaction, incentives to develop HSR/PHC ideas and prizes to reward good research.
  6. Produce a summary and other reports describing what has been learned from the project, including results of research and other studies. Production of such reports will necessarily require strengthening data processing, analysis, and interpretation capabilities through a combination of: staff training; a network of expert consultants both inside and outside of the MOH, including expatriate consultants, if necessary; and contracting with universities; private consulting groups, etc.
  7. Disseminate, in Arabic, information resulting from project research and experience and submit for publication in peer-review journals at least two papers. Dissemination of information, in Arabic, may be through newsletters, workshops, special issues of existing journals or other means. At least ten distinct dissemination activities should have been completed.
  8. Identify two or three interventions in need of further development and testing based on what has been learned to date (e.g., alternatives to increase access to IUD insertion services or alternative approaches to

outreach), design the interventions, developed scientifically adequate protocols to test their cost-effectiveness (including expert review) and implement at least one of the protocols.

9. Expand SRHD staff, full- or part-time to include expertise in anthropology and economics.
10. Design appropriate data collection and evaluation systems to support implementation and replication activities.

#### Technical Assistance Needs

In addition, as indicated above, the SRHD Unit should husband its own resources during the next 18 months and allocate them against priority activities. The project should make increased use of external resources to support its activities.

During the evaluation of the DNRP, Evaluation Team members had an opportunity to read reports produced by project staff, interview staff members and review project documents based on this information. The team has identified five areas in which the project would likely benefit from technical assistance. In the first instance, such technical assistance should be sought from local experts, for two principal reasons:

- to eliminate the language barrier; and,
- to establish relationships with experts whose proximity would permit frequent, sustained interaction with project staff.

Nevertheless, when necessary expatriate consultants may be required. In either case, the patterns of consultation should ultimately lead to improved capability among project staff, rather than merely solving immediate problems without strengthening capabilities. Further, when appropriate, project

staff should be trained to provide others with the technical assistance that they themselves have received.

In all cases, consultants should have actual experience in working in the area, as well as formal qualifications and experience with technical assistance, the object of which is to strengthen institutional capability.

The six technical assistance areas are:

1. Research design and analysis, including delineation of questions, selection of design, analysis of collected data, and interpretation and presentation of results.
2. Cost analysis, including methods of measuring and allocating costs, the use of real resources and standard costs as surrogate measures and the macroeconomic aspects of costs and costing.
3. Operations research in FP services to assist in designing tests of strengthened FP services.
4. Data base management, including data collection, entry, editing, storage, and indexing both as for process and quality assurance.
5. Statistical programming; specifically use of BMDP package including file structure, and selection of and training in the use of other package programs.
6. Research administration, including the management of a HSR/PHC Unit (staff assignments, supervision, incentives, etc.), procedures for setting priorities, identifying and evaluating project proposals, providing technical assistance and research support, assisting the scientific adequacy of protocols, assessing and disseminating results and planning and budgeting.

#### Research Versus Planning and Implementation

As has been discussed, the creation of a comprehensive HSR/PHC Unit within the MOH will strengthen the overall management and planning capability within the Ministry.

Management of health services includes several functions. Chief among them are research, planning and implementation. In

general, managers concentrate on implementation giving perfunctory attention to planning, often neglecting research.

However, the effectiveness of research and planning is much strengthened if each manager both understands the roles of research and of planning health services delivery and participates in them. Presently, many managers believe that planning and research are outside of management. Indeed, many do not understand the relevance of research to management. Further, often lacking research skills, managers view research as esthetic, something best left to others if it is to be done at all. Nevertheless, research is critical to successful health services delivery.

Decisions must be made in practice - from patient care to national policy - whether or not solid information exists. Today, most practitioners and other decision-makers must rely on their experience and assumptions in making decisions. Research can provide solid information for use in decision-making: it informs choices among alternatives. To be effective, research must be valid; to be useful, relevant; and to be used, it must be accessible to the decision-maker when needed. Thus, emphasis must be placed on systematic identification of relevant research questions - the answers to which would make a difference - and dissemination of research results in a form that potential users can understand, as well as the generation of valid research results.

Research is critical planning at the highest and finest levels of an organization - planning; setting objectives and practices; delineating steps by which resources will be

acquired, allocated and used to achieve objectives within policy constraints; and motivating people to implement and update plans appropriately. For example, research can provide information to select among competing interventions on the basis of their cost-effectiveness, means of delivery, and incentives to ensure optimum delivery. This type of information can be gained from anticipatory research (anticipating information needs) or from evaluation research (providing information from practice that may be useful for its replication or subsequent decisions).

Even though all managers should understand and participate in planning and research, each has a set of distinct skills. Further, at higher organizational levels, each plays a different but complementary role in health services delivery. Moreover, to be effective, each function must concentrate its resources on achieving its mission and not dissipate them on activities that it is ill equipped to discharge thereby jeopardizing its credibility and further hampering its ability to fulfill its vital function. As functions become differentiated within an organization, mechanisms must be established to achieve coordination to ensure that complementary parts of the whole work together to achieve primary objectives. Setting up appropriate channels of communication for the productive exchange of information inside and outside of the organization is also part of management and subject to research (to find the most effective ways of communicating), planning (to establish the mechanisms) and implementation (to effect them).

## Appendix A

### SRHD Project: Evaluation Scope of Work

#### Objectives

As a member of an evaluation team, the consultant will evaluate the Strengthening Rural Health Delivery Project's Draft Nationwide Replication Plan (DNRP), which is the culmination of the last six years of project effort.

#### Scope of Work

Evaluation Team activity will concentrate fundamentally on the review of key project elements and on evaluation of the feasibility of the DNRP. For both tasks, the key document will be the DNRP, but additional documents will be made available as required by team members assigned specific responsibilities.

Project review, based mainly on analysis included in the DNRP, will center on:

1. Project inputs, outputs and their relationship to project purpose (1982 Log Frame).
2. SRHD documentation of project results.
3. Description/definition of measurable improvements in health services delivery.

Assessment of the DNRP will concentrate on :

1. Technical, administrative, financial and social feasibility of the plan, based on SRHD experience and related programs.
2. Evaluation of proposed strategies for testing the plan.
3. The recommendation of appropriate changes to the proposed DNRP.

## Reports

A final copy of the evaluation report will be the responsibility of the evaluation team leader. Team members will be responsible for writing parts of the final report. Scheduling and topics will be at the direction of the team leader.

## Team Composition

Dr. Wafik Hassouna, Team Leader  
Dr. Helmi Bermawi, Ministry of Health, A.R.E.  
Dr. Peter G. Goldschmidt, Veterans Administration  
Dr. James Jeffers, Westinghouse Health Systems  
Dr. Pamela R. Johnson, AID/Washington

## Term of Assignment

The effective date of assignment is September 14, 1984, with an estimated completion date of September 25, 1984. Services are required in Cairo beginning September 16, 1984 through September 24, 1984.

## Appendix B

### Chronology of Evaluation Team Activities

Sunday, September 16, 1984

Morning:

- Welcome by Dr. Hammamy, Project Director;
- Adoption of agenda;
- Presentation and discussions with project staff regarding critical aspects of nationwide replication.

Afternoon:

- Initial review.

Monday, September 17, 1984

- Evaluation Team examination of documents, discussions with individual project staff members and subsequent discussions among team members.

Tuesday, September 18, 1984

- Field trip to Beheira; the team divided to visit two health facilities that have been involved with the project and recombined to visit one that had not been involved.

Wednesday, September 19, 1984

- Evaluation Team examination of documents, discussions with individual project staff members and subsequent discussions among team members.

Thursday, September 20, 1984

- Evaluation Team discussion of findings and recommendations;
- Discussion of findings with Dr. Nagaty, Executive Project Director.

Friday, September 21, 1984

- Each team member drafted assigned report sections.

Saturday, September 22, 1984

- Meetings with selected staff of other MOH Projects;
- Meeting with the Minister of Health at which the team presented its conclusions and recommendations.

Sunday, September 23, 1984

- Review of draft sections of the report;
- Presentation of conclusions and recommendations to USAID and project staff.

Monday, September 24, 1984

- Completion of the draft report.

Tuesday, September 25, 1984

- Final meeting of Evaluation Team to review and finalize report.

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## Appendix C

### SRHD Project: Log Frame Progress Summary

#### Sector Goal

To improve the health status of the Egyptian population and reduce population growth through improved FP services.

- Life expectancy increased;
- Infant mortality reduced;
- Age-specific morbidity and mortality reduced;
- National population goals achieved;
  - Birth rate;
  - General fertility rate;
- Budget allocated for improved services.

Status: Evaluation of SRHD contribution to sector goal is contingent on completion of nationwide replication and upon validation of vital statistics reporting in rural areas.

#### Project Purpose

- To identify, develop and validate a replicable and effective means to strengthen the rural health delivery program;
  - Health Service Delivery Plan written;
    - Status: As of September 11, 1984, the Health Service Delivery Plan was completed and ready for testing in Phase II districts;
  - Analyses of tests from Health Services Delivery Plan written;
    - Status: due in April of 1986;
- To institutionalize the SRHD Project office as one of the two units of the General Administration of Rural Health Services;
- MOH FY 1985/1986 Budget for SRHD allocated;

Status: Although meeting this target is not due until mid-1985, it is significant that MOH budgetary assignments covering vehicle operation, staff incentive payments; and the construction, operation and maintenance of training centers and vehicle maintenance workshops, have been effective since project inception and account for -- 571,000 in the current operating budget (FY 1984/85), in addition to the budgets administered by the Governorates for running their health services;

- MOH approved Organizational Plan, including SRHD office as responsible for applied research;

Status: This plan was approved by the Ministerial Decree 569/79 issued in November of 1979 and is reflected in the attached organogram, copy of the decree, and PIL.

#### Project Outputs

- Development, testing and replication of two integrated services packages (Community Health Service Delivery and Rural Health Delivery Program;
- Two basic, integrated packages tested in Phase I districts and developed into a program plan for testing;

Status: The DNRP includes such a program plan, based on results (data) from ongoing health information systems;

#### Project Outputs

- Developed services tested and analyzed and written plan and standing orders ready for:
  - Obstetric care;
  - Respiratory/eye infections;
  - Family planning;
  - Environmental health (community participation);

Status: Developed services tested, results written, written plan and standing orders ready for;

1. Outreach antenatal and postnatal care components of the community maternal care program as of November 1983.
2. Respiratory/eye infections as of January 1983.
3. FP outreach motivation and counseling, although the National Family Planning Program began in 1966, it

was not included in activities carried out nationwide. These interventions introduced by SRHD into project areas are pending testing through Household Survey # 9 scheduled for mid-1985.

#### 4. Environmental Health as of September 1983.

- Cost Analysis Study completed, results written, and provided;

Status: Study completed as of July 31, 1984; report submitted to AID and summary included in DNRP.

- Modified job descriptions for physicians, sanitarians and lab assistants and standing orders written;

Status:

Physicians: pending testing;

Sanitarians: completed as of September 1983;

Lab assistants: guidelines completed for expanded functions as of March 1984, and testing is pending.

Appendix D

Illustrative Implementation Schedule

	October 1984	December 1984	January 1985	January 1986	May 1986	December 1986	July 1987
SRHD Unit	Screening						
		Training trainers					
	Collect baseline information				Performance evaluation		
					Analysis and recommendations		
	Carry out applied research						
MOH	Screening				Consider recommendations and formulate budget request		
	Training						
				Implementation			
Other Proj.	Screening						
	Training						
				Implementation			
-----AID Support-----							
-----MOH Support-----							