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PD-AAT-126

ISN 44599

A.I.D. EVALUATION SUMMARY - Part I

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

A. REPORTING A.I.D. UNIT (Mission or AID/W Office) (ES #) USAID/Pakistan

B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVAL. PLAN? ☒ yes ☐ slipped ☐ ad hoc

C. EVALUATION TIMING ☒ interim ☐ final ☐ expost ☐ other

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

Project #	Project/Program Title (or title & date of evaluation report)	First PROAG or Equivalent (FY)	Most Recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)
391-0475	Primary Health Care Project	1982	9/87	20,000	13,500

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

00421D

	Action(s) Required	Name of Officer Responsible for Action	Date Action to be Completed
1.	Memorandum to Director on options for refocussing obligated project components and for obligating remaining funds within PACD limit.	Heather Goldman	March 31, 1985
2.	Letter to GOP giving deadline of Feb.26, 1985 for GOP submission of land titles for remaining two MT schools to be constructed.	Robert. W. Nachtrieb	January 11, 1985
3.	Contract for Management and Training Advisors and project staff to meet project commitment by PACD.	Heather Goldman James P. Politte	ASAP
4.	Focus on child survival	Goldman/Martin	

(Attach extra sheet if necessary.)

F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION mo. Dec day 8 year 1985

G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Signature				
Typed Name	Heather Goldman	Dr. Mushtaq Chaudhary	William D. McKinney	Eugene S. Staples
Date			1/24/85	

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

The Pakistan Primary Health Care Project (391-0475) provides $ 20 million in grant assistance over the period September 1982 - September 1987, with the objective of improving the health status of the rural population through support to the Basic Health Services (BHS) Program. The Project design emphasizes expanding the number of mid-level Medical Technicians (MTs) in selected health facilities where they would carry out clinical services and community outreach, as well as establishing a local network of volunteer community health workers (CHWs). The project also seeks to strengthen every element of management, focusing on an administrative unit of one Rural Health Center and four Basic Health Units known as an Integrated Rural Health Complex (IRHC).

Project activity to date has focused on the initial training of MTs and inservice management training of medical officers and other health personnel. The team found that there were limits to coverage and quality of health care but mechanisms were not in the BHS programs to explain why. The obstacles to improving the health of the rural population cannot be addressed by formal training alone. The CHWs, MTs, and medical officers the team interviewed could not describe their role in the delivery of priority services adequately. Except for EPI staff, realistic strategies for complete coverage of the target population were not developed. While the provision of oral rehydration therapy was mastered to a large degree by service personnel at every level, interviews and record reviews revealed examples of questionable quality and completeness of care for each of the priority services. The followup of cases was conspicuously neglected. The team separately examined 11 distinct methodologies for identifying and solving service delivery problems that could be applied by first level supervisors. Each of these appeared to be under-developed or absent, and supervisors generally lacked a defined appoach to addressing the coverage and effectiveness of the individual activities that comprise the priority services. The recurrent costs of the IRHC are unlikely to be sustained since they account for a large portion of the per capita operating budget of provincial health departments. Moreover, the wisdom of replicating this IRHC approach is further questioned because physicians are now being posted to BHUs and reported patient loads in rural health centers are strikingly low.

The chief value of the project lies rather in the insights it can produce regarding the design and implementation of a delivery system for selected services. The need for expanded documentation of service activities and their health impact suggests that the role of the Basic Health Services cells should emphasize field-based evaluation and epidemiologic analysis.

I. EVALUATION COSTS

1. Evaluation Team

Name	Affiliation	Contract number OR TDY Person Days	Contract Cost OR TDY Cost (US$)	Source of Funds
1. Dr. James Heiby	S&T/H/HS	29	$ 3,600	OE-USAID/Pak
2. Professor Carl Stevens	PRITECH	29	15,000	Project (391-0475)
3. Dr. William Guy	PRITECH	29	15,000	
4. Dr. Donald Chauls	PRITECH	20	12,000	
5. Dr. Mohsin Mubarak	PMRC	29	200	Project
6. Dr. Noor Ahmed Abbasi	UNICEF	29	[illegible]	
7. Ibrahim Beg	P&D, NWFP	12	200	Rawal Associates

2. Mission/Office Professional Staff Person Days (estimate)

1. Heather W. Goldman, HPN	40
2. Raymond S. Martin, C/HPN	20

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

1. Dr. Mushtaq Ch.	3
2. Dr. Zafar Ahmed	29

A.I.D. EVALUATION SUMMARY - Part II

SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Try not to exceed the three pages provided)

Address the following items:

- Purpose of activity or activities evaluated
- Purpose of/reason for this evaluation
- Key issues or questions addressed
- Types and quality of evidence used to assess short-term effects, trends and/or potential for impact
- Findings
- Conclusions
- Principal recommendations

Findings, Conclusions and Recommendations

1. Finding: Service delivery personnel have an incomplete understanding of the specific tasks they are expected to carry out to achieve a high degree of coverage of priority services at a defined level of quality and completeness.

   Conclusion: Uncertainty regarding the job to be done renders effective service delivery less likely, leaves supervisors with unclear criteria for assessing performance, and tends to reduce job satisfaction and morale based on self-assessment of performance, particularly in preventive services where immediate results are often undramatic.

   Recommendation: Convene a working group of project, Ministry, Department and outside experts to write detailed task descriptions for service delivery pesonnel. After appropriate administrative approvals, these should be provided to every service provider and discussed in person by the corresponding supervisor.

2. Finding: First level supervisors have a low level of understanding of methodologies for identifying and solving individual service delivery problems.

   Conclusion: If the project is unable to effectively improve the performance of individual service delivery tasks, overall improvements in service delivery and health impact are unlikely.

   Recommendation: Develop supervisory guidelines for ll problem identification and resolution methodologies and their application to the major tasks involved in each of the priority services. Disseminate these guidelines to first level supervisors and incorporate them into management workshops for these personnel. Update these materials with case study material generated by actual project material.

3. Finding: Higher levels of the supervisory hierarchy have no established techniques for assessing and improving the performance of lower level supervisors.

   Conclusion: In the absence of a concerted effort to improve performance, supervision has plateaued at a low level of effectiveness.

   Recommendation: Apply the strategy proposed for first level supervision to the specific requirements of personnel who supervise professionals that are themselves supervisors. As noted in the report, this will involve systematic sampling of actual service delivery activities for every level of the supervisory hierarchy.

4. Finding: The observations and interventions of supervisors are not recorded.

Conclusion: The systematic efforts of a complex hierarchy to improve service delivery performance are difficult to coordinate without organized information. Any opportunities for higher level supervisors to assess and intervene in problems without field travel are largely foregone in the absence of supervisory reports.

Recommendation: Develop and implement a supervisory reporting system that at a minimum summarizes the dates of evaluation and problem status of priority service delivery activities. Implement on a trial basis narrative problem-oriented supervisor reports and evaluate the feasibility of expansion. If this proves feasible, develop and test standardized categories for identifying common problems and interventions, based on the content of the narrative reports.

5. Finding: The effectiveness of individual service interventions and the degree of population coverage have not been directly assessed.

Conclusion: Policy, management, and supervisory decisions are not informed by the project's progress toward achieving its health impact objectives. Given the complexity of the decisions to be made, it is virtually certain that decisions made on an intuitive basis do not bring the delivery system to its full potential.

Recommendation: Develop and implement a variety of routine information gathering activities to describe the relationship between project services and indicators of health status, including:

a) hospital-based sentinel surveillance

b) active monthly surveillance of rural population clusters, using MTs where feasible

c) a flexible reporting system for units such as BHUs, specifying small scale special efforts to collect field data based on random household visits and followup visits to subpopulations identified through clinic patient records.

d) an expanded individual clinic record.

6. Finding: A number of elements of the project delivery system do not feature a design which appears feasible to implement to a degree which would allow achievement of project health objectives. Complete coverage of outreach activities, for example, presents difficult problems of design as well as implementation because of unresolved questions related to travel and gender roles. Other design features appear plausible, but are not based on empirical evidence that they are more cost-effective than alternatives. Implementation of suboptimal designs in a large program over a long period implies a hidden but cumulative cost in terms of resources and/or effectiveness.

Conclusion: For these issues, formally-designed but generally simple research efforts represent the most practical strategy.

Recommendation: Engage technically qualified assistance to develop an operations research capability for the project. Form province level working groups to identify priority issues for which a small research staff would develop formal proposals for official approval. Provide resources for contracted data collection where service delivery staff are unable to play this role. Offer to carry out initial descriptive studies of service delivery in the form of a systems analysis to identify delivery system problems.

7. Finding: A small number of highly capable project contract staff are available for all project activities.

Conclusion: Efforts to improve the effectiveness of service delivery should take precedence over further expansion.

Recommendation: Direct project efforts toward promising opportunities to develop insights into performance variables in

whatever approved sites make operational sense rather than focusing on expansion or on project sites that prove technically, logistically, or administratively difficult.

8. Finding: Program staff have incomplete knowledge of some technical areas, are not well informed regarding the epidemiological basis for priority services, exhibit low interest and morale in preventive compared to curative activities, and specifically complain about lack of recognition for difficult outreach work.

Conclusion: In view of the program's limited capacity to provide face-to-face training, encouragement, and recognition, written communication provides a low cost and potentially effective medium for supplementing other measures.

Recommendation: Support, if necessary though contracts, production and distribution of a professional quality periodic project bulletin in the lingua franca, including technical articles on epidemiology, public health, clinical reviews and treatment protocols, summaries of project activities, in-depth case studies of service delivery issues and recognition for outstanding personnel. Begin with interpretations of the project's baseline survey.

9. Finding: The outreach effectiveness of MTs could be improved with expanded knowledge of specific techniques for planning, implementing, and evaluating their own activities in this sphere, while the need and opportunity to apply much of their clinical training is less than originally thought.

Conclusion: It is feasible and desirable to further focus MT training on the outreach component of the project's priority services.

Recommendation: Assign a field-oriented working group to immediately schedule a series of reviews of the revision of the MT curriculum while it is under development, including selective field testing of portions, using competency-based and performance-based criteria.

10. Finding: While the planned MT training schools and hostels have a number of potential uses, the projected role and personnel requirements for MTs have changed in some provinces and not all authorities wish to proceed with construction of the full compliment.

Conclusion: There are alternative uses for these resources that more directly address project objectives of reducing morbidity and mortality, while not necessarily reducing the development of MTs.

Recommendation: AID should offer to negotiate with provincial authorities regarding the option of reprogramming funds designated for these schools to specifically support activities directed toward improving project performance.

11. Finding: The project's inservice training program for medical officers and paramedical personnel in preventive services, supervision, and clinic management has not yet developed a medium-term plan specifying objectives in terms of competency and coverage.

Conclusion: Planning other activities and assessing the effectiveness of this program is difficult without such a plan.

Recommendation: Assess training needs in terms of objectively defined skills, develop alternative strategies in relation to other activities, and negotiate a plan with provincial authorities.

12. Finding: Medical officers exhibit and openly acknowledge poor preparation in the preventive medicine, management, and supervisory skills necessary for their role in the project's priority services.

Conclusion: The central and expanding role of physicians in priority services continues to be hampered by deficiencies in their formal training, which are widely recognized.

Recommendation: Sponsor development of a model program in preventive medicine in a selected Pakistani medical school, with emphasis on priority services. Consider reinforcing this effort with support for post-graduate training in public health to expand the nation's supply of specialized expertise.

13. Finding: Numerous officials commented on the extensive overlap of the training of female MTs and of lady health visitors, while noting the greater recognition and acceptance of the LHV.

Conclusion: The role presently assigned the female MT may benefit from the obstetrical skills and public recognition accorded to LHVs.

Recommendation: Convene a panel of respected authorities in training, nursing and public health to consider the desirability of maintaining the current distinction between the female MT and the LHV.

14. Finding: Current project interventions do not include all feasible measures to reduce the health impact of closely-spaced births, early termination of breast feeding due to pregnancy, and ill-timed or unwanted births.

Conclusion: Family planning technologies could be offered by every category of project service provider.

Recommendation: Add family planning services to the project delivery system.

15. Finding At all levels of the organizational structure which manages, administers, supervises and directly delivers the basic health services, there is a striking lack of those incentives which are necessary to motivate efficient performance by those persons comprising this whole delivery system.

Conclusion The efficiency with which any organization performs depends upon various factors, e.g., the skills of the organizations' planners, managers and administrators. However, the most crucial factor is the incentive system. Unless the members of the organization have incentives to motivate efficient performance, efficient performance cannot be expected (whatever the attention given to promoting management and adminstrative skills).

Recommendation The team recognizes that this is a complex problem the solution to which may entail major structural changes in these organizations. (There is a recommendation for research on this crucial question). However, short of a full engagement with this probelem, it may be possible usefully to engage it on a more modest scale. For example, in Pakistan, the term "incentive" seems usually taken to mean a payment (or other reward) made in anticipation that it will evoke efficient performance. The term "incentive" also has another meaning -.- namely, payments (or other gains) earned as a consequence of demonstrated (and measured) efficient performance. The team recommends some field trials with incentives of this latter kind. For example, a scheme might be tried under which, say, outreach workers could earn a bonus to be paid for superior work performance which was objectively measured.

ATTACHMENTS

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

1. Evaluation Report

MISSION COMMENTS ON FULL REPO

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

Mission Comments on Evaluation

1. Mission will assist GOP to understand why utlization rates of health centers low if requested.

2. Although the role of the Medical Technician (MT) is changing, construction of MT schools will go ahead because of AID's commitment and GOP reaffirmation that schools needed for training paramedics and inservice training.

3. Mission exploring with provincial health departments possibilities for decentralized operations research on management and supervision systems and field-based evaluation of health impact of selected services. Project objectives will be scaled down to maintain minimum commitment with Basic Health Services Cell, MOH.

4. Mission can use information generated by monitoring and evaluation and the lessons learned from the operations research to select one or two specific child survival interventions and support the delivery of these services through whatever mechanisms work: public or private.

N.B.
This form and the text of the evaluation report have been discussed with Dr. Mushtaq Chaudhary, the GOP Project Director for the Primary Health Care Project. He has declined to sign the form because he says that his signature implies that he agrees not only to the action decisions but also all the conclusions and recommendations. He however provided no written comments.

XD-AAT-126-A

ISN 44601

REPORT OF THE MID-TERM EVALUATION TEAM
PAKISTAN PRIMARY HEALTH CARE PROJECT
(391-0475)

004210

Noor Ahmad Abassi, MB, BS, DPH (I)
Ibrahim Beg, MA (Econ)
Donald Chauls, Ph.D
William D. Guy, MB, Ch B, MPH
James Heiby, MD, MPH (Team Leader)
Mohammad Monsin Mubarak, MB BS, DPH (I)
Carl M. Stevens, Ph.D

December 8, 1985

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Report of the Mid-Term Evaluation Team

A. EXECUTIVE SUMMARY

The Pakistan Primary Health Care Project (391-0475) provides $ 20 million in grant assistance over the period September 1982 - September 1987, with the objective of improving the health status of the rural population through support to the Basic Health Services Program. As described in the project paper, the project builds on the Basic Health Services Project (1977-81).

The Project design emphasizes expanding the number of mid-level Medical Technicians (MTs) in selected health facilities where they would carry out clinical services and community outreach, as well as establishing a local network of volunteer community health workers (CHWs). The project also seeks to strengthen every element of management, focusing on an administrative unit of one Rural Health Center and four Basic Health Units known as an Integrated Rural Health Complex (IRHC).

The evaluation team was impressed with Government's growing commitment to Basic Health Services and public health. The team also took note of the evident dedication of the program officials and Integrated Rural Health Complex staff. We found that exemplary progress had been made in protecting the children of Pakistan from the vaccine-preventable diseases. However, the team also found certain areas in which improvements should be made if there is to be continued progress in improving health status. Naturally in our analysis we have focussed on areas of potential improvement. We believe this focus will be most useful to the Government of Pakistan.

Department of Health officials and Ministry documents indicate that the priority services to be delivered by the project infrastructure are: 1) oral rehydration therapy, 2) expanded program of immunization (EPI), 3) passive detection and treatment of malaria, 4) nutrition monitoring and interventions, 5) family planning, 6) the clinical management of tuberculosis, and 7) treatment of pneumonia in children. The central issue of the evaluation is the extent to which project resources are supporting the concrete activities necessary to deliver this well-chosen list of services.

Project activity to date has focused on the initial training of MTs and inservice management training of medical officers and other clinical and administrative personnel. The team's overall conclusion is that there are serious obstacles to realizing the impressive health impact potential of the Basic Health Service programs that will not be addressed by formal training alone.

The CHWs, MTs, and medical officers we interviewed could describe their role in the delivery of priority services for the most part only in general or frankly vague terms. None could produce a detailed written description of precisely what they were to do. The content of educational efforts in nutrition were particularly unclear. Except for EPI staff, realistic strategies for complete coverage of the target population were not developed. While the provision of oral rehydration therapy was mastered to a large degree

by service personnel at every level, interviews and record reviews revealed examples of questionable quality and completeness of care for each of the priority services. The followup of cases was conspicuously neglected.

Isolated shortcomings are to be expected in even the best-organized program of this scale, but the team was concerned by the overall lack of mechanisms and procedures by which senior professionals could systematically identify and correct these deficiencies. The absolute level of supervisory contact is a source of concern, but the content of these visits is an independent and equally important issue. We separately examined 11 distinct methodologies for identifying and solving service delivery problems that could be applied by first level supervisors. Each of these appeared to be under-developed or absent, and supervisors generally lacked a defined approach to addressing the coverage and effectiveness of the individual activities that comprise the priority services.

Although the program includes an extensive hierarchy of supervisors, many with advanced technical training, there is a virtual absence of organized procedures for evaluating and improving the performance of lower level supervisors. A major obstacle to developing such a system is the shortage or absence of useful records describing service delivery activities and those of supervisory personnel. Management level professionals lack adequate information about what their personnel actually do and mechanisms for influencing performance on a day-to-day basis. In effect, the health impact of the program is dependent almost entirely on formal training. This training, in turn, is necessarily based chiefly on theoretical principles and experience in other programs rather than the specific experience of the program. The project has now developed a substantial and in many ways innovative service delivery experience which could be exploited not only to strengthen routine management, but also to provide training material specific to the program's needs. Exploiting this experience, however, requires information gathering and efforts to develop the supervisory system in the field that are not presently contemplated.

We believe that much of the laudable success of Pakistan's EPI effort can be attributed to such an emphasis on objective performance in both service delivery and supervision. The set of services provided by the project are, however, more complex, and the process of integrating EPI into the program requires even more detailed attention to these principles.

In addition to issues related to the implementation of priority services, the team found that certain questions of the design of the program merit attention. The basic strategy of outreach requires provision for travel. Similarly, the different constraints on male and female outreach workers appear to vary from one location to another. The project has not yet found feasible solutions to these questions which, if effectively implemented, could be expected to permit delivery of the involved services. Proven approaches to eliciting the desired health behaviors by rural communities also remain to be developed for wider implementation. Many specific details of the program's design, such as promotion of tetanus immunization for fertile age women, are not based on empirical observations that establish their effectiveness. While

this is also true of most health programs, a limited investment in comparing alternative approaches is likely to improve the long-term impact of the program. Once the project has established an effective system for monitoring and evaluating service delivery activities, such small scale comparisons could be carried out by existing program personnel, many of whom have both the ability and time for activities of this nature. The design and analysis of these comparisons would however require specialized technical support. Addressing larger design questions would require more elaborate organization, but could follow the same basic approach.

The project's focus on the IRHC as a unit of activity addresses the management span of control of the District Health Officer, which many officials continue to view as too broad for effective supervision. The team found only limited decentralization in project sites but dealing with the technical issues of supervision in more detail should clarify this issue. Management training has been most impressive in logistics, but the comparatively high budget for drugs and other operating expenses of project IRHCs renders straightforward replication of the project model problematic, given current Basic Health Service budgets. The contribution of the project's contract staff, which has been a vital element of implementation, also appears unlikely to be replicated. The chief value of the project lies rather in the insights it can produce regarding the design and implementation of a delivery system for selected services. The need for expanded documentation of service activities and their health impact suggests that the role of the Basic Health Services cells should emphasize field-based evaluation and epidemiologic analysis.

Findings, Conclusions and Recommendations

1. Finding: Service delivery personnel have an incomplete understanding of the specific tasks they are expected to carry out to achieve a high degree of coverage of priority services at a defined level of quality and completeness.

   Conclusion: Uncertainty regarding the job to be done renders effective service delivery less likely, leaves supervisors with unclear criteria for assessing performance, and tends to reduce job satisfaction and morale based on self-assessment of performance, particularly in preventive services where immediate results are often undramatic.

   Recommendation: Convene a working group of project, Ministry, Department and outside experts to write detailed task descriptions for service delivery pesonnel. After appropriate administrative approvals, these should be provided to every service provider and discussed in person by the corresponding supervisor.

2. Finding: First level supervisors have a low level of understanding of methodologies for identifying and solving individual service delivery problems.

   Conclusion: If the project is unable to effectively improve the performance of individual service delivery tasks, overall improvements in service delivery and health impact are unlikely.

Recommendation: Develop supervisory guidelines for 11 problem identification and resolution methodologies and their application to the major tasks involved in each of the priority services. Disseminate these guidelines to first level supervisors and incorporate them into management workshops for these personnel. Update these materials with case study material generated by actual project material.

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b) active monthly surveillance of rural population clusters, using MTs where feasible

c) a flexible reporting system for units such as BHUs, specifying small scale special efforts to collect field data based on random household visits and followup visits to subpopulations identified through clinic patient records.

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   Conclusion: In view of the program's limited capacity to provide face-to-face training, encouragement, and recognition, written communication provides a low cost and potentially effective medium for supplementing other measures.

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Conclusion: The central and expanding role of physicians in priority services continues to be hampered by deficiencies in their formal training, which are widely recognized.

Recommendation: Sponsor development of a model program in preventive medicine in a selected Pakistani medical school, with emphasis on priority services. Consider reinforcing this effort with support for post-graduate training in public health to expand the nation's supply of specialized expertise.

13. Finding: Numerous officials commented on the extensive overlap of the training of female MTs and of lady health visitors, while noting the greater recognition and acceptance of the LHV.

Conclusion: The role presently assigned the female MT may benefit from the obstetrical skills and public recognition accorded to LHVs.

Recommendation: Convene a panel of respected authorities in training, nursing and public health to consider the desirability of maintaining the current distinction between the female MT and the LHV.

14. Finding: Current project interventions do not include all feasible measures to reduce the health impact of closely-spaced births, early termination of breast feeding due to pregnancy, and ill-timed or unwanted births.

Conclusion: Family planning technologies could be offered by every category of project service provider.

Recommendation: Add family planning services to the project delivery system.

15. Finding At all levels of the organizational structure which manages, administers, supervises and directly delivers the basic health services, there is a striking lack of those incentives which are necessary to motivate efficient performance by those persons comprising this whole delivery system.

Conclusion The efficiency with which any organization performs depends upon various factors, e.g., the skills of the organizations' planners, managers and administrators. However, the most crucial factor is the incentive system. Unless the members of the organization have incentives to motivate efficient performance, efficient performance cannot be expected (whatever the attention given to promoting management and adminstrative skills).

Recommendation The team recognizes that this is a complex problem the solution to which may entail major structural changes in these organizations. (There is a recommendation for research on this crucial question). However, short of a full engagement with this probelem, it may be possible usefully to engage it on a more modest scale. For example, in Pakistan, the term "incentive" seems usually taken to mean a payment (or other reward) made in anticipation that it will evoke efficient performance. The term "incentive" also has another meaning - - namely, payments (or other gains) earned as a consequence of demonstrated (and measured) efficient performance. The team recommends some field trials with incentives of this latter kind. For example, a scheme might be tried under which, say, outreach workers could earn a bonus to be paid for superior work performance which was objectively measured.

B. OBSERVATIONS;

1. Background

a. Design of the Project:

The joint Government of Pakistan and USAID Primary Health Care (PHC) Project (391-0475) is designed to build upon the structure, accomplishments, and lessons learned from a previous basic health services project (391-0415) in operation from 1977 to 1981. The current PHC Project has a project life of five years, begun in 1982 and scheduled to end in 1987, with $20 million in grant funds contributed by USAID and $35.75 million in counterpart funds.

In 1977 the Government of Pakistan (GOP), recognizing the impossibility of adequately responding to the health problems in the country with a physician and hospital based system of medical (predominantly curative) care, launched a rural health program based upon a system of clinic-like organizations called integrated rural health complexes (IRHCs) and involving the use of physician extenders with preventive skills (called Medical Technicians) and other paramedics.

The IRHC concept consisted of three components: A rural health Center, to be staffed by one male and one female doctor and male and female technicians (MT); satellite basic health Units (BHU) or sub-clinics, to be staffed by one male and one female MT; and one male and one female community health worker (CHW), trained and supervised by the MTs at the related BHU and intended to serve in a catchment area village providing the referral, preventive, and basic curative health needs of the villagers.

The current PHC project's purpose is to improve the quality of and expand Primary Health Care services to the rural population by: Training and developing significant numbers of MTs and CHWs; increasing management and supervision skills at all levels of the health system, but with particular attention to staff of project site IRHCs' improving the quality of on-the-job performance of MTs and CHWs; and promoting greater community participation in health activities by an effective program.

The PHC project consists of five integrated components. The first is a management component, organized around federal and provincial advisory councils and long and short-term technical assistance. It is designed to assist the GOP to strengthen its health planning and management capability through principally two activities: the analysis and redesign of existing management policies, procedures, and practices, followed by the encouragement of the implementation of recommended improvements; and the preparation of new and revised management training curricula, training of tutors, and conduct of in-service training programs.

The second PHC project component is a training effort designed to improve the curriculum, facilities for training, the quality of the training itself, and the recruitment and retention of a greater number of medical technicians and community health workers. Improvements will be

accomplished by efforts of long and short-term technical assistance, construction of consolidated, permanent MT schools, and in-country training workshops and participant training.

The third project component addresses the need to enhance worker status, motivation, and effectiveness. It is designed to acccomplish the designed outcome by the provision of medical kits to MTs and CHWs, the implementation of a health educational campaign, and the identification and distribution of suitable transport for MTs.

The fourth component consists of research and evaluation activities consisting of: Baseline and end-of-project surveys, a double round (infant and child mortality) survey, and recurrent cost studies.

The fifth component is an accelerated expanded program of immunization (EPI). The project will provide monies for vaccines, cold storage equipment, a bacterial fermentor, and chemicals to prepare oral rehydration salts.

b. Organizational Structure of the Project

1. Role of USAID

The project paper covers all the requirements and responsibilities to be exercised and fulfilled by the USAID in full details and in accordance with the already planned schedules. In brief the role of USAID is to finance the five components and arrange respective subsidiaries.

2. Provincial and Federal Role

The responsibilities of the Federal and the Provincial governments have also been mentioned in principle in the project paper. In brief there is a National BHS Cell in Islamabad which is headed by DDG (BHS), who is also the chairman of the interprovincial coordination committee for the activities of the PHC project in the four provinces. Health being a provincial subject, an annual development programme is prepared by the provinces themselves and approval sought from the respective P&D department. The National BHS Cell is working more or less in an advisory capacity only and does not have line authority for project activities.

3. Organizational Correlation

Briefly, it may be stated that USAID through long-term advisors, the Federal Government through the National BHS Cell, and the project Directors of the provinces work largely in an advisory capacity, while line authority is exercised from the provincial Directors of Health Services.

4. Provincial Differences

As a result of provincial autonomy for health functions there are certain major differences in the working environment of

PHCP in the four provinces. Some of these are briefly mentioned below, including some that appear problematic.

a) MTs enjoy a better pay scale status in NWFP and Baluchistan as compared with other provinces.

b) The MT is being paid a conveyance allowance of Rs., 100/- pm. in Punjab while it is non-existent in other provinces.

c) In Sind a non-practice allowance is not paid to the doctors posted to rural areas (where private medical practice opportunities do not exist).

d) Rural area allowance for medical officers appears to be available at some places while not at others.

e) The need to provide rural housing facilities is viewed differently by the authorities in various provinces.

f) The preparation of health budgets for approval is subject to different local pressures and constraints.

g) Dropout rates between entering training and posting are different for MTs in various provinces. NWFP exercises a bond of 3 years service or payment of Rs. 10,000/- and the other provinces have a two year bond.

h) In NWFP senior doctors are being posted as ADHOs with a positive impact on project performance. It is junior doctors or recent graduates who are posted as ADHO in other provinces.

i) At some places malaria microscopists have been posted at IRHCs along with a laboratory technician, whereas at others a lab technician or a microscopist are alone. There may also be some centres without any of the two categories. A microscopist after training in the examination of blood, urine and stools and a laboratory technician after training in malariology may be declared equivalent for both malaria and other routine examinations.

c. Targets and Achievements

1. General Project Outputs

The following outputs have been produced:

a) The original Federal Advisory Council has been replaced by an interprovincial coordinating committee which is functioning effectively. All four provinces are duly represented by the Director Health Services and the Project Director on this

committee which is chaired by the DDG(BHS), Health. Four provincial steering committees have also been formed and are functioning.

b) Annual provincial operational PHC plans (PC-1) are being prepared and approved accordingly.

c) Longterm technical assistance is being effectively provided by expatriate and Pakistani advisors/specialists in the fields of management and training. As regards short term technical assistance, the training courses and workshops have been behind the schedule mainly due to procedural delays. Similarly, foreign scholarships have not been availed because of procedural delays and delays in receiving nominations.

d) curriculum revision for MT training is still under process.

e) The baseline survey was completed in 1984.

f) Inspite of delays in constructing the MT training schools, a fairly large number of MTs and consequently CHWs have been trained but the number of female MTs remains grossly insufficient.

2. Construction of 13 MT schools

Achievement of this target is much behind the schedule.

a) Donation of land has been complete for all the sites except two (in NWFP and Baluchistan.)

b) Respective designs from contractors have been approved and finalised for Punjab and Sind while for other two provinces these are under process.

c) Actual construction of some of the MT training schools is expected to start early in 1986, as envisaged by the BHS Cell.

d) MT school furniture and equipment will be procured after the schools are complete.

e) Promotional materials are being provided regularly.

f) The MT supervisor motorcycles have arrived and will be handed over to the provinces.

3. Commodities Procurement

a) In addition to some items described above, the project staff vehicles, household and office equipment, MT and CHW kits and training supplies have been procured.

b) As regards the originally planned procurement of motorised bicycles for MTs the idea has been dropped.

c) No decision has been reached on transportation for non-supervisory MTs.

d) In Punjab, a conveyance allowance of Rs. 100/- p.m. is being paid to MTs.

e) Provision of conveyance to female MTs in particular remains a problem.

f) The Accelerated EPI Commodities have partly been arranged while $1.5 million remains to be programmed.

4. Financial Utilization

a) USAID:-Out of a 20 million U.S. dollar grant, only $1.873 million (9.36%) had been utlized as of September, 1985.

b) GOP Contribution:- The GOP contribution of funds towards the project could not be determined by the Team. The federal and provincial budgets are prepared separately, argued before respective P & D departments, and approved without any definite correlation with other such approvals. Various budgets also include funds from various sources. The funds are then assigned to both project and non-project facilities without separate accounting in the documents available to the team.

5. Operating of IRCHs

The Basic Health Services Cell reports a total of 55 IRHCs have been rendered operational by the end of Sept 1985 (3rd quarter), against 50 projected for 1985-86, as shown below.

Province	IRHCs to be rendered operational in year						IRHCs physically Operational on 30.9.85
	1981-83	1982-83	1983-84	1984-85	1985-86	1986-87	
Punjab	6	10	15	24	28	35	36
Sind	3	3	3	5	7	10	5
NWFP	2	4	5	9	10	14	10
Baluchistan	1	3	4	5	5	6	4
Total	12	20	27	43	50	65	55

It is obvious that Punjab has exceeded the target while Sind and Baluchistan are behind schedule for 2 and 1 IRHCs respectively.

6. Training of MTs and CHWs

The Basic Health Services Cell reports a total of 1282 (993 male and 289 female) MTs have been trained and deployed against a total requirement up to the end of project (9/87) of 1359 (804 male and 555 female). Presently 385 (sex distribution not available) MTs are under training at various places in the four provinces. AS regards CHWs, it is reported that 3316 (129 female in 3 provinces while the sex distribution of one province is not available) have completed training while 470 (359 male and 111 female) are under training against a total requirement of 6400 (3200 male and 3200 female)MTs by the end of the project.

d. Objectives of the Evaluation

The scope of work for the evaluation, reflecting the mutual interests of USAID/Islamabad and the Ministry of Health of Pakistan is attached as appendix E. The evaluation team was asked to address more than 50 distinct issues related to analyzing the accomplishments of the project, the factors underlying these accomplishments, and alternative strategies for the remainder of the project.

e. Methodology

Prior to arriving in Pakistan the four expatriate members of the evaluation team familiarized themselves with the content of the USAID Project Paper and relevant cables, as had the Pakistani members in country. In Washington, four members of the team also received orientation from the AID/ANE/TR and from executive personnel at the World Bank. Interviews was also given by USAID and PRITECH personnel who had recently returned from Pakistan.

In Pakistan the combined team spent two full days in prolonged and indepth meetings with officials of USAID, the federal Basic Health Services Cell (BHSC), the Health Planning Unit- Ministry of Planning, and the National Institute of Health in Islamabad. Following these briefings, the team divided into two groups - A and B, which spent the next ten days in field visits to the four provinces accompanied by the corresponding provincial training specialist and management analyst.

- Team A calling on provincial officials in Sind for orientation on the DOH-PHCP, and in observation visits to IRHC's, villages and Medical Technician training schools. A similar approach was followed subsequently during a five day visit to NWF Province.

- Team B- calling on provincial DOH executives in Punjab for orientation on the PHCP and in observation visits to RHCs BHUs, villages and Medical Technician training schools. This approach was repeated in Baluchistan in order to compare delivery of services in densely populated to sparsely inhabited areas.

Following return of teams A and B to Islamabad, the team members held joint debriefing sessions during which team members interchanged their impressions and observations until a consensus was achieved.

A report outline was drawn up, and writing assignments undertaken by individual members in order to compose a draft report.

The draft report was reviewed in joint sessions until a final report was agreed upon.

The executive summary/recommendations were submitted to the USAID/HPN office on 3 Dec. 1985 for distribution.

The final PHCP Evaluation Report was presented to the Ministry of Health on the afternoon of 5 Dec. 1985, and to the USAID Evaluation Committee on 8 Dec. 1985.

Despite the full cooperation of program officials and staff, the limited perspective of this relatively brief tour is obvious, particularly relative to the ambitious scale of the project and the complexity of the programs it seeks to assist. While this report will not explicitly qualify each observation and conclusion, knowledgeable observers will certainly recognize a number of gaps in the empirical basis of the evaluation. The chief value of the insights of an outside team comes through their interpretation by health professionals with a greater depth of program experience and familarity with the project's setting. The team is confident that the responsible officials we met will read this report in that light.

2. Service Delivery Activities

a. Organization:

Each IRHC is expected to serve a population of up to 50,000 in which there will be four Basic Health Units (BHU) which in themselves will serve approximately 10,000 people each.

In the integrated system a RHC is staffed by

2 Male MOs	1 Midwife (MW)
1 Female MO	1 Laboratory Assistant
2 Female MTs	1 Microscopist
2 Male MTs	1 Dispenser

Auxiliary staff

The senior MO is responsible for supervision not only of the static services at the RHC but of all the services offered by the IRHC - most of these MOs have already been given management training under the PHCP but unfortunately several have been lost to the program through transfers and the replacements have not been trained.

The senior MO being responsible for total supervision of the IRHC is required to support the outlying BHUs and their outreach work by on-site visits - some means of mechanised transportation is therefore required.

One male MT and one female MT based at the RHC are responsible for supervision of their BHU counterparts, including their outreach work, through visits to the BHUs and the villages served. For this role transportation is also needed but for the most part appears not to have been supplied.

With the surplus production of medical graduates in recent years the GOP has recruited MOs for posting to BHUs , which previously were staffed for clinical services by MTs only. The MO is expected to be superintendent of the BHU and all of the clinical and outreach services given by it - curative, promotional and preventive.

Unfortunately in training, the medical curriculum has been heavily oriented toward clinical service and MOs have not been exposed to the concept of comprehensive PHC. The MOs lack training in management and therefore have difficulty interpreting their supervisory role other than by assuming an authoritative role.

Currently there is a general uncertainty among all levels of staff at both RHCs and BHUs concerning performance of individual roles- staff often feel they were trained for one thing and required to do another. Likewise they do not know who they are responsible to or for. Some, such as the FMTs feel they have not had sufficient training in maternity for the role they are asked to perform in Maternal and Child Health Care, while physicians admit that they have no understanding of the background, training, and expected roles of their assistant staff. The male MTs are confused with their changing role since the posting of MOs to BHUs.

Recommendations:

i) Integrated Rural Health Complex (IRHC)

The senior MO (MO I) at a RHC is likely to have many duties within the static facility and is therefore unlikely to be able to give the amount of time necessary to properly supervise the outlying BHUs and their outreach program. If this responsibility were given to the second male MO (MOII) and he charged totally with the public health responsibility of promotive and preventive service, while MO I retained the overall responsibility for the IRHC, this deputisation of shared responsibility could introduce a level of quality outreach.

ii. Basic Health Unit

The majority of MOs at BHUs appear to have only sufficient clinical duties to occupy half a day of work. If the MO had access to a motorcycle he would not only be able to maintain supervision of the proposed outreach work of the MT/MPHW mobile team but on his own initiative make valuable contact visits with community leaders in the villages.

To resolve the general uncertainity of role performance, precise job descriptions are required for all categories of staff, administrative and service delivery, from the District Health Officer down to field staff at each RHC and BHU and for the anticipated role of village Community Health Workers (CHWs) and Village Health Committees.

These job descriptions will become particularly important following the government's decision to extend health outreach to the community through the formation of new mobile teams of Multiple Purpose Health Workers (MPHW) which are soon to be trained.

Although management training has been given to the majority of MO/ICs of RHCs, this in-service training should also be offered to all MOs working at RHCs and BHUs and perhaps a modified version given to all MT supervisors and male MTs who will play the role of mobile team leaders. This training, including an orientation to PHC and management, should be provided prior to posting or within three months where feasible. This will add efficiency and motivation for outreach work and help prevent the disillusionment often associated with the underutilization of MOs. These physicians presently interpret their roles as chiefly curative and lack an orientation towards public health.

The PHCP Management Advisor and the provincial management analysts have composed an Operations Manual for a BHU. Following testing in several pilot sites it would be appropriate for this to be made available to all field units, perhaps following training of BHU MOs.

Conclusion

The infrastructure and staffing for the delivery of comprehensive health services is well underway but remains deficient in assuring effective management supervision at the base. Management training has been given to DHOs and MOs in charge of IRHCs - there is now an apparent need to extend such training to the MOs at BHUs and the MMTs who will become team leaders of the mobile teams which will do community outreach.

Clear definition of roles at all levels of service delivery staff will assure efficiency in the operation of such service outreach and will do much to eliminate the current widespread frustration, through giving a sense of fulfilment resulting from job satisfaction.

b. Clinical Records:

A new Health Information System has been implemented at the IRHCs. The recently designed central OPD Register is in use both at RHCs and BHUs. For every new patient, a Male Medical Technician or Dispenser fills in the name, age, caste and sex in an outdoor chit, at the same time entering the information in the OPD Register. The patient then reports to the physician, who after carrying out a clinical examination writes on the chit the diagnosis and drugs prescribed. The patient returns to the registering place where the diagnosis and the drugs issued from the center are copied on the OPD Register against the patients' name.

The system has some gaps. It fails to provide a permanent record on a patient. If the same patient returns after a few days, a new chit will be issued, the old record having been filed or destroyed. The OPD chit does not mention any positive or negative findings of the clinical or laboratory investigations nor any reason for special care. The procedure makes it impossible to know the effectiveness of the treatment or to follow up on the progress.

At some places all the fever cases are entered as PUO while at others these cases are labled as malaria on the basis of history and clinical findings. A uniform system for arriving at diagnosis needs to be developed. Microscopists will be available at some places but it would unrealistic to expect that a blood slide of every fever patient will be taken and examined for malaria parasites. Many endemic diseases can be diagnosed with fair accuracy by careful history taking and clinical examination. The incidence of some common diseases is likely to be underestimated if the diagnosis is made dependent exclusively on laboratory findings. It would be better to slightly overestimate malaria cases than to bury the information under the classification PUO. An understanding on the labling of diseases needs to be developed for achieving a uniform reporting system.

Clinical laboratories are highly underutilised at RHCs. Average workloads of 2.5 tests in Punjab and 0.5 tests in Baluchistan per day are reported. Medical Officers need to be trained how to utilise laboratory findings for assessing health status of the people served and for knowing the effectiveness of the services provided at the center. Recent transfer of malaria programme microscopists from offices located at District Headquarters to Rural Health Centres is a step in this direction.

The outpatient register now in use would give more information if a new column is added providing the information on the drugs that are prescribed but are not available at the center which patients must then purchase from local chemists. Current practice is to enter only those drugs that are issued from the center. Combined information would define the need for procuring the drugs in short supply and would be helpful in evaluating the "short drug list" that is to be implemented soon. Similarly a new column is required for separating the repeat visits from the monthly and yearly numbers of the new patients. A column on gender is not required because the information can be recorded under the age columns by denoting M or F.

Code numbers of International Classification of Diseases as developed by WHO should be used in the Abstract Register. Eventually this would help in tabulating data at the National and International levels and ensure a uniformity all over the country.

c. <u>The Addition of Family Planning Services</u>

With the IRHC concept now in place and medical supervision available to BHU level, it would appear opportune to introduce FP services and outreach. Lady Health Visitors (LHV), Female Medical Technicians (FMTs) and Female Medical officers (FMO) now all play a role in promoting maternal-child health. Traditional Birth Attendants (TBA) have generally received some

training and are important promoters at village level. Health workers in their contacts with pregnant mothers and mothers of young children might attempt promotion of child spacing, indicating the benefits to the health of both the mother and child, of delaying births for 2 to 3 years - the concept is easily understood even in illiterate societies as 'an exhausted field produces only stunted crops."

Phase I: The initial methods of FP offered might be spermicides and the contraceptive pill. Meanwhile, for the male population the use of condoms could be promoted by the MO/BHU, the male MT during his village visits and the male CHW. Supplies of condoms/spermicides could be held by the male CHW and the female CHW/TBA in the village, while the contraceptive pill distribution would be better entrusted to the LHV/FMT/FMO, in order to ensure emphasis that the continued use of the pill from a 28-day pack is not interupted, and advice given concerning possible mid-cycle bleeding. The low dosage pills - NORIDAY and LOFEMINAL, supplied through USAID FP programs, would ensure that side effects would be minimal. This phase should be allowed to run until the concept of FP is well accepted.

Phase II: When the demand begins to arise from the community for a more permanent method of contraception, training could be offered to FMO/FMT/LHV in how to insert an intra uterine device (IUD) - as the efficacy of the Cu-T is now established and recent reports have shown that it remains effective for 5 years at least, this appears to be a good choice. Insertion of the IUD should be done at a facility where instrument sterilization and privacy can be guaranteed. It may also be feasible to expand the range of community-based FP services. This phase should be combined with ongoing promotion of the use of condoms/ spermicidals/contraceptive pills.

Phase III: At a later stage, a survey could be carried out to determine whether there is an expressed need for permanent sterilization within the community. If this appears to be socially acceptable, then medical staff would require training in the techniques - vasectomy, tubal ligation and/or laparoscopy, and provision of surgical facilities assured, such as at the RHC or District Hospital.

d. Role of the Medical Technician

Two male and two female MTs are posted at the RHC, to assume the responsibility for helping with supervision of MTs at outlying BHUs and to generally assist with the work activity, planning and day to day administration of IRHCs. At the periphery, that is at the BHU level, one male and one female medical technician are assigned for mobilizing, training, and providing continuing guidance and support to Community Health Workers(CHWs). MTs are also to work for management support and control systems such as ordering supplies and maintenance.

The basic MT training course is balanced in three phases, namely class room work, practical training in a hospital and supervised on-the-job training in a functioning rural health center. Time has shown that the emphasis has been on provision of curative care by the MTs posted at RHCs and BHUs. Functions of Medical Technicians are now redefined, breaking these into preventive and curative.

Community organisation, formation of local health committees and training of Community Health Workers is one major task of a Medical Technician. With minor exceptions, the current village level activities could be described as health system based, rather than community based. Most personnel in the health system with whom the evaluation team discussed this issue- especially those at the provincial level- believe that a CHW is and should be considered the same as any other health worker, albeit one with very limited training. This means, in essence, that CHW is perceived as someone who should take order from MTs, then implement these orders as instructed, and if CHW does not implement the orders, punitive action should be taken. The need to pay a regular salary for CHWs was emphasized by many MTs, probably reflecting an interest in better control of CHWs. Community organization and formation of local health committees in such a system is largely irrelevant, and therefore little evidence was available of MT performing this task effectively. Experience suggests that an unpaid community Health Worker will only want to work if there is some form of community understanding and interest in, and support for his work. Without a community base, a community health worker is very unlikely to succeed. The current role of health workers seems to focus on issuing instructions and is not designed to educate and advise the community, in a system where power and decision making authority rest in the community. Given the desirability of a community- based program, a major effort is needed to alter the attitudes of health officials, from MOs at BHUs and IRHCs through high level provincial officials. To do this, consideration might be given to whether a series of training activities and workshops, plus observational tours to countries where community based activities are successfully implemented would be helpful.

The task of promotion of oral rehydration through education and actual preparation and use is executed by the MTs at regular intervals. However, it could not be ascertained how far this effort succeeded in preventing diarrhoeal deaths.

Health and Nutrition education work carried out by the MTs did not appear to be effective. Feasible indicators are needed for use by the MTs to self-evaluate their effectiveness in performance of these tasks.

Although the project paper states that the MTs will train CHWs in basic preventive tasks such as weighing of children to detect malnutrition and seeking out pregnant women, and carrying out simple high risk assessment to determine which women should be referred to MTs and physicians, we found no evidence that CHWs are performing these tasks.

Female MTs are also training various numbers of TBAs. The training courses are of two types; one where the training extended over one year period and the other where the training is limited to three months. Locally developed teaching and learning aids for TBA training are obtained from UNICEF/Pakistan.

The female MTs require further training in maternity work. Their knowledge is deficient even in simple tasks like urine examination for albumin to diagnose pre-eclampsia or sugar in diabetic cases.

Curative tasks are executed by Medical Technicians at the BHUs where the medical officers are yet to be positioned. The Medical Technicians at these units are not visiting villages other than the settlements very near to the BHU. They are yet to receive the bicycles as planned in the project.

Better results could be achieved if the tasks and responsibilities of the Male and Female Medical Technicians were defined separately. For example, the Male MT could be responsible for envoirnmental sanitation, first aid, recording vital events and treatment of minor ailments and the female MT could devote her time to maternal and child health care, training of TBAs and personal hygiene. Training curricula could also focus on the relevant areas separately for males and females.

e. Community Level Activities

In order to extend the coverage of health care services, the GOP has put in place an infrastructure of facilities composed of District Hospitals, Rural Health Centres and Basic Health Units, each of which is staffed by professional, paramedical and auxiliary workers.

Realising that the concept of merely attracting the population to static facilities was not attaining the goals of the Basic Health Services, in 1982 an Accelerated Health Program was put in place which included an Expanded Program of Immunization (EPI), Oral Rehydration Therapy (ORT) and the upgraded training of Traditional Birth Attendants (TBA). These vertical services are now being incorporated into the existing PHCP.

At the launching of the PHCP in 1982 the concept of involving the community at the base in the quest for health was adopted. The intent was to stimulate community participation by the outreach of the MTs who manned the BHUs. Observation visits showed that this had not aroused initiative in the community as the MTs had met only with one or two community leaders and selected someone to serve as Community Health Worker - often this is not an indigenous person but a professional e.g. school teacher, who was seen as being qualified by education for being a leader. In this approach the community was expected to play only a passive role and nowhere was evidence seen of the people having been encouraged to develop a self-help approach to improving the community health.

The USAID/GOP Project Paper conceived the creation of an indigenous outreach worker as being the means to arouse community interest in improvement of health. The selected persons were given training by the MTs based at the BHUs i.e. the male MT trained male CHWs and the female MT trained female CHWs in each village.

The content of training was such that the CHW would be expected to

- promote improvement in personal, domestic and community hygiene through cleanliness, the removal of refuse, the

installation of pit latrines in each home, removal of insect breeding sites,

- encourage attendance of pregnant mothers and young children at BHUs for maternal and child health care (immunization and antenatal program)

- carry out growth monitoring of young children using an upper arm tape with coloured bands and using "the Road to Health" weight chart and give corrective nutrition education to mother of malnourished children.

- diagnose and treat common diseases.

- prepare and administer ORS or a home-made salt/sugar preparation for the treatment of childhood diarrhoea.

- adminster first aid.

On completion of training each CHW was to be supplied a medical kit which would allow the dispensing of chloroquine, aspirin, multivitamin and iron tablets, and containers for properly measuring the volume of water in reconstituting ORS and salt/sugar preparations. A system for replenishing kits on a regular basis is not in place.

Recommendations

(i) The community/CHWs:

The GOP appears to have dropped the concept of arousing community interest through participation in the quest for health together with the use of CHWs. Reliance for outreach is now to be placed instead on mobile teams based at BHUs which would consist of

- the male MT or Sanitary Inspector (SI)

- two MPHWs (an upgraded vaccinator and a malaria supervisor).

This team will be required to visit every village in a Union Council (the smallest administrative unit in Pakistan) once a month, spending the day in offering immunization to pregnant mothers and children under one year of age, going house to house enquiring after the health status of each family, registering new births and advising on nutrition of children, and promoting of health through hygiene and the treatment of childhood diarrhoea by ORT. The MT acting as team leader will also treat any sick cases detected e.g. malaria or TB, and advise their follow up at the BHU. Mobility will be provided to the team by bicycles as it is anticipated that the farthest village will not be farther than 7 kms from a BHU.

This approach is an extension of the health infrastructure but retains the concept that the community can do little for itself and must continue reliance/dependence on the supplied services for betterment of health. The system remains highly clinical and barely touches on community involvement through promotion of healthy habits and prevention of disease. A visit to each village once a month will achieve little if the role of CHW as a link is dropped, as it appears to be (by omission), in the "Evaluation of the Rural Health Program in Pakistan, Nov. 1984" report.

The paradox of this decision is that during field visits by evaluation team members to Punjab and Baluchistan, evidence was found that CHWs are widely in place and playing an important link in the concept of improving health. The team however would caution against emphasizing the CHWs role in curative care as this is open to many abuses through misunderstanding, and the costs of replenishing medicines to such a cadre may become astronomical.

The recommendation is made that CHWs should concentrate on promotional outreach. As a "drawing card", the female CHWs might be supplied with weighing scales and Road to Health Charts so as to monitor child growth more accurately - the coloured arm measuring tape currently in use is less effective for this purpose. A spring scale is available in which the Road to Health Chart is inserted - an illiterate CHW can simply mark with pencil where the needle touches the chart and so immediately have a visual impression of where the child's weight lies in the chart parameters. Undernourished children could then be referred to the BHU for nutritional care.

If the CHW's role is seen as one of dispensing medicines, invariably this is interpreted as meaning he/she is an extension of the DOH infrastructure of medical care - thus this results in a request for a salary.

Perhaps a name change should be considered to Community Health Volunteer and even in the field the Urdu term of 'razakar' be used, avoiding the salary implications apparently associated with the term "worker" in Pakistan.

(ii) A community program.

It is not very clear how to implement a community based program even if the atmosphere for it were to become more supportive - it is not appropriate simply to adopt another country's model. Initially, it is suggested that a working model be developed through a workshop of knowledgeable personnel, including articulate villagers, - this model might then be tried out on a small scale and improved.

A possible approach for trying out such a model might be to ask the ten training specialists and management analysts to select five villages, then these personnel assume the roles of MTs for

these villages. In the role of MTs they would frequently visit the villages to implement the activities in the plan listed below. As researchers they would record their experiences, assessing what steps the real MTs should take to implement the program successfully. During this period there should be frequent exchanges among the various management analysts/training specialists, facilitated by selected experts on community -based activities. It is not expected that a single model would evolve from this study, but that several alternative models be prepared.

On completion of the study, the results might be used to,

- develop an operations manual for the community section of the MTs work, with separate sections for male and female MTs.

- revise the curriculum for new MT trainees,

- prepare a curriculum for in-service training of existing MTs.

This approach is developed further in Appendix D.

TBAs

Traditional Birth Attendants (locally known as Dais) assist up to 90% of child births in the rural areas. A majority of the Dais have never been exposed to formal training in midwifery but have developed their skills either by working with elderly Dais or by learning through practice. Their role however, extends beyond assisting child births. They are often called upon to advise on neonatal and infant care, nutrition during pregnancy, puerperum, and feeding the newborn. Also the Dais continue to provide their services where health infrastructure is available in the cities: 70-80% of the deliveries in urban poor localities are conducted by TBAs. According to rough estimates there are 50,000 Dais practicing in the rural areas of Pakistan.

Training of Dais took a formal shape in 1957 when all the LHVs working in Rural Health Centeres were assigned the task of training two Dais every year. The training period extended over one year. Not much is known about the effectiveness of this training. In 1982, when the Accelerated Health Programme was launched, training of Dais was included as one of its three components. The target was to train 50,000 Dais in three years.

It was noted that a large number of training courses for Dais were conducted in Pakistan varying in the scope of training and the period. In order to achieve uniformity, a new curriculum was designed by a task force constituted for the purpose. The curriculum was subsequently approved by an Interprovincial Coordination Committee and was adopted for training Dais all over the country. The joint WHO/UNICEF team that reviewed the Accelerated Health Programe in Nov.-Dec, 1984 recommended that the training of TBAs should be continued to train all available stock.

In Punjab, a practicing Dai is trained over a three month period; two hours a day and two days a week. In case of new TBAs, the training period extends to one year. Training of the Dais is conducted by the FMTs or LHVs in addition to their routine duties. In Sind, training teams headed by LHVs are constituted exclusively for the purpose. The training is intensive for 15 days; five hours a day. The initial training is followed after three months by a 4 day refresher training. Follow-up data in the Sind Program seem to indicate an impact on the incidence of puerperal fever and neonatal tetanus which are markedly reduced in the deliveries conducted by the Dais after their training. In addition there has been an increase in referral of high risk pregnancies initiated by the trained Dais. Follow up activities are continuing in Sind and the practices of Dais after one year of their training are being evaluated. A retrospective study is planned during early 1986 to find out the differences in pregnancy outcomes in the pregnant women that were under care of trained or untrained Dais, selected on random basis. Conclusions of this study will be useful for improving training techniques.

Rural Communities pay for the services of the Dais either in cash or in kind. Thus the trained Dais do not consitute a financial liability for the Government, beyond providing some nominal stipend during training and a midwifery kit. They are community accepted health care providers and are easily accesible to them. Female Medical Technicians and Lady Health Visitors will continue to work under social constraints and face transport problems for visiting homes in all the villages assigned to them. Dais consitute a great potential resource that could be exploited for achieving access to women and children in the villages. The most encouraging aspect is that the Dais are willing to take the training and cooperate with the Health Infrastructure.

3. Training Programs

a) Community Health Worker (CHW)

With the idea of community outreach the PHCP conceived the role of CHW. In several areas those selected were non-indigenous school teachers while in others they were non-literate or semi-literate villagers- a study of the success of these two types - literate versus non-literate would be useful.

The CHWs are reported to have been taught by the MTs the principles of preventive health and in most cases the treatment of common diseases. Observation of these workers in place gave overall encouraging results although many had only been in place for less than six months. Training of CHWs by the MTs generally has been given on a twice weekly basis in the villages - some MTs have expressed a desire to hold this at the BHU.

MTs responsible for CHW training often lack the simplest of training aids such as posters or training books using picture depictions suitable for illiterate workers.

b) Traditional Birth Attendants (TBA)

Under the Accelerated Health Program, training for TBAs has been

conducted at RHCs and BHUs by the female MT assisted by the midwife (MW) and at some of these units by Lady Health Visitor, where these existed.

The curriculum consisted of training in:

- the antenatal care of mothers and identification of high risk cases which are to be referred to higher levels of care;
- method of conducting a clean delivery and adequate care of the nursing mother and her child;
- the benefits of prolonged breastfeeding for infants;
- the need for pregnant mothers to undergo tetanus inoculation prior to time of delivery;
- the need to submit children during their first year for the EPI series of immunizations;
- the use of ORS in the treatment of childhood diarrhoea.

On completion of training TBAs were supplied the standard maternity kit designed by UNICEF/WHO. By October 1984, 15,000 such TBAs had completed training.

Since training there generally has been no attempt to maintain contact or supervision of these TBAs. In a few cases individual FMTs have maintained contact with the TBAs and in fact continued to add to their skills by giving CHW training. Supervision of the CHW remains a responsibility of the MTs located at BHUs- it would appear logical that responsibility for supervision of the work of TBAs should fall to the FMT/MW/LHV where these exist at RHC/BHU facilities. This would ensure continued opportunities to add to initial training and correct backsliding.

c) Medical Technician

Medical technician training schools were visited in each of the provinces where opportunity occured to talk with trainees and instructors. During field trips several visits were paid to villages where MTs were under field training by their instructors. Under the current PHCP these MTs have been trained to deliver comprehensive health care in curative, preventive and promotional applications. Since 1984, the GOP has posted the surplus of medical graduates to BHUs and this now has produced a changing role for the male MTs at BHUs who to a large extent will no longer give clinical service but rather do community outreach in promotional and preventive care, including as team leader of the MPHW mobile team.

Defects have been found in the training of the MTs. An evaluation of the curriculum design was carried out in March 1984 by a consultant team from PRITECH and currently a revision is underway. There has been excessive attention given to diseases/diagnosis which are beyond the role of a MT,

whereas insufficient attention is given to preventive health with a practical community focus. The female MT program has only 2 months of maternity training. In the field many female MT's complained that they needed more maternity training for the role they are asked to play.

Attention should be given to the complaint by students and graduate MTs that all training materials are in English- two texts have been translated to Urdu viz.'Where there is No Doctor" and "Helping Health Workers Learn", but these are not always available to all trainees or all graduates. Similarly all graduates from MT schools have not been issued their own copies of the six training texts used.

MT trainers were found to be lacking in sufficient training aids e.g. audio-visual equipment, posters and training manuals.

d) Lady Health Visitor

The LHV curriculum offers nine months of maternity training, twelve months of maternal-child health care and three months of public health. A field visit was done to the LHV Public Health School, Quetta where the FMT training school is currently located. Discussion here was made with the Director of the LHV school and Dr. Sanaullah Malik, the Program Director of BHS, whether the roles of LHV and FMT might be fused and how this would affect the current training programs. The consensus was that a combined LHV/FMT course could be completed in 30 months.

The role of LHV is already widely accepted and respected by the people whereas that of FMT still carries some suspicion - it was also noted that entry qualification for the LHV course is higher and that applicants not accepted can still be accepted to the FMT course. Although an 'upgrading' in-service course was made available for LHVs to train as FMTs in 1979 in Punjab, and whereas at the beginning there were 4 times the applications than there were places, this year only one LHV candidate applied and the course is now to be terminated. In general LHVs are more satisfied with their role and additional training has not given them an increase in their salary level.

e) Multiple Purpose Health Worker (MPHW)

None of these workers were yet seen in action as training is only now underway in Punjab province.

This new cadre of MPHW described in the "Evaluation of Rural Health Programme in Pakistan, Nov. 1984" is to be formed through in-service training conducted by District Health Officers (DHO) - these have already been given Masters Training in Punjab by DOH/federal MOH. These MPHWs will be made up of the redundant vaccinators as the AHP/EPI program ends, the malaria control technicians, and the dispensers working at RHC/BHU facilities. The teams of MPHWs located at RHC/BHUs will have as team leader the male MT/Sanitary Inspector or Rural Health Inspector of the facility. Training modules have been drawn up by the MOH Special Education and Social Welfare Division to cover nutrition, malaria, diarrheal disease control, PHC and the role of the MPHW, respectively.

The foreseen role of these mobile teams of MPHWs is to take outreach services from the static units into the community.

f) Medical Officer (MO)

The medical officers staffing BHUs are generally recent graduates who have just completed their hospital house-jobs. Those interviewed in the field all declared a lack of community health training and lack of understanding of the PHCP. They also complained that they did not understand the roles of their paramedical staff viz. MT, LHV, MW and dispenser and that they required training in how to manage their unit staff and its outreach program. It is recommended that change be made in the curriculum of medical students to provide sufficient orientation in community medicine.

MOs in charge of IRHCs have now been given in-service training by the management analysts in the concepts of PHCP and management of their complexes.

a. Other Training Approaches

No evidence was seen in the field whereby a continued attempt was made to pass information from executive to field levels of staff.

It is recommended that at each provincial level a newsletter be composed at the office of the Program Director which would be sent out monthly to all BHU/RHCs in the PHCP which would be used as a means of passing new information and reinforcing previous concepts of outreach and management to the field workers. Field units could also be invited to send back reports of successes/failures and corrective resolutions re innovative approaches which might assist other field units in dealing with similar problems. Thus the newsletter would be an instrument to dispell feelings of isolation and separation. The management analyst and training specialist at each provincial level could be invited to contribute to the newsletter but should not be asked to be responsible for its production.

4. ISSUES IN SUPERVISION

a. Structure of the Supervisory system

The Basic Health Services Programme, which preceded the Primary Health Care Programme, acknowledged the importance of supervision. One of the important activities proposed for the Rural Health Centre was to provide technical and administrative supervision for all workers within its catchment area. Each RHC was to be linked with the District Health Officer (DHO) not only through the managerial control by the physicians, but also by technical supervisory relationships with district level persons in personnel, supervision, inventory control and information system management. It was, therefore, decided to develop new systems of management, supervision, and supply.

This emphasis on management and supervision was continued in the Primary Health Care Project. The Project Document acknowledges that the principle management lessons learnt from the previous BHS Project were that

(a) effective management and supervision are essential if the Primary Health Care Programme were to succeed (b) the Programme needs to be strengthened in these two areas. Consequently the first component of the proposed Primary Health Care Project was Programme Management. It was decided, inter alia, to support and strengthen the project managers and other key officials involved in the Primary Health Care System.

It is felt that the most important supervisory level of the Primary Health Care is the district level. This Project Document acknowledges this importance as under:

At the district level Medical Officers serving as District Health Officers (DHOs) and Assistant District Health Officers (ADHOs) have direct supervisory responsibility over RHCs and IRHCs, and may have direct and positive interest in promoting the further development of the Basic Health Services Programme. District hospitals which are referral centres for IRHCs are supervised by the Medical Superintendents who do not report to the DHOs or ADHOs. Medical Superintendents and DHOs both report independently to the Director(s) of Health. Consequently DHOs must co-ordinate their activities with Medical Superintendents of referral hospitals who may have higher status than the DHOs, making co-ordination difficult. Nevertheless, each IRHC is theoretically linked to a backup hospital to which patients are referred for care. Although district hospitals do not play a direct role in the Basic Health Services Programme, they serve as sites for MT training schools and for the practical hospital training in curative care for MTs.

Among the lessons learned from the evaluations of the Basic Health Services Programme was the need to strengthen management at all levels, including additional training in project and management planning, operations management (health services administration) and programme evaluation for Medical Officers posted at the district level. District Health Officers need to be actively involved in planning and implementing provincial operations. Similarly when key programme personnel are replaced the replacements should be adequately briefed on the programme's purposes and operations.

The Primary Health Care Programme proposed inservice training for Medical Officer Administrators posted at Provincial, Divisional and District levels because these officers normally lacked adequate training in operations planning and management. Similarly the Medical Officers posted at IRHCs were to be trained in the concepts and practices of rural health planning and management because it was considered necessary to develop not only knowledge and skills in this area but also the attitudes that will be conducive to the proper administration of IRHCs and the supervision of MTs.

It is surprising that inspite of the importance attached to the training of Medical Officer Administrators and Medical Officers posted at IRHCs in the Project Document of the Primary Health Care Programme the first provincial training programme was not conducted until August 1984, in NWFP, in which 23 health officers related to the Project in the province participated. At the time of the evaluation, a total of 235 health authorities had been trained in management workshops.

But training, specially of the District Health Officers, is only one facet of the problem of supervision at the district level.

The other issues are: (a) Frequency of supervisory visits; (b) Referral system; (c) Guidance and support; (d) Delegation of authority

(a) Frequency of supervisory visits:

The Health and Nutrition Section of Planning and Development Division have carried out an evaluation of Rural Health Programme in Pakistan on the basis of Sample Survey. The Evaluation Report indicates the following position of supervisory visits in 1982. (Evaluation of the Rural Health Programme in Pakistan. Health and Nutrition Section, Planning and Development Division, Government of Pakistan, November 1984, Page 78. The Report does not refer exclusively to Integrated Rural Health Complexes).

Sample size	No of patients referred to higher levels	Range of Supervisory Visits by number of Institution					
		No record	Zero	1-2	3-4	5-6	More than 6
44	No formal referral system exists.	4	4	13	14	3	6

The above table shows that in 8 out of 44 institutions no supervisory visit took place in the course of the whole year. On the other hand 9 institutions were visited more than 5 times-probably they had easy access. These details prove a singular lack of a systematic approach. It may be added that in future the RHCs and BHUs would be established in even remoter areas, these by making the supervision even more difficult, if remedial measures are not adopted in time.

But it would be too hasty to assume that the only reason for this inadequacy of supervision was lack of will to work. We should also consider the fact that the District Health officer is expected to perform multifarious functions i.e. management of the health services of the whole district, technical supervision, prevention and control of diseases, development planning and monitoring, working with the District Council and procurement of drugs and equipment. In addition he has to perform miscellaneous other duties. On the other hand the number of health institutions which he is to supervise is continuously growing. For example, at present 972 health outlets are functioning in the 13 districts of NWFP so the average number of institutions per DHO comes to about 75 but in several districts the number is for higher and consequently even more difficult to supervise. Add to this the problems relating to vehicles and POL and one can have some idea of the frustration of the District Health Officer.

b) Referral System:

The Primary Health Care Programme can only function properly if there is an adequate referral system. The importance of referral system was also acknowledged in the Basic Health Services Programme. It was found that this link is extremely weak. This fact was also highlighted in the Evaluation Report of the Planning and Development Division referred earlier. In fact no referral system can work properly without satisfactory transport facilities and improved communication between the BHUs, RHCs and Tehsil Headquarter Hospitals.

c) Guidance and Support:

One important purpose of supervisory visits by the DHOs should be to provide guidance and support to the IRHCs. It is felt that this aspect of their work needs considerable strengthening, they do not know how to supervise effectively and provide guidance and support so the supervision has limited utility. Apart from inadequate training provided to the DHOs to date the following factors need also to be taken into consideration:

i) Senior DHOs are posted as Medical Superintendents.

ii) The specialists, who have not worked in the field, can also be posted as DHOs.

d) Delegation of Authority:

The ADHOs can and do visit the IRHCs so in a way it can be said that there is delegation of authority from the DHO level to ADHO level. But the snag is that more often than not the ADHOs are junior and comparatively inexperienced persons. Thus on the one hand they have little real authority and on the other they do not have much to offer in the way of guidance and support. The following courses of action are recommended to improve the present situation:

1) An appropriate supervisory training programme should be developed.

2) All the DHOs and ADHOs be provided the requisite training.

3) Short refresher courses may be arranged at reasonable intervals.

4) When the new DHOs and ADHOs are posted they should be trained in supervision as early as possible.

5) Only senior persons should be posted as ADHOs and necessary authority should be delegated to them.

6) It should be ascertained whether the number of the ADHOs is commensurate with the requirements of the concerned districts, if not creation of additional posts may be considered. A policy decision in this matter may be taken at the Federal level in consultation with the provinces.

7) The transport and communication arrangements should be examined, especially with regard to ambulances, jeeps, POL etc.

8) Sites for the establishment of future RHCs and BHUs should be carefully selected with a view to ensuring the availability of the necessary amenities. The sites should be equally accessable to the clientele and the supervisors.

b. Problem-solving supervision

Virtually all of the officials interviewed by the evaluation team agreed that supervision is a central issue in health services in Pakistan. With the exception of EPI activities, most senior officials characterized supervision as a pervasive weakness. With a small number of encouraging exceptions, the team's field observations confirmed this impression. The term "supervision" is subject to a wide range of interpretations. For the purposes of the evaluation, we focused on the actions taken to assess and improve service delivery by any staff who are not themselves providing the service. Our interest is not limited, for example, to the frequency with which the MO/IC visits a given MT. Rather, we are also concerned with what actions he takes to improve the MT's performance, feasible interventions he may neglect, and the overall impact of different approaches. We will also discuss the costs of supervision.

Based on the Project Paper, the Sixth 5-Year Plan, and the priorities expressed by Provincial officials, this analysis will focus on selected primary health care services, particularly EPI, ORT, tuberculosis management, passive detection and treatment of malaria, family planning, and infant prenmonia. In project areas, these services are provided chiefly by medical officers, medical technicians, and community health workers. The team found a broad concensus that most of the project's potential for reducing morbidity and mortality depends on effectively providing these services.

A complex activity such as administering ORT, can be subdivided into a number of logically distinct components. The WHO treatment plan for moderate dehydration, for example, includes 17 separate components, including tasks such as showing the mother how to administer the solution and re-evaluating the ill child after 4-6 hours. Similarly, an activity like educating mothers in a given village about immunizations can be described in terms of specific items of information that are to be conveyed to a certain target population. From this perspective, the health impact of project service delivery activities represents the net effect of performing these individual, potentially measurable tasks. The relative importance of different tasks probably varies widely, but in principle, every task should have a probability of receiving supervisory attention that is greater than zero. If a given MT is ineffective in explaining the importance of the third dose of DPT and polio, the supervisory system should be capable of detecting such shortcoming and taking action to correct it. Thus, we examined the extent to which supervisors organize their visits to deal with concrete, individual service delivery tasks.

To a large degree, both service delivery personnel and supervisors appeared to lack detailed descriptions of service delivery tasks in these high priority areas. CHWs, for example, did not have a clear understanding of specific steps to take when they had identified a child with third degree malnutrition. Their MT supervisors were, in turn, handicapped by the lack of a criteria for assessing performance in

this area. We recommend a systematic effort to define high priority services comprehensively in terms of descrete, potentially observable tasks. Such definitions would, in effect, constitute a statement of how ranking officials expect to reach the goals outlined in the Sixth Plan, the Project Paper, and similar documents.

These "operational definitions" are conceptually similar to traditional job descriptions, but we believe there are important practical benefits to providing far more technical detail than normally found in job descriptions. Much of the technical information needed to define service delivery activities operationally is already available in a variety of Ministry documents, WHO publications and other sources. Particularly for educational activities, such as promoting tetanus immunization of fertile age women, it may be necessary to develop materials de novo. For the supervisory system, the central consideration is assuring the distribution of these operational definitions to the involved service delivery staff.

Any detailed description of what a given category of health personnel should do could prove unsatisfactory over time or under certain circumstances. Conveying given information about ORT may have no influence on actual use, contrary to expectations. Here, the design of the activity, in this case, the content of the educational message, should be changed. For the purposes of this discussion, however, we will consider the basic function of the supervisory system to be the implementation of whatever design is selected by policy-level officials. Our focus is on what supervisors do to cause these operationally-defined tasks to actually take place in the village or BHU.

For a given service delivery task that has been defined in objectively measurable terms, a range of performance is possible. MT followup of treated cases of infant diarrhea could, for example, take place only in a certain fraction of cases, or the content of the visits could be incomplete or contain errors. In order to simplify the variables to be described in characterizing supervision, this analysis reduces the performance of a given task to one of two categories: Either the task is carried out essentially as it was defined, or it is not, in which case a "problem" exists for which some supervisory action is indicated. Experience with this approach may indicate that describing the performance of certain tasks requires more than a simple problem/no problem classification, perhaps a quantitative scale or multiple classifications. It may prove worthwhile, for example, to distinguish different errors in educating the mother of a malnourished child. For other tasks, the threshold for unsatisfactory performance may require revision periodically, as conveying certain information on ORT to a steadily increasing proportion of the target population.

Having defined what constitutes a problem for a given service delivery task, the role of the immediate supervisor can be expressed in terms of identifying and resolving these problems. These efforts to

improve the performance of a given service delivery task can be divided into at least six distinct methodologies for identifying problems and five methodologies for resolving them.

PROBLEM IDENTIFICATION METHODOLOGIES

1. Direct Inquiry: Both service delivery personnel and supervisors themselves described attempts to identify performance problems by simply asking the MT or MO to list them. Others also examined records. None of these descriptions included references to concrete service delivery tasks such as follow-up of suspected malaria cases. Supervisors did not explain the range of problems they wished to identify or give examples of common or important problems. None of the supervisors reported being trained in interviewing techniques, despite the fact that eliciting information on a worker's own shortcomings requires some skill. Although this is a potentially rapid, cheap, and effective supervisory methodology, the team found no efforts to evaluate the supervisor's ability to identify problems through such interviews, nor were any steps taken to refine their techniques. The project appears to have given little attention to this practical supervisory skill.

2. Skill and Knowledge Evaluation: Training assessment techniques are well developed and few types of supervisory information are more accessible. Nevertheless, apart from the preparation of an ORS solution by CHWs, attempts to measure the competence of service personnel appeared to be infrequent and unsystematic. Even for the most important skills, such assessments were not documented. Despite the project's extensive investment in formal training, the supervisory system largely fails to monitor the staff's actual skills.

3. Assessment of Quality of Care: Supervisors reported few efforts to monitor the quality of the large number of service contacts carried out by minimally trained volunteers, relatively inexperienced paramedical workers and recently graduated physicians. Even allowing for the practical difficulties involved, field-level supervisors made surprisingly few attempts to directly observe service delivery. Role playing is used in MT and CHW training, but not to assess the performance of individual service providers. Supervisors did not systematically interview previously treated patients. None of the supervisors used written guidelines or checklists to identify deficiencies in specific service activities.

4. Estimation of Population Coverage: The project seeks to actively provide a number of priority services to a population that appears to be unusually well-defined. In this sense, an

unvaccinated fertile age woman or a child with diarrhea that never comes in contact with a service provider constitutes a problem. At this level of specificity, supervisory attention was virtually absent. For highly prevalent problems in this area, even a small number of random household visits by a supervisor would be revealing. Only one of the supervisors we interviewed carried out such surveillance.

5. Effectiveness of Educational Activities: Virtually everything the project is attempting to do to influence health status requires substantial behaviorial changes in the communities served. The project's emphasis on outreach and community level activities is based to a large degree on conveying information. Nevertheless, outside one IRHC, supervisor assessment of these efforts appears to be limited if not entirely absent. A few brief interviews with clients that have been contacted would allow the supervisor to estimate the actual effectiveness of these contacts.

6. Followup of Previously Identified problems: Rarely is it prudent for a supervisor to assume that a given service delivery problem was resolved by his initial intervention. Compared to other problem-identification techniques, the followup of old problems is likely to be fairly simple. None of the supervisors interviewed kept records of known problems, however, and none of the staff we interviewed mentioned followup as a specific element of supervisory visits. The project's chief intervention to reduce neonatal mortality, tetanus immunization for fertile age women, was largely unsuccessful in most of the sites we visited. Nevertheless, none of the supervisory staff had any insights into the effectiveness of specific measures to increase prevalence.

In summary, the team's impression is that first level supervisors in the project have largely neglected each of these six techniques for identifying specific performance problems. This assessment applies equally to MTs and physicians.

PROBLEM-SOLVING METHODOLOGIES

In view of the apparent dearth of organized problem identification at the level of individual, concrete service delivery tasks, weakness in problem-solving is not unexpected. None of the supervisors that we interviewed could describe a systematic approach to problem solving. The concrete details of services such as ORT are, we conclude, largely the result of formal training and individual initiative. Organized efforts to influence the content of these services or their coverage of the target population have played only a minor role in the project up to now.

1. Defining the Problem: Experience in the management of a

wide range of organizations suggests that, in some cases, it may be adequate to simply point out a specific service delivery problem. In other cases, the supervisor may also be required to explain concretely what needs to be done or demonstrate the desired activity. Persistent attention of this kind over the course of several supervisory visits may have a cumulative impact. The team found little evidence of this straightforward, relatively simple intervention. It is here that one can see most clearly the practical difficulties created by a general or vague definition of service delivery tasks. Medical technicians, for example, exhibited substantial technical knowledge of malnutrition, a major contributor to infant mortality in Pakistan. But virtually none of the MTs we talked with could outline a series of concrete steps in the community which, if carried out effectively, would demonstrably reduce malnutrition. The senior MTs and physicians that supervised them generally lacked any criteria by which to evaluate these efforts. It is understandable, therefore, that although nutritional status appears to be largely unaffected by program efforts, we could find no instance where a supervisor suggested that a certain task be carried out differently. Even for the most important service delivery activities, the project has generated little insight into the value of providing a concrete explanation of how performance could be improved, by any approach.

2. In-Service Training: If a supervisor finds that a given problem is due to the service provider's lack of skills or knowledge, training is the obvious response. As a supervisory intervention, training directed toward resolving an individual shortcoming is distinct from formal in-service workshops and standardized courses. Unlike planned courses, informal training of this kind responds to an immediate, specific problem. As a problem-solving intervention, such training also requires the supervisor to evaluate his effort. Few supervisors referred to training as a potential activity during field visits. The technical shortcomings exhibited by every category of service provider indicate that this technique is underutilized by supervisors.

3. Service Provider Motivation: The performance of service delivery tasks, such as the followup of cases of serious diarrhea, determine the impact of the project on mortality and morbidity. Nevertheless the team found virtually no incentives linked to this performance. Supervisors exhibited a remarkable degree of inexperience regarding the motivating value of verbal praise connected to performance. A number of service providers commented on this. We found no examples of symbolic awards, community or professional recognition, or promotions based on objective measures of performance carried out by supervisors. Monetary or in-kind awards for superior performance by an individual or administrative unit were also

absent. With rare exceptions, the distribution of commodities, equipment, vehicles and other administratively controlled resources was unrelated to past performance. The value of sanctions such as dismissal has been suggested by the experience of the AHP and other programs in the region. For project supervisors, even lesser sanctions were limited to instances of gross non-performance and even these rare cases were administratively difficult and subject to reversal.

The project's prospect for measurably improving health status depends primarily on preventive interventions that are themselves undramatic and not immediately rewarding. Further, carrying out these interventions necessarily involves the physical hardships of working in a rural environment as well as the psycnological difficulty of conflict with traditional behaviors. At the same time, the supervisory system has provided service delivery personnel with little reason to perform these activities effectively. The examples of professional dedication observed by the team represent primarily individual initiative. Within existing policy constraints, it is critical that the project achieve an improved understanding of how to systematically encourage the performance that is necessary for an impact on health status. (In section 8 of this report, suggested research topic K is intended to address these issues).

4. Direct Assistance: In addition to providing advice, training, and incentives, it is often feasible for the supervisor to directly carry out some of the work that is to be done. The supervisor may also assist the service providers or facilitate their work. For example, MTs indicated that they dealt directly with the leaders of communities where CHWs were working and themselves provided the same kind of health education in which they had trained the CHW. Under the best of circumstances, one might expect supervisory activities of this kind to improve service provider performance by providing an example. In addition, there may be discrete components of a given activity, such as dealing with local leaders or explaining the concept of growth velocity, that are simply beyond the capability of a given worker. This is simply a practical division of labor that often represents a sensible use of the supervisor's time.

Carried to an extreme, however, the supervisor may simply displace the service provider he is ostensibly supervising. The direct provision of services competes with alternative supervisor activities like problem identification and motivation. In a number of cases, this seemed to be the case with MTs and the CHWs they were to supervise. The MTs general unfamiliarity with supervisory techniques doubtlessly reinforced their tendency to focus on activities in which they were better trained.

5. Referral of Persistent Problems: Every primary supervisor in the project in turn reports to a second-level supervisor.

These second level supervisors were consistently more experienced and generally had more extensive technical training as well as greater administrative authority. In principle, second level supervisors are responsible for dealing with problems the primary supervisor was unable to resolve. This general arrangement, however, has not been systematically developed. First level supervisors have received no training in the criteria for these referrals. There is no supervisor reporting system to allow individual problems to be monitored and the project has provided no guidance for describing them. Not surprisingly, there has been no attempt to document or analyze the types of problems that first level supervisors could not resolve. Although the referral of difficult problems is an obvious supervisory activity, it remains to be developed for even the highest priority services of the project.

In summary, the team's impression is that the performance of service providers in the project reflects a virtual absence of organized problem-solving by first level supervisors. These supervisors appear to have received no specific training in any of the techniques we would propose are necessary to identify and resolve performance problems. We do not, however, believe that training for these personnel will by itself be adequate to address this situation. By the measures applied by the team, the second-level supervision provided to MTs and junior physicians was even less well-organized than that which they in turn provided to service providers.

6. Second Level Supervision: Although several categories of personnel in the project area have both supervisory and direct service delivery functions, this analysis will focus on their role as supervisors and the support they receive in this capacity from second level supervisors. An example of this would be the MT who supervises CHWs and is in turn supervised by a senior MT or medical officer in charge. In a number of sites we visited actual contact with the putative supervisor was minimal and project staff in effect played a supervisory role, albiet necessarily on a limited scale. Other relationships, such as that between the BHU medical officer and MTs was not clearly defined in many cases.

None of the staff in the position of second level supervisor were able to describe how they would assess the performance of a subordinate supervisor, what measures they would take to improve weak performance, or the nature of any general technical guidance they would provide: No doubt there were some beneficial results that flowed more or less naturally from contacts with a more senior professional, but these visits followed no distinctive strategy. Since first level supervisors are primarily lower ranking professionals with

little training in supervisory methodologies, it is surprising that the project provides them with so little systematic supervision.

The premise that first level supervisors must deal with individual service delivery tasks suggests the role of the second level supervisor. In his role as supervisor, for example, the MT is responsible for assuring that a given CHW includes an adequate explanation of nutritional measures along with ORT in managing cases of diarrhea. Any individual task is relatively simple and the supervisory steps necessary to identify and resolve any problems are straightforward. Taken as a whole, however, the supervisor's role is surprisingly complex. Even in much simpler programs, the total number of CHW tasks exceeds 50. (Certainly, the process of dividing service activities into component tasks involves a degree of subjective judgement, but variations in this process have relatively little impact on the analysis.) Thus, an MT who supervises five CHWs is responsible for 250 or more ongoing tasks. Further, for any given task, the MT can draw on a variety of problem identification and resolution methodologies. Clearly, the range of possible activities during a given supervisory visit is quite large. Unavoidably, the MT or any other first level supervisor can examine only a sample of service delivery tasks on a given visit. The project has, however, not provided for this limitation. None of the first level supervisors we interviewed had received any guidance regarding which service activities to examine on a given visit. This lack of guidance by second level supervisors can lead to serious omissions. One MT who had received frequent visits from his primary supervisor indicated that he would manage a severely dehydrated child with intravenous 5% dextrose, a dangerous error. There can be no doubt that his supervisor would have corrected this situation had he been aware of it. To the extent that primary supervisors can effectively influence the performance of service delivery staff, directing their attention to particular tasks is an important management decision. In this sense, the sampling guidance provided by the second level supervisor represents much of the program's potential day-to-day flexibility for allocating resources to one area rather than another - competence in the management of shock rather than latrine promotion, for example. Project managers presently lack this kind of influence.

Similarly, the team found no indication that second level supervisors specifically attempt to assess and improve the performance of primary supervisors. To evaluate the ability of the primary supervisor to identify and resolve problems in a given service task, the second level supervisor can apply any of the methodologies available to the primary supervisor

or directly observe supervisory visits. Thus, the role of the second level supervisor requires direct observation of service delivery much like the first level supervisor, but substantially less often.

It is important that the relatively small number of service activities examined by the second level supervisor adequately reflect the performance of the primary supervisor. Effective supervision of ORT services does not necessarily imply similar performance in tuberculosis. In addition, the various service delivery tasks that have been assessed by the primary supervisor fall into three distinct problem status groups from which the second level supervisor may select a subsample:

1) No problem was found, 2) a problem was found, but resolved, and 3) an active problem is present. Each category allows the second level supervisor, to evaluate problem identification by the primary supervisor, either confirming or contradicting his findings. Where a problem was identified, it is also possible to examine problem solving. Active problems present the additional opportunity to directly affect the service provider performance in a particularly difficult task.

The point of these detailed assessments is, of course, to improve the performance of the first level supervisor. Specific training is the most obvious response, but the other basic supervisory approaches such as providing motivation may prove equally useful. The relationship between the first and second level supervisors provides a paradigm for the supervision of any group of professionals who themselves have supervisory responsibilities.

In the provincial health ministries, there may be as many as eight such relationships between the policy level and the actual providers of services. The higher levels of this hierarchy include some of the most experienced and technically expert health professionals in Pakistan. Expensive specialized training and contact with outside expert consultants are largely concentrated in this group. It is therefore disturbing to conclude that the current supervisory system provides these officials with little insight into service delivery problems and little opportunity to respond effectively.

The Supervisory Information System

The project presently collects no information related to supervisory problem solving. Any serious effort to systematically supervise the concrete tasks implied by the Sixth Plan and other policy documents represents a complex challenge. Even at the District level, a conservative estimate would suggest that a supervisory hierarchy with at least four distinct levels is theoretically responsible for more than 25,000 ongoing, largely independent service delivery activities. Such a set of variables can be approached by sampling, but the various levels of

the supervisory hierarchy lack an effective sampling frame. At the local level, this could be provided by a complete listing of tasks for each service provider, indicating 1) the dates when a task was assessed by the corresponding supervisors and 2) a notation of whether or not a performance problem was found. For higher levels of the supervisory system, reports could summarize the performance of groups of providers and collapse the number of service tasks. This type of information system would be well suited to computerization. It would be prudent, of course, to subject this or any other proposed information system to a careful small scale trial prior to implementing it.

A related issue that has yet to be addressed is the extent to which it is feasible to use written supervisory supports to partially substitute for field visits. A number of ministry staff described severe limitations on the ability of supervisors to travel, reflecting shortages of transportation resources. To the extent that lower level supervisors can be trained to accurately describe the performance of service providers, higher level supervisiors may be able to advise specific actions. It may also prove feasible to develop standard categories to describe common performance problems, the evaluation technique used by the supervisor, and the nature of the supervisor's intervention. In contrast to the counts of patient contacts presently reported, supervisor reports of this nature would lend themselves to verification by higher level supervisors. Documentation of real world problems and their resolution could also be expected to facilitate the development of practical case studies and other supervisory training materials.

In recent years, the AID Bureau for Science and Technology has supported two indepth reviews of the state of the art of supervision in basic health programs. Research in this area has lagged behind relative to other components of a primary health care system. Since these reviews, the Office of Health has supported a series of studies of supervision issues through its program in operations research. Nevertheless, taken together, available research findings provide only limited guidance regarding the details of how a hierarchy of supervisory personnel can bring about the maximum health impact, considering the constraints on the health system. Relative to comparable health systems, that of Pakistan is unusually well-endowed with trained personnel and an extensive infrastructure. As discussed elsewhere in this report, available evidence suggests that increasing the health status of the population is unlikely to be effected through a dramatic expansion of general health resources. In our estimation, the most promising strategy focuses on more effective organization of the activities of existing personnel. Because of the limitations of the professional literature, most of the information needed to design an effective supervisory strategy must be generated by the program itself. Such research may be considered a capital investment that can be expected to produce health benefits far into the future. As such, this effort would be entirely within the larger objectives of the project.

<u>Recommendations:</u>

That the project make a major commitment of resources to systematically studying current supervisory practices, developing and testing alternative approaches, implementing any more cost-effective strategies that are developed, and evaluating the new supervisory system.

5. The Collection and Use of Information

A later section of this report outlines possible research and surveillance activities based on a substantial restructuring of the project. This section focuses on management activities related to information issues, and does not assume a research focus, but there are a number of common issues.

On an admittedly subjective level, discussions with service delivery staff leave one with an overall impression of a program operating blindly. Clinicians treat whoever walks through the clinic door, but have little sense of the quality and effectiveness of their ministrations and even less regarding the local health problems that do not spontaneously come to their attention. MTs and others working in public health and preventive activities express little sense of accomplishment. The psychological rewards of deaths and disease that did not occur, which can be seen only indirectly through careful measurement, remain unmeasured and invisible. With declining morale and motivation, the very real obstacles to outreach work appear insurmountable.

Ranking program officials were often aware of these intangible but important problems, but lacked tools to deal with them. A number of physicians observed that the failure to monitor quality of care probably allows questionable case management to take place unnecessarily, whatever the resource limitations of rural facilities. This in turn, they suggested, contributes to the underutilization of a costly infrastructure. And even a substantial increase in patient visits has little likelihood of measurably improving health status unless accompanied by effective community outreach.

The team will not presume to offer specific solutions to these complex problems. But we would argue that it is not organizationally possible to address them without a substantially improved base of information on what program personnel do and the health problems of the population they serve. We observed instances of successful local initiatives which suggest not only that improved use of such information is feasible, but also that it is associated with improved program effectiveness. Information is an inexpensive but seriously underutilized resource in project areas, with an impressive potential to directly affect performance.

Current project efforts in this area represent a sound and encouraging beginning which we would recommend expanding in a number of ways. Inventory management in project sites compares favorably to programs in other countries. The reduction in the basic drug list which is being implemented provides an example worthy of emulation. Modifications in the patient abstract and treatment log certainly represent changes in the right direction.

A recently developed proposed, quarterly reporting form (appendix F) addresses a number of information needs. No comparable service statistics are reported and available in a timely manner. The

content consists of simple counts and is largely derived from existing records. The same variables are reported every quarter, minimizing training and management requirements. With limited analysis, the report provides the basis for estimating population-based rates for comparison with the clinic's past performance, with other similar facilities, or with expected rates. A manager with reliable information of this kind would be able to draw general conclusions about EPI coverage, somewhat less certain conclusions about ORT coverage, and less certain still regarding nutrition activities. He could also gain an impression of the level of activity devoted to malaria and tuberculosis screening. Completing such a report is largely a clerical function since counting individual events is the chief task. It is, however, obvious to even unsopnisticated staff that the total count of a given activity is difficult to verify. The incentive to report events that reflect negatively on the staff preparing the report (such as measles in a vaccinated child) is questionable. The form is nevertheless a substantial inprovement over the status quo. Almost any more elaborate reporting effort would require a qualitatively different level of effort from staff and managers, but this is the team's recommendation.

Even the simplest approach to information depends on a certain level of interest and commitment from the professionals implementing it. The proposed system asks little from clinic staff and presumably would require a relatively low level of commitment to function as designed. We would propose an alternative approach of seeking information that is more demanding of staff, but more directly related to improving performance. The corresponding implementation strategy would concentrate project resources on implementing the system in a few sites and documenting its value. At this stage, we would accord replicability per se only secondary importance and apply project resources as needed. Similarly, consideration of sites for implementation should not be limited to project complexes. Interest at the management level should be the overriding concern.

One area in need of attention is the patient record, which presently consists of a single, non-retrievable line in the treatment log book. These are not without value, but a number of quality-of-care issues depend on a more detailed record that can be used to follow up patients and for sampling by supervisory personnel. There can be little doubt that the highly trained and underutilized clinicians we met are capable of such an effort. The traditional compliment to such a record (in addition to the current chronological treatment log) is card file organized for followup visits, often termed a "tickler" file. The program has invested heavily in a community outreach infrastructure unusually well-suited to selective followup visits in addition to more generalized promotional activities. This file would identify a small sub population with an extraordinarily high risk of mortality and morbidity relative to the general population, such as children with acute diarrhea, fetuses carried by a mother with incomplete tetanus immunization, children with acute and potentially incompletely treated pneumonia, malaria, or meningitis, children with documented third degree malnutrition and/or incomplete immunizations, and active tuberculosis patients who have defaulted on chemotherapy.

Similarly, any supervisory efforts to take concrete action to improve quality of care, particularly through specific inservice training, revolve around the management of individual cases rather than global counts of selected activities. Examination of more detailed records has the crucial advantage of allowing selective verification of many components of management through followup visits to treated patients. Such verification also allows a supervisor to assess the effectiveness of referrals. More detailed records would also facilitate specific preventive measures that may otherwise escape the clinicians attention, such as providing tetanus immunization or ORT education to fertile age women presenting for other reasons.

It is less than encouraging to note that the World Food Program includes individual growth records that in principle would permit just such follow up assessments, yet appear to be virtually unused for evaluation. If the project staff can elicit interest in such an assessment, it would be technically straightforward to evaluate the accuracy of these records and the larger effectiveness of the program. Even an extremely small sample would be useful.

There is no intrinsic reason why reporting should be stereotyped, limited to the same measures every reporting period. Likewise, it is not necessary to limit reports exclusively to measures that are collected routinely. With limited direction, the highly trained staff at BHUs and RHCs are capable of small scale special data collection efforts to examine key issues in more detail. This includes random home visits and followup visits to an identified subpopulation. The coverage of EPI for example, can be estimated directly through a small number of visits. The details of age at complete immunization can also be estimated this way. This is the only practical technique to estimate the local occurance of many conditions such as measles and diarrhea, and perhaps most importantly, the occurance of unreported mortality.

The low level of precision of such efforts could be compensated for by repeating them periodically. They are also more succeptible to supervisory verification than raw counts. The significance of such measures to the local staff adds to their value, as does the opportunity to further investigate identified instances of maternal or child mortality or to intervene where, for example, an unvaccinated child is found. Information systems need not be oriented exclusively to summary figures submitted to higher officials. Less tangible but perhaps equally important, focussed data collection efforts would allow the MTs to play a concrete and visible role in the operations of the BHU as part of a larger, unified effort. Their current outreach work involves basically similar activities, but appears largely divorced from other clinic functions. Their carefully - maintained visit records appear to be generally ignored. They are capable of a wider variety of responsible and arguably more productive work.

A more flexible program of community-based visits would be facilitated by increased attention to information on the physical

location of individual families. Many MTs have already prepared useful community maps, but household-specific maps would be even more useful. Numbering houses, as practiced by the EPI and malaria programs, would further support targetted followup visits.

Most clinicians we interviewed complained that the present system for referrals is non-functional, particularly for hospital referrals. Whatever the lines of administrative authority, it would be premature to give up hope without a trial of a well-designed, written referral form.

Relatively little technical, epidemiological, and program information is routinely shared with the clinic level staff. Preparing written materials does require professional time, but a periodic bulletin is an inexpensive way to at least partially address a number of common concerns. Technical reviews of clinical topics, specially focused on project priorities in prevention and outreach, would address an area where formal training is generally weak. Interest in public health activities could be encouraged by articles on these topics that utilize data and case studies from the project. Outstanding performance and local innovations could also be given recognition, the current lack of which was mentioned by several MTs. The introduction of family planning services, as outlined in the Sixth 5 Year Plan, could also be facilitated through this medium.

The project's baseline survey includes a wide variety of epidemiological data and interpretation that should be shared with all levels of the project staff. The chief value of a followup survey would be to precisely document changes in a number of health indicators. Both questions regarding the validity of certain values found in the baseline survey and doubts regarding the impact of project activities on the remaining indicators argue against repeating this expensive effort. The small scale, program-oriented information-gathering efforts outlined above and elsewhere in this report represent a better investment of resources. The project's most pressing need is for information that describes in detail what is being done to affect health indicators, not another measurement of the indicators themselves.

The team's estimate of the health impact of project activities is, of course, strictly impressionistic. But we think it unlikely that a followup survey would produce findings that would strongly support a particular health program strategy or suggest an alternative. If management level information and small scale studies were to suggest that project sites are substantially more effective in providing early and complete immunizations, in assuring the early use of ORT in most cases of diarrhea in children, and were in general taking the actions necessary to reduce mortality rates, then a followup survey would provide a valuable confirmation of this impression. No such information is presently available. The very fact that project personnel do not have clear and relevant measures of their own performance leads one to be skeptical about their impact.

6. Management and Policy Issues

a. Drug supplies

It has been previously reported that the GOP expenditure on drugs amounts to RP7 per capita/year (pp PHC Report 1983.87, p. 101) and that the BHSP (1977-81) indicates that government expenditures provide less than 50% of the required drugs. In an attempt to stretch the available budget it was envisaged that considerable savings could be made by eliminating unnecessary drugs, thus assuring the budget available would ensure provision of adequate quantities. A study was conducted among IRHCs in NWFP between Nov 1983 and April 1984 following which a report- "Essential Drug List for IRHC's " was published by the PHCP, National Basic Health Services Cell, in June 1984. Apparently, the composition of the National Essential Drugs List was not based on the WHO recommended Essential Drugs List or on cost factors. Following publication, a panel of doctors in each of the other three provinces reviewed the study and with minor changes recommended adoption of the Essential Drug List (EDL) in these provinces.

Introduction of the list on a national basis has been approved and will be implemented for the budget year beginning 1 July 1986. The EDL consists of two groups- (A) essential drugs, and (B) useful drugs as these are ranked lower in priority for treating prevalent diseases. The report recommends that a full year's supply of drugs in group (A) be provided to rural health centers while those in group (B) will be provided if funds are available. A further subdivision was introduced giving List I for health facilities having a MO and a simpler List II, for those staffed only by MTs.

In principle, a DHO orders 80% of the annual consumption of essential drugs and distributes these to IRHCs, which hold them in a Central Medical Store. A new system of 'bin-cards' has been introduced whereby the storekeeper can readily keep a running inventory on all items on the shelves. Supplies are issued to BHUs which in turn maintain the 'bin-card' inventory system. The EDL report recommends that each MO/BHU will send a quarterly report of his drug situation to the MO/IRHC - this will enable the MO/IRHC to note whether any BHU has a stagnation or surplus of any drug item, so enabling the MO/IRHC to move surpluses from one to another BHU. At present should a DHO find that drug items are becoming low in stock, he can issue vouchers to purchase items on the local market.

During observation visits to the field, central Medical Stores at IRHCs were found to be adequately stocked and the 'bin-card' inventory system working well. Assurance was found from DDHSs, DHOs and MO/IRHCs that there was no actual shortage of drugs but rather occassional blockage in the distribution system. MO/BHUs in the field reported that items are sometimes in short supply - it appears that the method of assuring delivery of supplies from the RHC to peripheral BHUs

requires attention as there are conflicting reports of how BHUs, are to receive supplies,

- with the introduction of the concept of IRHCs, supplies are to be supplied on an annual basis by allocation according to the pattern of previous usage, and peripheral BHUs will receive their supplies from the Central Medical Store at the RHC,

- with the posting of MOs to BHUs , a more direct method of supplies seems to be in place whereby, the MO each month when taking his salary from the DHO administration office submits a requisition per drug item for restocking of his unit.

It would appear that with introduction of the Essential Drug List as of 1 July 1986 and the recommendations contained in the report of June 1984, that a system of allocation instead of requisition would be introduced from DOH stores to DHO stores, down to IRHC stores then to BHUs. Quantities can be determined easily when MO/BHUs adopt the quarterly stock reports which are to be sent to the MO/IRHC who carries responsibility for the efficient redistribution of supplies according to BHU usage - this would eliminate the need for ad hoc requisition and allow more efficient management of the drug distribution system. As the plan is to supply a means of transport to each IHRC to allow supervision of all health outreach, this could also be used to assure the movement of supplies between facilities.

b. Incentives

Working environments of static, non touring, high sounding, clinical jobs in densely populated urban areas with better facilities for further progress, greater chance to improve qualifications and brighter scope for private practice, constitute a set of priorities for attraction of medical and paramedical staff to the cities. On the other hand low sounding, rural assignments for preventive work in remote, thinly-populated scattered areas requiring extensive touring without proper transporation and communication facilities restrict the acceptance and continuation of such jobs in the rural areas. Further the sociocultural factors render the ladies in rural area assignments without sufficient compensation for proper security, guidance, travel and lodging.

In contrast to the above, the currently admissible housing and other allowances to the urban workers have resulted in their receiving higher incomes than equivalent personnel in rural areas.

It is obvious that unless certain compensatory allowances or incentives are provided separately for rural, touring, preventive jobs these assignments will always be perceived as undesireable.

No promotion of development in a country like Pakistan can be envisaged if rural uplift is ignored, in view of more than 80 % of its

population being rural. Consequently incentives for rural assignments are extremely important if GOP intends to promote the development of Pakistan.

The team appreciates that provision of various incentives, transport facility or conveyance allowance for movement of an official to the place of duty from his/her hometown and back (twice daily before and after working hours) is not going to benefit the rural population in general and the project in particular. Our emphasis regarding various incentives is based upon the requirement of a medical or a paramedical worker to reside at the place of duty so that maximum of his/her time be utilised for better achievement of the project goals.

Any combination of the following incentives might be provided simultaneously or one by one depending upon evaluation of the respective feasibility and cost effectiveness.

1. Rural area posting incentive

All the places of duty in the whole of the country may be alloted numbers according to their remoteness, difficult terrain and inapproachability. These numbers may be multiple of 5 or 10 up to ,say, 100. A medical officer at a BHU with a number, say, 60, will get 60% more pay provided he remains at that BHU. If he is transferred to another post with No. 15, he will get 15% more pay instead of previous 60% more.

2. Rural area supervision, and touring incentive

It has been mentioned in this report elsewhere that the project lacks sufficient supervision. Generally an official is allowed a specific amount of D.A. and is entitled to claim upto 3 times this D.A. for hotel charges subject to production of receipts. It is known that proper hotel facilities are not available in rural areas and as there is no incentive, the supervisory staff tends to go back to the city each day. To improve the impact of touring activities, the officer may be allowed to draw touring allowamnce @ twice or thrice his/her D.A. without the condition of despositing the hotel receipts. This incentive should be for every night stayed out in the field provided the following day is effectively spent in the field.

For mid level supervision, which is absolutely lacking presently, one of the MOs at IRHC should be full-time for preventive work and provided with a motorcycle on an ownership basis with recovery of the cost through installments, along with a motorcycle maintenance allowance.

3. Rural area field work incentive

Field work in rural areas is quite distressing because of the non-availability of transport in the absence of an official conveyance, lack of communication, lack of acceptance of preventive work by the public, environmental problems and lack of facilities which are

easily available in cities. In case of female workers the problems are more serious. As no official is entitled to get a D.A. for field duty in his area of duty, he may be given an incentive of grant of one D.A. for every 2,3 or 4 days effective field work. This incentive may be more for female workers but restricted to the officials who physically reside at their place of duty.

4. Preventive work incentive

Throughout the health system, curative work is accorded higher status than preventive work. The reality is that preventive work saves more lives and thus is more important. To emphasize this relative importance and to improve the status of this important work, it is recommended that preventive workers receive a special monitary benefit. When an individual is transferred to a clinical post, this benefit will be withdrawn automatically. This incentive should also be restricted to the officials physically residing at their places of duty and not for those daily travel from outside the duty area.

5. Rural area transporation, conveyance or conveyance maintenance incentive

Since the idea of provision of motorised cycles to the MTs has been dropped, some of the senior MTs are supposed to get motorcyles for field duty and supervision. Transportation of field staff is seemingly the most distressing problem to be solved for better implementation of the project. A few suggestions which might be evaluated for possible use are:

a) Grant of some monitary transportation incentive to enable the field workers to exert their own way to find the solution to the problem.

b) Feasibility of provision of motorised cycles may again be considered, through another public solicitation.

c) Provision of motorcycles to be made to a larger number of field staff while others may be provided with bicycles.

d) Provision of motorcycles on the basis of ownership and recovery of cost through installments and granting of a motorcycle maintenance allowance.

USAID may accept complete responsibility of procurement of motorcycles or at least sustain the expenditure against adjustment of the paid amount through a revolving fund. The cost of various other incentives may also be shared by the AID at least for the project period.

6. Non practice Incentive

Doctors in general here in Pakistan are allowed NPA, with some exceptions. As a matter of principal permission for private practice will be detrimental to the project as this will create uncalled

for hindrance in achievement of better working environments. The payment of NPA to the doctor should be uniform and generalised all over the country. Such allowance may also be considered in addition for the doctors heading institutions and not allowed private practice, at the rate of 25 to 30% more than routine NPA.

It has been reported that some doctors receive NPA as well as do private practice. It is recommended that grant of NPA should strictly be restricted to physically non practicing doctors.

In NWFP, the ADHOs are mostly very senior officers and have been provided vehicles for supervison. In other provinces the ADHOs are mostly fresh or recent graduates who are neither interested nor effective in supervision of field activities. The ADHO job is a very unattractive job and no person is interested in such a posting. It is suggested that senior officers well oriented in preventive work may be posted at ADHOs all over the country and given a fair monitary incentive as a certain percent higher non practicing allowance. As already suggested for rural areas certain numbers may be allotted to the posts in terms of higher NPA.

c. Role of the Private Sector in Success of PHC

The staff of educational institutions of all levels including the universities,private organizations mainly concerned with health and allied subjects; pharmaceutical manufacturers and pharmacists; political public leaders; public representatives at village and towns; general medical practitioners of all types including hakims, homeopaths, and paramedics; persons having life long disabilities resulting from one or the other disease and their attendants; sociology oriented people and people concerned with magazines, newspapers, dramatic concerns, radio and television are all very important in establishing a positive impact of the PHC project. Mass media has proven to impart sufficient influence on the general public regarding EPI and ORS, and is recommended to be gainfully utilised for recognition and acceptance of the project by the public and inviting their cooperation for successful achievements in their own interest. In addition, lectures, chapters and even books on primary health care as a concept, are recommended to be included in various courses at various levels of general and professional education with special reference to medical colleges, postgraduate medical institutes and various paramedical schools.

d. Underutilization of Clinic Facilities

The team observed a generally low level of utilization of RHCs and BHUs. Project sites were not markedly more productive than comparable non-project sites, usually serving on the order of 6 patients per provider per day.

Some factors responsible for underutilization of IRHCs and BHUs were considered to be as under:-

1. Lack of community involvement through community organization

2. Uncertainty about the availability of medical assistance at the time of visit in terms of personnel, drugs or other facilities.

3. Non-availability of services after working hours.

4. Lack of confidence of public in the centre, in view of private practitioners of all types.

5. Lack of supervision in terms of supervisor checks.

6. Lack of incentive for work in the rural areas. This may include supervision incentives, field work incentives and incentives for CHWs (from private sources).

7. Repeated postings and transfers of the staff.

8. Non-availability of a medical graduate in a BHU.

9. Non availability of female medical officers.

10. Lack of personal interest of the head of the health facility towards ailing humanity. Serious health workers who have polite and sympathetic attitude towards patients and who work full-time attract progressively more patients.

11. Non-availability of communications from the population groups to the health facility.

12. Greater distance of the centre from major population groups.

13. Restricted availability of drugs at the centre.

14. Recovery of a registration fee from the patients, which is against the understanding that the government provides free medical facilities (see section 6.k.).

15. Lack of interest to refer patients to the next higher level (It was pointed out that it is not being done often as such patients are not entertained at Tehsil and District hospitals and there is absolutely no feedback. Moreover transportation is also a problem.)

e. Manpower Planning and the Proposed MT Schools

Manpower Planning: There does not appear to be any form of long-term manpower planning process used in any of the provinces. Some form of long-term planning is necessary to prevent similar problems from occurring with other cadres of workers.

The simplest form of manpower plan is to estimate, for each type of worker, the number expected to begin work in the position each year (coming from new graduates, promotions from lower positions, transfers from same - level positions, and people returning from leave of absence) then deduct from it the number expected to leave the position (through death, retirement, return to school, advancement to other positions, leave of absence). It is recommended that: a) a manpower planning process be instituted in each province (beginning with training of selected individuals to assume these roles) and b) in the interim, a simple manpower projection be performed at least for MTs, to project the numbers of people required to be trained. Assisting each province to perform this projection should be one of the first responsibilities of the new long-term advisor.

Initial estimate of the quantity of MTs to be trained. A key factor in determining the size and quantity of training facilities required is the recommendation that the LHV and Female MT roles be combined. In this section, we have considered requirements under both conditions ie, acceptance and rejection of this recommendation.

The situation in each province varies; therefore, our analysis will include two provinces with widely differing situations to illustrate how this issue could be approached.

Punjab:

The first element of this analysis is to assess the time required to achieve complete coverage under current conditions (ie, a total intake of 300 students per year) and planned conditions (an intake of 500 per year). This will be done first for Male MTs.

# of MMTs required = # of Union Councils + # RHCs (1) = 2367 + 265(2) = 2632

# of MMTs currently posted = 334(3)

# of people who have entered MMT training = 796
% of MMT who began training who are now posted =(334 ÷ 796) x 100 = 42%

# of MMTs seats available = 178(4)
duration of course = 1.5 years

# of MMTs of those trained who are posted each year = (178 ÷ 1.5) X 42% = 50/year

years for complete coverage if this rate(6) = (2632 - 334) ÷ 50 = 46 years

* * *

years for complete coverage if 297 students enter training each year (6) - 28 years

Notes:(1) IRHCs required 2 MMTs: 1 is included in the Union Council total

(2) 1985-86 plan

(3) Jan 1985

(4) the remainder of the 300 seats are for Female MTs

(5) based on an unrealistic assumption of zero loss after posting; in reality, since there will be some loss, it will take longer to achieve full coverage; we have not had the time to make a reasonable estimate of this dropout, but doing so is not really needed for this analysis.

(6) based on same assumptions as above; 297 students per year is derived from taking the same proportion of male students as at present, assuming a total expansion to 500 capacity

Attrition. The dropout rate of 53% between beginning MMT training and being posted as an MMT is alarming, although we understand it is not dissimilar from other, roughly comparable programs in Pakistan. This is an extremely costly waste. In such situation, there inevitably are some dropouts which cannot be helped, but there usually are some which could have been prevented, either through better selection or through some action during the training course. It is recommended that the training specialists and their counterparts conduct a study of those who have failed to pass this course, to identify the reasons for their failure and determine if there are any corrective actions which can be taken to reduce future dropouts.

Expansion of training capacity. A period of 28 years to achieve full coverage is certainly sufficiently long to justify expanding the capacity to train MMTs from 178 to 297. Even if the extremely high dropout rate between entering the program and being posted could be reduced significantly, the quantitative needs still justify an expansion. In fact, even using extremely optimistic assumptions (continued zero dropout after posting and reduction of the dropout rate

between entering training and posting by 50%), the amount of time required to achieve full coverage (16 years) still would justify expansion of capacity.

Female MTs. For Female MTs, the target is the same, while the current and future production is far less than for MMTs. Unless there is a dramatic increase in training capacity - far beyond the scope of this project - there is no possibility of achieving full coverage within the foreseeable future. With the current plans, a target of 35-40% coverage within ten years is reasonable.

Implications of combining FMTs with LHVs. If Female MTs are to be combined into a single cadre with LHVs, their training would be extended to 2 or 2 1/2 years. To compensate for this slower production, a larger intake or a lower target would be necessary. However, the other roles played by LHVs and other LHV vacancies - current and projected - would also need to be considered. In addition, since LHVs are an older category of personnel, a far higher proportion can be expected to leave the services each year. Also to be considered is whether two or three LHV/FMTs are needed to staff an IRHC. Finally, there currently are many Punjabi women who are trained and serve for several years in other provinces, then return to Punjab to look for jobs; their numbers would have to be incorporated into a complete manpower assessment. It is beyond the scope of this report to incorporate all of these factors. The most basic conclusion is that the number of LHV/FMTs to be trained during the next ten or fifteen years cannot be based on an attempt to achieve complete coverage during this period unless there is a substantial increase in training capacity.

If Female MTs are to be combined into a single cadre with LHVs, their training, presumably, would take place at existing or new schools for LHVs. This could result in more seats being available for Male MTs in either the current or proposed training schools.

Conclusion: training capacity. Our basic suggestion is that an increase in training capacity is fully justified, whether the current model of Male and Female MTs is retained, or a new model with combined LHV/FMTs is developed. But an increase of training capacity does not necessarily imply the need to construct new, larger schools as currently planned. Several other factors need to be considered.

Location of Medical Technician Schools. All of the new MT schools scheduled for construction under this project are planned to be located in hospital compounds. We believe this to be an undesirable location for a school to train outreach workers because a) the association with the hospital will inevitably have a psychological effect on the trainees, resulting in their perceiving it as a hospital - based position; and b) the proximity to a large number of experts in various fields will inevitably result in these people providing many of the lectures during the course; it is virtually impossible to conduct an effective, competency-based course unless the course is taught strictly by a small number of people, each of whom has a clear understanding of the objectives, of the relationships among the parts of the course, and of appropriate teaching methodologies; guest lecturers should be allowed only in extremely rare circumstances.

Size of training schools. Current MT schools intended for 25 students each are located at District Hospitals. The plan is to construct larger schools, with the capacity for an intake of 100 students each, also to be located at District Hospitals.

A major aspect of the training of MTs is their field training, at IRHCs, BHUs, and villages. With a larger number of trainees per school, we feel that accessible field sites within a few miles of the training school will be 'used up' too rapidly, necessitating costly and tiring trips to more distant field sites. It would be preferable to continue to have a larger number of smaller schools.

In-service training requirements. Elsewhere in this report, we have suggested the desirability of establishing an In-service Training Cell under the Directorate of Health Services to develop and coordinate a complete in-service training program for all personnel.

USAID commitment to the construction of new MT schools. In Punjab, there is already an expectation that USAID will finance the construction of five 100-trainee schools for MTs. A momentum has been established such that any drastic change in this commitment would be harmful to future relationships. The Province's view is that a) the schools are needed for their intended purpose and b) even if not, they will still find good use for them for the training of other cadres of personnel.

Training schools; conclusion. If:

a) it is preferable to have MT training in a more rural site;

b) it is preferable to have MT training in smaller units than proposed for the new construction;

c) it is desirable to establish an In-service Training Cell, with adequate facilities; and

d) the commitment of USAID to construct five 100-trainee schools has, for all practical purposes, gone beyond the point of no return;

we recommend the following:

1) USAID should construct four 100-trainee schools plus two 25-trainee schools; the latter should be located at IRHCs.

2) The DOH should establish an In-service Training Unit, with responsibility for organizing some and coordinating all in-service training in the Province; the four 100-trainee schools should be under its jurisdiction.

3) MT training should occur a) in some of the current MT schools, b) in the to-be-constructed 25-trainee schools at the IRHCs, and c) in batches of 25 at the to-be-constructed 100-trainee schools.

4) A careful assessment should be made of the training at the IRHC sites to determine if their graduates are more skilled and better motivated than graduates of the District Hospital-based programs. If so, in the future, other training schools should be constructed at other IRHCs.

Construction implications if Female MTs and LHVs are combined. Elsewhere in this paper we have recommended that Female MTs and LHVs be combined into a single cadre. If that occurs, it would imply that half of the funds available for construction should go to the LHV/FMT program. There are several different approaches which might be taken:

1) Do exactly as suggested above, but allocate two of the to-be-constructed 100-trainee schools to LHV/FMTs.

2) Reduce some or all of the 100-trainee schools to 50-trainee schools; construct other 50-trainee schools.

3) Reduce some or all of the 100-trainee schools to 50-trainee schools; use the savings to expand existing LHV schools.

4) Combination of these suggestions.

Baluchistan:

Currently there is one MMT and one FMT school in Quetta. The MMT school has begun each course with 23 or 24 students; the FMT course has begun with 11-18 students. The plan under this project is to construct one 50-trainee school in Quetta, another in Khuzdar.

There are conflicting versions of what might be considered targets for number of MTs to be trained. In any case, precise figures are not necessary, since, in Baluchistan, there is no hope of achieving anything ressemoling full coverage of Male or Female MTs in the foreseeable future. The limiting factor appears to be the ability to establish and sustain any kind of major facility outside the capital area. This applies both to a school and to an IRHC.

At the request of the provincial authorities, the Khuzdar school should not be built. The Quetta Male and Female MT school sould be converted to a MMT school only, with a capacity of 50 students. FMTs (or, as suggested elsewhere in this paper, LHV/FMTs) should continue to be trained at the existing LHV school in Quetta; USAID should provide some assistance to upgrade this institution by providing accomodations for 30 students, plus associated classrooms and offices.

f. Construction of the Medical Technician Training Schools:

Under the PHCP, some 13 training schools are to be built and equipped with a total budget input of $8 million by USAID. To the date of reporting no construction has begun due to delay in negotiating land

sites. The GOP has expressed desire that the training schools should be sited at District Headquarter Hospitals - to date MT training has been done in rooms allocated in the hospitals or in other training schools e.g. the Public Health School, Quetta.

Doubt has been raised that since these temporary locations have been turning out trained MTs whether in fact the proposed schools are required. Analysis however, has shown during field tours that they will be necessary if the required number of MTs are to be trained to match the proposed expansion of services especially in Punjab. Baluchistan authorities however, feel that one school instead of two would suffice its needs.

Since the PHCP to date appears to have been heavily weighted in expanding infrastructure and giving attention to supply of curative services, and since it is now realized that the MT curriculum requires revision toward a community based preventive vision, the evaluation team have had doubts as to the wisdom of placing all the proposed schools at District HQ Hospitals where unconsiously the students tend to absorb a curative rather than a preventive viewpoint on health. There is no doubt that schools especially with on-site dormitories etc are needed and that in fact they can now and in the future be used for in-service training or training of other paramedical categories. It is recommended therefore that consideration be given as in Punjab to building 4 MT training schools at District HQ Hospital sites each with a capacity for 100 students and two smaller schools for 50 students at IRHC localities. It is felt that MTs trained at the latter will be more oriented to rural health delivery and more inclined to have a balanced concept of promotive, preventive and curative health. (Studies over an extended period can be done to evaluate the quality of training between DHQ Hospital versus IRHC training and to determine if those trained at rural sites remain longer in service in rural areas).

It is therefore, recommended that the construction of MT training schools proceed.

g. Career Ladder for Rural MOs:

Most of the MOs posted to BHUs expressed fear that they might be forgotten re post-graduate training and career promotion.

It is recommended that consideration be given to the possibilities of a career ladder for MOs serving in rural areas, eg. as one pattern which might be evaluated, MO/BHU rises to MO II IRHC, to MO I RHC; during this time of service promising candidates might be sent for public health training either toward a DPH (Lahore) or a MPH (abroad). This would then guarantee that promotion could continue, eg. MOI RHC to ADHO to DHO to Program Director.

h. National PHCP Versus Provincial PHCP:

The current PHCP reflects a liaison between USAID and the Federal Government of Pakistan (GOP). The role of the GOP appears to be one of policy and funding provision while the provincial DOH's are the

implementers. Varying cultural and geographic constraints have produced differences in service delivery and PHCP interpretation. The evaluation team recommends that USAID consider developing a more direct liaison with each province concerning the remaining time left within the current program in order to expedite the achievement of remaining objectives - the alternative to the proposal would be for the GOP to recruit a dynamic head for the vacant position of Project Director - National Basic Health Service, thus assuring a full time director.

i. Management Analysts/Training Specialists:

Under the USAID/GOP program the services of five management analysts and four training specialists have been contracted from Rawal Associates. These individuals working with the USAID contracted management and training advisors have been largely responsible for developing the various training modules and conducting training workshops for various levels of PHCP personnel. Contracts for these personnel are due to expire in March 1986.

It is recommended that the above contracts be extended to the end of the present PHCP and that provincial DOH consider the advisability of appointing counterparts for each management analyst and training specialists so that these might work alongside them till the completion of the program and thus be capable of continuing the role.

j. The Changing Role of Medical Technician:

In Punjab, Multifunctional Outreach Teams from each BHU and RHC are being established. The team is headed by a MT, a Sanitary Inspector or a Rural Health Inspector, and comprises of former EPI and Malaria Workers. GOP policy is to adopt the same structure for the other provinces in 1986-87 when the current AHP with strong emphasis on immunization is completed.

The intent of the outreach team is for all three individuals to go to a village together, where they will provide a package of largely preventive services. It is expected that a team will spend the entire day in each village, covering all villages in the area at least once a month. The team will spend only a day or two in a month at the BHU for administrative matters; other than that, they will have no responsibility within BHU or IRHC. In a few years, virtually all the outreach teams will be headed by a MMT in Punjab.

In the 1977-81 USAID Health Project, the concept of Medical Technicians was a central theme. Although this person was supposed to have some preventive/promotive responsibilities, his or her major focus was to play the role of a physician in the areas where there were no physicians. Since physicians perform essentially curative functions, this is the way the MT's role was conceived. Their training further strengthened the largely curative role of the MTs. As long as this was the primary understanding of their role, outreach activities were perceived as peripheral, or of secondary importance. Most of them do perform some of their outreach responsibilities, but not with much enthusiasm.

With the recent posting of physicians at BHUs and establishment of outreach teams, the MMTs role is changing dramatically - whether or not he was trained to perform the new tasks (and whether or not he likes the change). Most basically, MMTs must shift from largely static on to completely mobile, from largely curative to largely preventive/promotive, from structurally simple jobs to leading a multi-functional team. They have neither the inclination not the training to do any of these . Already there have been MMT protests against the change.

With the changing role, the MMT will be working in three different situations. In Punjab he will be the head of an outreach team having no responsibilities at BHU or IRHC, while in the other three provinces he will be either an assistant to Physician or independently in charge of a BHU where the position for Physician is not yet created. Again the outreach teams shall have different functions in the Project and Non-project areas in Punjab. At the IRHCs and attached BHUs, in addition to being the head of the outreach team, MMT is expected to organize local communities, develop village health committees and train and supervise CHWs, whereas in the non project area the Sanitary Inspector or Rural Health Inspector will lead the outreach team having no responsibility of developing active community base.

A fairly detailed study is required to understand the role of Medical Technicians in different situations and to develop training material appropriate for each situation. The current status could be exploited to advantage by conducting a comparative study of the outputs and outcomes of BHUs (i) in the project areas, (ii) in the non project areas, (iii) where physicians and MMT are working together and (iv) where MMT is incharge. Identification of strengths and weaknesses of different approaches could be of immense help in defining the future direction.

The outreach function of female MTs in a vast majority of cases is limited to the village where the BHU or RHC is located. Decision is still awaited on what would be a suitable transport for the female medical technicians. In the absence of some kind of transport it is unrealistic to accept that the female MTs are training, supervising and supporting female CHWs, and visit all the assigned villages at regular intervals. Detailed study of the IRHCs, where successful functioning of the FMTs is reported, will expose the hollowness of such claims.

Procuring vehicles and their maintenance will require additional funds and enhance the already high unit costs of the IRHCs. There is no evidence that in local conditions the outreach work of LHVs who have been working in RHCs for more than two decades, has produced better impact than where they have remained static at the centers. The constraints of female health workers in the rural areas must be recognized and their functions need to redefined.

It may be through the Dais (TBAs) that the FMTs can best remain in touch with the female population of the area. They could train the Dais to carry out prenatal and postnatal care, identify and refer high risk cases, conduct clean and safe deliveries, promote breast-feeding, advise on maternal and infant nutrition, help in maintenance of growth charts of children under 5, and extend help in MCH

work. Although FMTs are required to train TBAs, their curriculum does not cater to developing such skills. Appropriate TBA teaching kits and learning aids are not available at IRHCs and BHUs. No mechanism is provided for supervising this important task which requires a change in attitudes towards the Dais and developing techniques appropriate for teaching elderly illiterate rural women, who have developed their skills through self learning over many years. The LHVs are better equipped in this respect than the FMTs because the former undergo 9 months of midwifery training against 2 months in case of the later.

Apart from developing a community base for primary health care, the functions of FMTs and LHVs are essentially the same especially in the presence of physician. Both are essentially outreach workers although being females their capacity is quite limited in this respect and more or less confined to few adjacent villages. It may be proper to merge FMTs into the LHV's category to emphasise their role as MCH workers and to separate them from MMTs who are to become essentially the leaders of multipurpose workers' teams. This would also enable the FMTs to take adequate training for extending efficient midwifery service, that is essentially required of female health workers in the villages.

k. Financial Feasibility

This is an important issue- - indeed, it is decisive for evaluation of the significance of this Project during the remaining years of its life.

As envisaged by the Project Paper (PP), the importance of the IRHCs to be developed by the project was that they represented a pattern which could be generalized to Pakistan's basic health-services system. Thus (PP p. 36):

l. Project Rationale

> "Under the previous A.I.D. financed Basic Health Services Project, the GOP made significant progress in implementing its Primary Health Care Program. Much remains to be done, however, in terms of strengthening the existing program, institutionalizing various components of the program, and expanding the provision of adequate basic health services to the rural population of Pakistan."

As matters stand, however, it is not actually feasible to generalize an IRHCs network of the kind being developed by the Project to the basic health-services of Pakistan as a whole. This is in part owing to the operating cost requirements of IRHCs being developed which imply an unacceptable load on the budgets of the provincial health departments. This also is in part owing to the circumstance that it is highly unlikely that those project inputs which have been crucial to whatever success the project has so far achieved could be continued as a regular part of the ongoing basic health services system in Pakistan (i.e., after the project has run its course). These matters will be explicated in what follows.

The Recurrent Expenditure Problem Implied by the IRHCs Scheme

The operating (recurrent) costs of an "operational" IRHC

consisting of a RHC and four BHUs have recently been estimated as follows, viz:*/

RHC @ Rs. 510,000 plus 4 X BHU @ Rs. 199,985 eq. Rs. 1,309,940.

The PP assumed that each IRHC would serve, say 50,000 persons (reflecting the standard adopted by the health planners that each rural health facility would serve from 5 - 10 thousand persons).**/

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*/ See September 12, 1985 Office Memorandum from J. Eaton to R. Martin. An "operational" IRHC is (elsewhere) defined as one with staffing, facility, equipment, supplies, etc. to be truly "functional." It appears that these standards were adopted by all provincial health directorates on January 3, 1985.

The instant example assumes an OP visit rate to the RHC of 60/day and to each of the BHUs of 25/day. The BHUs have medical officers. The memo included as an operating cost item "retirement benefits for the staff." I have deleted this item on the ground that it is not a budget cost to the provincial health departments (nor, more generally, it may be pointed out, is it an economic cost of the IRHCs system).

We are concerned for present purposes with the "financial" costs of the IRHCs, i.e., the direct claims on the operating budgets of the provincial health departments. To arrive at the "economic" costs of the IRHCs, the major item to be added would be (annualized) capital costs. Current estimates of the cost of constructing and equipping the facilities comprising an IRHC are, roughly, as follows:

RHC with a third doctor's residence, say - -	Rs. 3.5 m
Four BHUs with doctor's residence, say - - -	Rs. 5.0 m
IRCH Total	Rs. 8.5 m

(These costs, derived from comments in the field and some ADP documents and other documents are intended as no more than approximate, which is sufficient for present purpose.)

If we make the conservative assumption that all of the capital items (facilities, equipment, vehicles, etc.) have a useful life of 30 years and that a 10.0% interest rate is appropriate (this is the current bank rate) then the annualized capital cost (depreciation plus interest foregone on the funds tied up in the capital equipment) works out to about Rs. 901,000 for a new installation. This would bring the total operating cost of an IRHC to about Rs. 3.2 m.

**/It appears that this standard has now been changed to the rule that there should be at least one BHU for each Union Council (this for "administrative convenience") before facilities are built on the basis of population density and scatter. (See Evaluation of the Rural Health Programme in Pakistan, Health and Nutrition Section, Planning and Development Division, Government of Pakistan, November, 1984 - - p. 40 (henceforth, Health Sector 1984). Exactly what this rule implies for RHC and BHU to population ratios is not clear although, generally, it would appear to imply an increase in the number of persons to be served by each facility. In any event, for purposes of this discussion we will stay with the assumption on this score made by the PP.

On this basis, the per-capita cost of an IRHC would work out to about Rs. 26.0 (i.e., for each of the 50,000 persons in a representative IRHC catchment area). According to the PP (p. 92 - and excluding facilities costs), the average cost per person served by the IRHC network would be about Rs. 17.0 in 1982 prices. If we bring this to date assuming an average 10.0% inflation rate over the interval we arrive at a per-person cost of Rs. 24.9 - - a result very close to the currently calculated per-person cost.

How may we evaluate the operating-budget loading implied by an IRHC operating cost of about Rs. 26.0 per capita? One way is to compare it with total expenditures per capita by the provincial health departments to determine the proportion of these budgets that would be claimed by IRHCs in the Project model. The following table exhibits data relevant for this purpose:

Health Expenditures (Recurring Budget) by Provincial Health Departments and Population 1985-86

Province	Total Exp. Health Rs.m	Population (millions)	Per capita Exp. Rs.
Punjab	1251	55.0	22.3
Sind	343	21.9	15.9
NWFP	387	11.5	33.7
Baluchistan	166	5.0	33.2

Source: Population as reported in Pakistan: Recent Economic Developments and Structural Adjustment, World Bank Report No. 5347-PAK, March 20, 1985 (henceforth IBRD 3/85) brought to date assuming an annual rate of increase of 3.0%. The population of NWFP has been adjusted to exclude that population in the Federally Administered Tribal Areas. Total operating budget for health from (1985-86 Estimates of Charged Expenditure and Demands for Grants Current Expenditure), Finance Dept. Government of Sind, Demands for Grants Current Expenditure (Health) for 1985-86, Government of NWFP, and data supplied by Punjab Health Department. The expenditure data are initial Budget Estimates (i.e., rather than Revised Estimates or Actuals).

Thus it would appear that an IRHC expenditure on current account of Rs. 26.0 per beneficiary would be more than total health department expenditure on current account per capita in Punjab and Sind and about 80.0% of such expenditure in NWFP and Baluchistan.

Another way to evaluate the operating-budget loading implied by the Project IRHCs is to compare Project RHC and BHU operating costs with the operating-budget provision now being made for these facilities.

The following table exhibits these data:
Estimated Recurring Expenditure RHCs and BHUs by Province 1985-86:Rs.(000)

	Punjab	Sind	NWFP	Baluchistan
RHC	380	137	256	1,102
BHU	109	28	65	93

Source: 1981-82 average operating expenditure as reported in Health Section 1984 adjusted to 1985/86 expenditure levels assuming a 7.0%/year inflation rate over the interval (see IBRD 3/85, pp. 187 and 189) and a real growth rate of 6.5%/year over the interval (GDP has been growing at about this rate in recent years). In interpreting these figures, it should be noted that the Health Section 1984 findings were based upon a very small sample and, for most of these cells, there was a considerable range around the average value reported here.

These expenditure may be compared with the recently estimated Project IRHCs costs of RHC Rs. 510,000 and BHU Rs. 200,000. This comparison, as did the previous one, suggests that the IRHC network envisaged by the project is a very "rich" package by current standards in this domain.

It may be objected that putting this matter in terms of "current standards" is not the best way to put it. The IRHC network envisaged by the project is not now generally in place throughout the basic health-services system. It will take some time to extend this system to achieve general coverage under it. During this period of time GDP will be growing such that the real fiscal burden entailed by these facilities will constantly be decreasing. It is true that, from this point of view, evaluating the fiscal burden entailed by the IRHC network in terms of "current standards" may paint too ominous a picture. More particularly speaking, whether an appeal to economic growth provides a remedy for the recurrent expenditure problem implied by the IRHCs scheme depends upon the length of time one assumes it will take to put the system generally in place and upon the rate of economic growth anticipated. By way of an example, let us make the following assumptions: (1) The IRHC network will be extended at a rate to achieve (virtually) complete coverage of the rural population in ten years time. (2) GDP grows in real terms at a rate of 6.5%/year during this period. (3) Population grows at a rate of 3.0% during this period. (4) The real rate of growth in Provincial department of health budgets over this period of time is equal to the rate of growth of real GDP. On the basis of these assumptions, at the end of the ten year period, the per capita expenditure for health by the provincial health departments would be in 1985/86 prices as follows:

Punjab	Rs. 32.2
Sind	Rs. 21.4
NWFP	Rs. 45.3
Baluchistan	Rs. 44.6

The situation has been improved but the per beneficiary cost of the IRHC network is still high relative to the total per capita expenditures for health, the percentages being: Punjab 81.0%, Sind 124.0%, NWFP 58.0% and Baluchistan 58.0%.

Of course, if one made different assumptions (e.g., that GDP grew at a faster rate or that health budgets grew at a rate considerably faster than the growth of GDP), one would get different results. In fact, the Plan proposed a 20% increase per year in the operating budget for health over the 1982-83 level and these budgets have increased at about this rate during the first three years. This is an encouraging development. However, in looking at the very large proportional claims on the total health budget implied by the IRHC scheme, it must be kept in mind that, historically, hospital services have claimed the lion's share of the provincial health budgets leaving something on the order of, say 20.0% for the rural health services network.

Based on the foregoing, it is a fair conclusion that, barring a major change in the way in which the demand for government provided health services is financed, the recurrent expenditure problem implied by the IRHCs scheme is such that an attempt to replicate this system nation-wide, in, say, the next ten years, would impose a formidable burden on provincial health budgets.

User Charges (Fees) for Government Health Services: A Remedy for the Position?

The PP made the suggestion that some of the burden on health department operating budgets could be relieved if the IRHCs charged fees for services rendered. This strategy would be in line with Sixth Plan health-financing strategy which proposed a substantial upward revision in fees charged for government provided health services, e.g., a fee of Rs. 2.5 per outpatient consult, rural, by the end of the plan period. */ Fees of Rs. 2.0 per OP visit to the RHCs and BHUs

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*/ As matters stand, revenue from fees for government provided health services reverts to the provincial exchequers, i.e., rather than to health department budgets. If such fees are to relieve the burden on provincial health budgets, it would be necessary that (in effect) revenue from such fees (or at least a substantial part of it) revert to the health departments. Apparently, this is the assumption made by Sixth Plan in proposing fees to cope with the health sector's recurring-cost problem.

The team was told in Sind that there has been agreement "in principle" by the government of Sind that (a substantial part of) revenue from fees for government provided health services will (in effect) revert to the facilities marketing the services. It appears that negotiations are just now about to get underway to develop a formula to accomplish this. For a number of reasons, this must be regarded as a very important development on the health-sector financing front, it should be watched closely over the coming months.

are now charged in Sind and Punjab and a fee per OP visit of Rs. 1.0 in NWFP where there is a physician present in the facility. The PP assumed that the population in the IRHC catchment area would visit IRHC facilities as outpatients at an average rate of 2.0 visits per person per year, i.e., 100,000 OP visits/year for a representative IRHC. If each OP visit paid a fee of Rs. 2.0, the revenue yield would be Rs. 200,000, or about 15.0% of the operating cost of an "operational" IRHC as envisaged by the project. Actually, this overstates the percentage of cost recovery. The exemplary IRHC for which the costs were estimated assumed a total of about 40,000 OP visits per year (assuming a 250 day working year), and supplies (of drugs, etc.) were calculated to be appropriate for such a case load. A facility accommodating 100,000 OP visits per year would require a much larger budget. In any event, it is clear that, even on the basis of the high utilization rates projected by the PP, fees much in excess of those now being charged or those contemplated in the Sixth Plan would be required if there were to be significant cost recovery for IRHCs by virtue of revenue resulting from fees for services provided by these facilities.

Whether fees significantly in excess of those now being charged for government health services or significantly in excess of those contemplated in the Sixth Plan are feasible is an issue to be considered in evaluating the financial feasibility of the IRHCs scheme. It is relevant in this context to remark that private payments for medical care in rural Pakistan appear to be appreciable.*/ This circumstance may imply a "willingness to pay" for medical services delivered by the public sector. In any event, conjecture about these prospects will not get us far. Once again we need some study to provide information to inform evaluation of these prospects. The evaluation team urges that a study be undertaken to determine from what provider systems consumers are now obtaining their medical services, what utilization rates for the various systems are, and what consumers are paying for such services. Such information is necessary for understanding, say, the current low utilization rates experienced by government facilities

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*/ See, for example, Household Income and Expenditure Survey - 1979, Federal Bureau of Statistics, Statistics Division, Government of Pakistan. Data reported here show an average expenditure per rural household for medical services of about Rs. 16.0/month in 1979.

and hence for better understanding of the prospect for more significant cost recovery in these facilities.*/

In practice, utilization rates for IRHC facilities and for the basic health services facilities more generally have been far below those envisaged in the PP and far below those assumed for the IRHC-cost example. Our findings in the field are that, and as has been reported for many years in Pakistan, visits rates are on the order of 0.5 or less per capita for the population in the catchment areas of these

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*/ As has been pointed out foregoing, a crucial issue for evaluation of this project is that of whether it is realistic or otherwise appropriate to regard the IRHCs envisaged by the project as a format which might be replicated nation wide. Pursuant to engagement with this issue, and pursuant to the recurrent-cost problem posed by the project and recognized in the PP, it is necessary to explore the extent to which revenue from fees for IRHC services might provide a remedy for the position. Hence, the discussion of these matters in the text.

This discussion should not, however, be taken to imply that it is the view of the evaluation team that the existing (or other) fees for services provided by the IRHCs are appropriate. Indeed, a strong argument can be made that fees for services provided by the IRHCs are not appropriate.

Asserting this latter position should not, in turn, be taken to imply that it is the view of the team that fees for government-provided health services can make no contribution to solution of the recurrent-cost problem confronted by the basic health services in Pakistan. Indeed, a case can be made that fees for government provided hospital services, facilitating a diversion of funding now going to the hospitals to the basic health services, is the most promising financing strategy to remedy the recurrent-cost problem confronted by the basic health services in Pakistan. (For extended discussion of these matters, see C.M. Stevens, Alternatives for Financing Health Services in Pakistan, December 1983).

In a consideration of the extent to which the recurrent-expenditure problem implied by the IRHC scheme should be regarded as a bar to replication of this scheme nation wide, it obviously is necessary to draw attention to the possibility of such an alternative financing strategy (albeit, it is not discussed herein).

These considerations are also obviously important from the point of view of USAID's interest in the "sustainability" of those health programs assisted by USAID-funded projects. For example, if it is not appropriate to expect IRHC-type delivery systems to be self-sufficient or self-sustaining by virtue of themselves generating private revenue, how then can we expect compliance with the sustainability requirement (i.e., that, over the longer run, as A.I.D. resources are phased out, host country resources will be phased in)? Concern with the sustainability issue will, presumably, be continuing as USAID begins to develop its health-sector assistance portfolio for the years ahead.

facilities. At these visit rates, fees of Rs. 1.0 or Rs. 2.0 per OP visit result in virtually no contribution to cost recovery. */

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*/Why the visit rates are so modest is a question urgently in need of investigation. We were told in the field that people visit the facilities when they think that the facilities have efficacious drugs on hand and stay away from the facilities when they expect that such drugs are not available. We were also told that an MO on the staff is necessary to achieve a reasonable utilization rate. It is true that in the case of a "model" IRHC visited by the team, where an unusually vigorous and competent MO was in charge, a substantial volume of OP business was being done by the RHC, on the order of 2,400 OP visits per month, or, say, 30,000 per year. However, the population in the RHC catchment area was put at78,098 and thus this population too was generating less than 0.5 visits per capita. Moreover, this facility had a staff of 2 male MOs, 1 female MO, 1 male MT, 2 female MTs and 1 LHV such that the OP case load per provider was only about 15 visits per day. Overall it seems clear from observed and reported utilization rates for the basic health services facilities that many people in rural Pakistan must be getting their services from other provider systems. We need better information on these alternative sources of care.

Under existing fee schemes for the basic health services, each facility is expected to deliver to the exchequer Rs. 1.0 or Rs. 2.0 for each patient registered at the facility. Consequently, those patients who get in free, based upon their contention that they cannot pay, are not registered. (We were told that although facility management has the authority to exempt those who cannot pay from the fee, the MOs and others in charge of the facilities are reluctant explicity to do so, i.e., to show registered patient for whom no fee is turned over to the exchequer. And, indeed, examination of patient registry books revealed virtually no such cases). There were also veiled suggestions at some sites visited that, in some instances, a fee actually collected may tend to find its way into the pockets of those doing the collecting rather than into the provincial exchequer. In this case too, the patient would not be registered.

Needless to say, practices such as those adduced foregoing, may distort utilization data in which health planners and others may have an interest. In particular, investigations of elasticity of demand (demand response to the imposition of fees) might be led awry by such phenomena.

Generally, the OP fee schemes operating in the basic health services system in Pakistan warrant some careful study at this juncture. In various countries, it has proved very difficult to maintain the integrity of such systems. Is this a problem in Pakistan? It was suggested to us at several field sites that the imposition (or increase) of OP fees resulted in a reduction in utilization rates. Is this true? To what extent are these fees income related such that those who cannot pay are not obligated to do so? How is such income relating administered? Is it realistic to expect high collection rates under fee schemes such as those now operating in Pakistan under which revenue from fees reverts to the exchequer?

It is relevant to note here that, although this is the third year of the Sixth Plan, it still has not been possible to introduce user charges in the manner and on the scale envisaged in the Sixth Plan. As the Sixth Plan emphasized, improvement in the quality of services will be necessary before introducing substantial fees. It has been suggested that perhaps this process should begin in the Headquarter hospitals and then be extended to the rural facilities.

Based on the foregoing discussion, it is a fair conclusion that fees for IRHC-provided services cannot realistically be regarded as a remedy for the recuring-cost problem confronted by the basic health services in Pakistan.

Some suggestion have been made to reduce costs. For example, the Sixth Plan proposes one IRHCs for every 5-10 BHUs against 4 BHUs under the IRHCs. This would reduce considerably the number of RHCs to be established but it would also aggravate the supervision factor, so far as the incharge of the IRHCis concerned with almost double the number of BHUs to supervise, especially in the sparsely populated areas of the country.

On the other hand the Plan proposes the establishment of new RHCs with upto 25 beds and facilities of X-ray, laboratory and surgery. This would increase the capital cost as well as operational cost of the RHCs. It may be argued that with better facilities the RHC would be utilized to the optimum level, the per capita recurring cost would decrease and there would be greater justification for the user charges, matched by increased willingness to pay. How the whole system would turn out in practice is anybody's guess. However the cautious approach would be to try these ideas, to the extent possible, in the functioning IRHCs during the remaining two years period of the Project. Subsequently the new approach may be evaluated and adopted, modified or discarded, according to the dictates of the circumstances.

Thus, we are left with the proposition with which this discussion was introduced - - namely, as matters stand, owing to formidable operating cost requirements, it would not be realistic to think of the IRHCs network as envisaged by the project as a system which might in the foreseeable future be replicated nation wide to in this way cover most of the rural population of Pakistan.*/

Project Inputs Crucial to IRHC Performance Success: Could these Be Continued as a Regular Part of the Ongoing Basic Health Services System in Pakistan?

In principle, one way in which the IRHCs developed by the project might be replicated nation wide (assuming that this were financially feasible) would be simple imitation, i.e., policy makers in the provincial health departments, observing the exemplary IRHCs developed by the project, would go on to implement such IRHCs elsewhere in the basic health services system, relying upon the regular health department staffing to accomplish this. On this approach, once the project was over, imitation would generalize it to

*/ There are other ways of thinking about the project and its IRHCs which suggest that the project could have a very valuable output during its remaining years. This matter is dealt with subsequently.

the basic health services system as a whole such that no continuation of project-type activity under different aegies would be necessary to achieve the result. Some such mechanism as this is what project designers usually have in mind when they anticipate generalization of the programs supported by their projects.

In this case, however, and even if it were financially feasible to extend project IRHCs generally to cover the rural population, it is unlikely that this process could take place by simple imitation. There seemed to be general agreement among our respondents in the field that to the extent that the project was achieving its objectives, this was for the most part owing to the dedication, hard work and skill of the management analysts and training specialists employed by the project and the support given this staff, particularly, virtually unlimited availability of transportation and other support for staff travel. The strong impression gained from the field was that a continuation of this kind of activity would be necessary, albeit under different aegis, if IRHCs were to continue to be developed after the termination of the project. The different aegis would be the provincial health departments. But it seemed clear from our inquiries in the field that the provincial health departments did not intend to continue employing and supporting project-type management analysts and training specialists. */ This circumstance would also serve as a bar to generalization of the IRHCs program (even if it were financially feasible).

It may also be noted that if generalization of the IRHCs program developed by the project were to be accomplished by a continuation (under different aegis) of these project activities, the implied pace of generalization is very slow. The team has been told that, as matters stand, the project has so far worked in about 29 IRHCs and has brought about 5 IRHCs to operational status. The project target is 53 operational IRHCs by the end of the project. Even if this goal were achieved, project developed IRHCs would cover only about 4.0% of the rural population of Pakistan. If, e.g., as by continuation of project-type activity, generalization of the IRHCs program developed by the project went forward at this pace, it would be a very long time indeed before substantial coverage of the rural population under this kind of program was achieved, particularly keeping in mind a current population growth rate of about 3.0% per year.

These considerations constitute a bar in addition to that of non-feasibility financially to generalization of the program developed by the project.

A Note on Drug Supply Issues

According to the 9/12/85 to Martin from Eaton memo, a major reason for the higher cost of a project IRHC as compared with the BHUs and RHCs as they now operate is more adequate provision for drugs. An "operational" IRHC as envisaged by the Project provides a drug budget of Rs. 6.8 for each of the 50,000 beneficiaries in the representative IRHC

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*/ The project budgeted about Rs. 6.7 million for these staffers and their support over the life of the project.

catchment area. This may be contrasted with current drug budgets for the basic health services of Rs. 1.0 - 2.0 per capita for the rural population. Health Section 1984, p. 19, observes:

> "It is difficult to say what should be the optimum expenditure for drugs and medicines at a BHU Level. This remains unresolved but this is governed by a number of factors. If a restricted formularly including all essential drugs is adopted for BHUs and the limits are not violated, on an average Rs. 10.0 may suffice per person per year. This will require a separate in depth study to develop a drug policy for the public health system. (Emphasis supplied)

The evaluation team endorses the proposition that such an in depth study be carried out. Such a study should address not only the question of an adequate formulary and quantity of drugs, but also such problems as those suggested by the widely held view that the existing government drug acquisition and distribution system exhibits serious malfunctions, e.g., the widely alleged pilferage of government drugs, mostly for sale in the open market, although sometimes to acquire stocks for own consumption. Although it seems to be taken for granted that such pilferage is on a large scale, its extent has not to our knowledge been measured. Nor did the evaluation team have an opportunity to evaluate the integrity of the drug supply systems to the IRHCs from this point of view. What can be said at this point is that this problem warrants prompt and serious study. Whether or not the present drug acquisition and distribution system is malfunctioning in these ways is, of course, a question which has important implications for the welfare of the consumers of government health services.

This question also has important implications for cost recovery in the government health services and hence for the financial feasibility and sustainability of such programs as the Project's IRHCs. In Pakistan, as in other LDCs, among the more popular proposals for coping with government sector financing problems has been that of charging consumers for drugs dispensed by government facilities. Drug charge schemes will not, by themselves, however, afford any remedy for the kinds of malfunctions alluded to or for other kinds of logistical problems which are apt to be exhibited by government drug supply systems, e.g., problems with timely delivery of those drugs actually ordered (distinguish those drugs which happen to be in the inventory of the central medical stores).

The Project has made a major effort to rationalize and improve the drug supply system for the IRHCs, including the institution of the "bin cards" which were prominently displayed in the facilities visited by the evaluation team. The in-depth study of the drug supply system should include attention to the extent to which and the ways in which Project efforts in this domain have improved the performance of the system.

Pending the clarification that will result from an in-depth study of the functioning of the drug supply system, it would seem prudent

to hold off on attempts to implement drug charge schemes. The in depth study should also include attention to the extent to which, if at all, greater reliance for drug supply and distribution to consumers in the public health services might be improved by greater reliance upon private-market drug acquisition and distribution systems.

1. Accelerated Health Program: EPI Component and the question of Integration into the Basic Health Services Program

Introduction

The Government of Pakistan launched a country-wide Expanded Programme on Immunization (EPI) in 1979 as part of the Fifth Five Year Plan.1/ By 1982, however, progress had been disappointing -- only 2.0% of children were fully immunized. To catch up with the backlog of unimmunized children, a beefed up EPI was included as one component of the Accelerated Health Program (AHP). This note is intended to report some rough estimates of the cost of the accelerated EPI and to comment upon some implications of program cost for the planned integration of EPI activities with the regular basis health services system.

Cost of AHP/EPI

Table I and II following exhibit data relevant for roughly estimating the cost of this program overall, per fully immunized child, and relative to the regular provincial health department budgets. It appears the AHP funding for EPI came on line 1982-83 and over the period 1982-83 thru 1984-85 inclusive, including both federal and provincial AHP/EPI components, a total of Rs. 432.7 million was expended2/.

1/ For a recent, comprehensive review of this program, see Review of the Accelerated Health Programme and Other Selected Primary Health Care Activities in Pakistan, 10 November - 6 December 1984, Report of the Joint Government of Pakistan/WHO/UNICEF/USAID/CIDA/Review Team.

2/ See EPI-PAKISTAN TO DATE PROGRESS REPORT, by Col. Monammad Akram Khan, Dr. Witjaksono Hardjotanojo (undated). The expenditure data are given for Pakistan as a whole, i.e. not broken down by provinces. It would be better, of course, to look at the cost of this program on a province by province basis. The expenditure data reported here do not represent the total cost of AHP/EPI. EPI centers were located in various of the BHUs and RHCs comprising the basic health services system and some portion of these facilities/personnel costs probably should be allocated to AHP/EPI (although, these facilities, which would be in place in any event, are generally so underutilized that the economic cost of these resources to AHP/EPI may be near to zero). In any event, the roughly estimated cost figure reported here will serve for present purpose.

Table I

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Operating Budget */ Health (Rs.m)				Total Province	Federal EPI (Rs.m)	Federal) AHP (Rs.m)	Total Federal	% (9) of (6)	Province Component	%(11) of (6)	Total 9 + 11	% 13 of 6
Year	Balu-chistan	NWFP	Punjab	Sind									
1979-80	37.6	126.9	255.7	130.5	544.7	13.2		13.2	2.4	1.7		14.9	2.7
1980-81	45.8	138.3	309.6	151.1	648.4	9.1		9.1	1.4	3.5		12.6	1.9
1981-82	73.3	171.6	421.9	182.4	849.2	6.2		6.2	0.73	4.5		10.7	1.3
1982-83	96.7	209.6	502.2	213.2	[1021.7]	17.9	67.9	85.8	8.4	26.4		[112.2]	11.0
1983-84	109.1	250.7	757.9	238.1	[1355.8]	18.5	114.8	133.3	9.8	36.4		[169.7]	12.5
1984-85	136.7	322.5	899.0	276.3	[1634.5]		61.6	61.4	3.8	89.2		[150.8]	9.2
	1982-83	through	1984-85	Total:	4012.0			1982-83	through	1984-85	Total	432.7	

*/some figures estimates,
some revised estimates,
some actual

Table II

1	2	3	4	5	6	7	8	9
Province	1985 Population (million) (% urban 1981)	# 12-23 mo */ (million)	% full imm	# 12.23 full 1m (million)	# 2.4 year */	% full imm	# 2-4 full im	(5)+ (8)= Total full 1mm (million)
Punjab	55.0							
Urban	15.1	1.1	74	.814	1.1	84	.924	1.7
Rural	39.9	2.9	82	2.37	2.9	91	2.6	5.0
Sind	21.9							
Urban	9.5	.688	39	.269	.688	51	.351	.620
Rural	12.4	.899	21	.189	.899	45	.404	.594
NWFP	11.5							
Urban	1.7	.123	65	.080	.123	69	.085	.165
Rural	9.8	.710	56	.398	.710	64	.454	.852
Baluchistan	5.0							
Urban	.78	.057	25	.104	.057	23	.013	.027
Rural	4.2	.305	8	.024	.305	19	.058	.082
							Total=	9.0m

1982-83 thru 1984-85 AHP
Expenditure on EPI= Rs.432.7 Cost per fully immunized child = Rs.48.0

*/assume 0-4 = 14.5% of the population - 7.25 % for 12-24 & 7.25 % for 2-4
see of Rapid Pakistan 1983

As column (6) of Table I shows, the aggregate operating budget for the provincial health departments for the period 1982-83 to 1984-85 inclusive came to Rs. 4012.0 million. Thus the additional resources allocated to AHP/EPI over this period mounted to about 11.0% of the regular health department budgets. The data exhibited in Table II yield a finding that (see column 9) about 9.0 million children were fully immunized by the AHP/EPI campaign.*/ Thus, the cost of the AHP/EPI per fully immunized child works out to about Rs. 48.0 -- quite modest by international standards.

Implications of the Foregoing for Integration

It is our understanding that, from the outset, AHP/EPI as a "special" or "vertical" program was intended to be a temporary arrangement, that this program would be integrated was understood from the beginning, that decision still stands today. Whether the regular basic health services network will be able effectively to carry this program remains to be seen. One possible problem is the prospect of "organization failure" in this domain -- the provincial health departments will have to strive to maintain the high level of motivation and apparently tight, effective supervisory regimen which characterized the AHP/EPI as it was operated out of the National Institute of Health.

What about the availability of resources to carry EPI as an integrated component of the basic health services? One problem with attempting an answer to this question is that it has not yet been determined, to our knowledge, just what resources will be required. The AHP/EPI presumably took care of the backlog of unimmunized children. Thus, EPI will continue in a "maintenance" mode covering the 0-1 year age group each year. How much outreach will be required and by whom performed (what occupational categories, how many such workers?) is not yet clear. Some IRHCs visited appeared to believe that the program in the future could be operated in a static mode. The argument here is that the large scale, effective publicity accompanying the AHP/EPI so built demand for immunization that the clients could be expected to come to the BHUs, etc. Some IRHCs, however, seem to be planning outreach coverage to be accomplished by a new occupation category -- the multi-purpose outreach worker. As these programs are implemented and developed, the costs will become clearer.

Meanwhile, we may remark that if resources were required on the same scale as for the AHP/EPI, the percapita cost of a program to fully immunize the 0-1 year groups would be somewhat less than Rs. 2.0. This would represent a relatively heavier loading on the health budgets

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*/ This table reflects a number of assumptions, derived in the main from the sources noted above, which may be more or less approximations to the true state of affairs, eg. the rural-urban split of population by province, the percent of both rural and urban population in each province falling into the 12-23 month and 2-4 years age groups, and, of course, the percentage in each cohort said to be fully immunized. It will not be worthwhile attempting to refine the program-cost analysis pursuant to reckoning unit costs until further investigation is undertaken to assess the reliability of the coverage data. In any event, the figures reported herein should provide a useful approximation for present purpose.

of some provinces than others. However, on average for all provinces, 1985-86 operating budget health expenditures by the provincial health departments came to about Rs. 26.4 per capita for the populations of the provinces. The cost of EPI reckoned as above in its continuing "maintenance" mode would represent less than 10.0% of the provincial health budgets. Whether an operating-budget loading on this order of magnitude could be accomodated depends, of course, on a number of factors, eg the rate of growth in real terms of the provincial health department budgets over the coming years, the amount of the total health budget allocated for preventive services (hospital services now claim the lion's share of the provincial health departments operating budget), and others. As matters stand, the federal government has agreed to continue to provide a federal component for EPI from the federal ADP. As long as this arrangement is in effect, the burden on provincial health development budgets will be eased.

m. Institutionalization of In-service Training

In-service training should be institutionalised in such a way that each individual receives this training periodically throughout his/her career. This requires an organised approach, possibly with some unit of the Department responsible, - for planning individual training schedules, - co-ordinating all training programs, - conducting selected training programs. It is therefore, recommended that an In-Service Training Cell or other permanant organizational arrangement be established in each province to perform this service.

Two different types of management training courses have been conducted under this project - general management and specific management system training e.g. an information system and a drug supply system.

The management system training, trained people to perform a task e.g.to use specific forms and procedures. The general management training also ended with a focus on problem identification and development of work plans to solve these problems, but has been much less effective - regretfully its seems that most participants in the general management course have not followed up on their plans.

It is recommended that the general management course be modified to include fewer topics with greater emphasis on getting participants to do something with what they have learned on return to their posts. For example, the focus could be on encouraging them to conduct regular staff meetings with the training they received helping them to structure these meetings. Institutionalization would facilitate this.

n. Transportation:

The concept of IRHC's and community outreach seems plausible but can only be effective when the means to transport personnel is in place:

- the MO/IRHC is expected to supervise all peripheral outreach,

- the male MT and female MT supervisors at IRHC are expected to supervise the outreach programs of the MTs stationed at BHUs,

- The male MT/or Sanitary Inspector is to act as team leader of the MPHW field team which is to visit all villages in the Union Council monthly,

- the MO/BHU is responsible to supervise the outreach of all staff working from the BHU,

- the FMT/LHV/MW are expected to conduct field surveys and give MCHC outreach in the villages served by the BHU,

Observation in the field showed that transportation was inadequate at all these levels.

b. The Pakistan National Health Plan

The Sixth Plan of Pakistan proposes an outlay of Rs 13.000 billion for the Health Sector against Rs 4.580 billion spent in current prices during the Fifth Plan. This is almost three times the actual expenditure of the Fifth Plan. An analysis of the details of proposed capital outlays for Health Sector would show that 55% funds have been provided for Preventive Programmes and Rural Health Programme. Moreover, a 6.74% outlay has been proposed for Traditional Medicine and Municipal Health Services. The Sub-sector-wise details are as under:-

Capital Outlay for Health Sector

S. No.	Sub-Sector	Allocation (Million Rs)	Per cent Allocation
(i)	Medical education	975	7.50
(ii)	Hospital beds, including teaching beds	3,295	25.35
(iii)	Preventive programmes	1,490	11.46
(iv)	Rural Health Programme	5,660	43.54
(v)	Provision of dental care in the existing facilities	250	1.95
(vi)	Medical research	85*	0.65
(vii)	Traditional medicine	375	2.89
(viii)	Municipal health services	500	3.89
(ix)	Nutrition programmes	250	1.92
(x)	Miscellaneous	120	0.92
	Total :	13,000	100.00

The above table clearly indicates the commitment of the Sixth Plan to the Primary Health Care Programme. The Plan aims at establishing a nation-wide integrated system of health care with emphasis on Primary Health Care. In fact the focal point of the Sixth Plan is the Primary Health Care

*The total allocation for Medical Research is Rs 320 million, the balance is reflected under other sub-sectors.

for all. This is also clear from the perusal of the following physical targets of the Sixth Plan:

Targets of Physical Facilities and Health Manpower during the Sixth Plan period

Facility	Targets	Cummulative Total June 1988
A. Infrastructure		
(i) Hospital beds	11,770	63,170
(ii) Rural Health Centres	355	729
(iii) Basic Health Units	2,600	4,315
(iv) Upgradation of sub-centers, Dispensaries and MCH Centres to BHUs	2,620	2,620
B. Manpower Development		
(i) Doctors	21,000	36,000
(ii) Dentists	600	1,700
(iii) Nurses	5,000	10,000
(iv) Paramedics	38,000	75,000
(v) TBAs/CHWs	30,000	45,000

The programme of development of physical facilities and health manpower, indicated above, is expected to bring the following changes in terms of population per facility in June 1988.

Change in population per facility, June 1988

Facility	Benchmark 1983	Population per facility	Position in June 1988	Population per facility
A. Infrastructure				
(i) Hospital beds	51,400	1,790	63,170	1,673
(ii) Rural Health Centres	374	172,241	729	101,133
(iii) BHUs, sub-centres, Dispensaries and MCH Centres	6,490	12,943	9,090	9,820
B. Manpower				
(i) Doctors	20,000	4,600	36,000	2,940
(ii) Dentists	1,100	83,000	1,700	62,350
(iii) Nurses	5,530	1/6.4 beds	10,000	1/5 beds
(iv) Paramedics	37,000	2,486	75,000	1,413
(v) TBAs	15,000	1/3 villages	45,000	1 village

It has been proposed that all the preventive programmes will mainly function through the BHUs and RHCs; these would form important part of the nation-wide Primary Health Care Programme. The preventive programme will play a crucial role in health care, specially in the rural areas of the country. The main targets of the Plan connected with the preventive programmes are as under:

(i)	Immunization of 24 million children	
(ii)	Control of diarrheal diseases	8 million children
(iii)	Training of TBAs	30,000
(iv)	Spray for Malaria Control	About 20% houses in the operational areas

The Sixth Plan aims at bringing about the following policy shifts in relation to the Primary Health Care Programme:

(i) Emphasis on preventive care by protecting all children by poly-immunization against the six preventable diseases of childhood, diarrhoeal diseases' control and improved maternal care.

(ii) Consolidation of existing facilities in contrast to expansion and development of rural health infrastructure. Expansion is only envisaged in unserved areas.

(iii) Each rural health facility to be manned by a qualified doctor.

(iv) Government patronage to traditional medicine.

(v) Involvement of community, viz local bodies, in Primary Health Care.

(vii) Proper management training to health functionaries.

(viii) Introduction of users' changes to reduce subsidy.

The Plan acknowledges the fact that, alongwith the capital budget, the revenue budget will have to be increased many fold as inadequacy of funds has been the main constraint for establishment of an integrated nation-wide health care system. It has been stated that during the period 1978-79 to 1982-83 the recurring expenditure has increased from Rs 646 million to 1,299 million. This shows an annual increase of 15%. The Plan envisages an annual increase of 20%. At this rate the annual recurring expenditure in 1987-88 would be Rs 3,234 million against Rs 1,299 in 1982-83. Moreover, in the first two years of the Plan a higher operational expenditure was required than could have been covered by the annual increase of 20%. To cover a part of the

recurring expenditure it has been proposed to introduce a system of user charges of the following order:

(i) In urban areas fees for out-patient consultation will be raised from Rs 1 per person to Rs 5 per person per treatment at the end of the Plan.

(ii) In rural area consultation fee will be half of the fee in the urban areas.

(iii) In a phased manner full cost of the supportive diagnostic services, i.e. X-ray films, chemicals, reagents etc., will be recovered.

(iv) A bed charge of Rs 5 per day and diet charge of Rs 5 per day will be introduced for all in patients, in addition to Rs 10, as admission charge.

(v) The charges in private wards will be made realistic and subsidy eliminated.

It has been estimated that the above measures would provide an income of Rs 200 million to the Health System in the first year of the Plan period and Rs 1,250 million in the last year, averaging Rs 500 million per year.

The examination of the Health Sector programme spelled out in the Sixth Plan, relating to Primary Health Care, indicates that a number of issues need to be resolved to make the programme successful. The major issues are identified below:

(i) It is understood that consequent upon resource constraint the Sixth plan has been recently revised This has resulted in reduction of allocation to the Health Sector. This reduction in allocation will affect adversely the establishment of a nation-wide integrated system of health care.

(ii) The Plan estimated an average yearly growth rate of 20% in recurring expenditure in the health budget of the country during the Plan period over the level of Rs 1,299 million in 1982-83. it appears that this target has been surpassed in the first three years because the revenue budgets for 1985-86 of the Health Departments of the Provinces alone add up to Rs 2,152 million against the target of Rs 2245 million for the whole country, including Azad Jammu and Kashmir and expenditure of the Federal Government.

But from the point of view of replicating the system of IRHCs this is far from satisfactory. Under the normal programme of Rural Health Services the average recurring expenditure in three provinces (except Baluchistan) on a RHC ranges between Rs 0.380 million

to Rs 0.137 million per year and on a BHU between Rs 0.109 million to Rs 0.028 million. On the other hand in the Primary Health Care Programme under the system of IRHCs the operating cost of a RHC is Rs 0.510 million per year and of a BHU Rs 0.200 million per year. Even at the most optimistic rate of user charges the IRHCs can at best recover 15% of the operating cost. Moreover during the first three years of the Plan it has not been possible to recover the user charges to the extent envisaged in the Plan document. So it is doubtful whether the IRHCs can be replicated in their present form throughout the country. This aspect of financial feasibility of the IRHCs system has been dealt with in greater detail elsewhere in the report.

(iii) The three tier system envisaged in the Primary Health Care Programme can only function effectively if the requisite number of Community Health Workers are available and are working with commitment. This aspect of the Programme has been weak from the beginning and continues to be weak, neither the requisite number of CHWs have been trained nor those who have been trained are available, nor yet the available ones are functioning satisfactorily. It appears that the Plan has compromised on this issue because under the targets of health manpower during the Plan period the TBAs have been equated with CHWs, and the production target of TBAs/CHWs is 30,000[1/]. However, in a subsequent table CHWs have been altogether omitted and only 30,000 TBAs are mentioned[2/]. It may be argued that TBAs are CHWs, this is only partly correct, because their work does not encompass the full range of activities of CHWs. Moreover, they are not trained as CHWs. Even if the TBAs are trained as female CHWs that still leaves the need for male CHWs unsatisfied. Apparently two alternatives are to train the Pesh Imams and practitioners of traditional medicine as CHWs. But the selection of CHWs should be made by the community so the constitution of village health Committees needs to precede the selection of CHWs. There is no simple solution of this problem, the whole issue requires an indepth study.

(iv) Depending upon the density and scatter of the population a BHU is proposed to be provided for 5,000 to 10,000 population. The BHU will be responsible for providing comprehensive preventive and curative health care, including midwifery, child care, immunization, control of diarrhoeal diseases, malaria control, child

1/ The Sixth Five Year Plan 1983-88, Planning Commission, Govenment of Pakistan

2/ Ibid, Table 5.

spacing, mental health and school health services within its area. Outreach services will be provided primarily for maternity and child health care through trained TBAs. Depending on the terrain and communications 5 to 10 BHUs will be linked to a RHC. Each RHC may have upto 25 beds with laboratory, X-ray and minor surgery.

The following points need serious consideration in relation to the programme outlined above:-

(a) It can only be implemented if effective outreach services are provided but the Plan proposes outreach services primarily for only maternity and child health care.

(b) It would require the production of a large number of multi-purpose workers. It was found that training of these personnel, on the scale envisaged, had not started.

(c) Linking of 5-10 BHUs to a RHC, instead of the present number of 4, is likely to create problems with regard to effective supervision.

(d) It has been proposed to establish the new RHCs with more beds and additional facilities. This needs to be examined in the context of the increased recurring cost and the extent to which user charges can be recovered.

7. Cultural Issues:

The Pakistan population is predominantly muslim. The women are expected to observe 'purdah' and keep away from all males who are not the close relatives. Although the village women may not put on the veils, a male health worker, even from the same village, would find it difficult to reach them. He will have access only in the presence of male members of the household but that also would be quite limited and may not exceed beyond immunizations, clinical examination of children and some health and nutrition education. This also applies to female health workers. They would not be able to extend health care services to the men.

It is generally the elderly lady of the house who decides what type of treatment is to be provided when a child or a woman falls sick and then who should be consulted and when. First choice is a home remedy followed by a Hakim, a private allopathic practitioner and as a last resort a public sector facility. For health problems of pregnant women and neonates, a dai is normally consulted. Women as well as men prefer to disucss health matters with workers of the respective sex. Primary Health Care in these settings requires the services of both males and females workers. Nonavailability of female staff for rural areas, especially in the Provinces of Sind, NWFP and Baluchistan is a serious constraint.

Every Union Council (population 15-20 thousand) is planned to have a Basic Health Unit, where a female medical technician/lady health visitor will be posted. In addition, there will be a male physician and one outreach team comprising of a Male Medical Technician/Sanitary Inspector, a malaria supervisor and a vaccinator. Knowing that the female medical technician will not be able to reach all the villages in the Union Council, she is excluded from the outreach teams. But the health problems of motherhood and newborns can not be ignored while extending the primary health care services to the people of the Union Councils. On one hand the female medical technicians are unwilling to work in villages especially in the three aforementioned provinces, and on the other even in Punjab their mobility is quite limited. In most cases, she visits some of the houses in the village where BHU is located. Here also the village heads have to take some precautionary measures before she could move freely in the locality. The suggestion that the male medical technician accompanies her for visiting other villages is not acceptable to FMT. She could visit other villages only where she is provided a conveyance by the respective village head and only when an elderly lady preferably a dai accompanies her. At IRHC Mochiwallah where the programme has been on the ground for quite sometime, the four female technicians have been able to cover six villages only. Even if it is assumed that the Lady Health Visitors/Female Medical Technicians will visit all the villages in the catchment area, their output will remain unsupervised because of the absence of a female physician at the BHU.

The output of multipurpose health workers team is limited to immunizations, detection of malaria cases, selective sprays, promotion of ORT, treatment of minor ailments and health education, during their once a month visits. The plan is silent on the elements like prenatal care childbirths, promotion of breastfeeding, child growth monitoring, weaning and supplementary feeding and child spacing. These tasks could be performed effectively by a female community health worker preferrably a dai. By training the dais residing in the respective communities and by establishing contacts with them at regular intervals the female medical technician available at the BHU could give more output in the current situation where she can not visit the villages at some distances. Dais all over Pakistan are willing to take the training and work with the health infrastructure, where the system is supportive. In the thickly populated areas of Punjab the dais have no difficulty in moving from one village to other and can reach the training centers at the appointed time. However, the problem of wide scattering of rural population in Sind, NWFP and Baluchistan could be overcome by arranging transport for commuting Dais during the period of their training (say 15 days). A mobile training team approach is successfully implemented already in Sind province.

9. Proposed Project Focus on Operations Research and Epidemiological Studies and their Application to Service Delivery

The team encountered repeatedly a wide variety of situations in which program personnel at different levels lacked the information necessary to design, implement, and monitor service delivery activities efficiently. Organized and reliable information on the quality of care, the effective population coverage of priority services, the impact of program activities on health status, and disease patterns in particular was scarce. In this section, we outline the rationale for substantially expanding project efforts in this area and propose a general structure for such an activity.

The team found no disagreement regarding the overall objectives of the project in terms of measurably reducing maternal and child morbidity and mortality. There was likewise a broad agreement regarding the set of activities that forms the most promising strategy to reach these objectives. The Sixth 5 Year Plan, provincial officials, and the project paper each emphasize diarrheal disease control, particularly ORT; EPI, including tetanus immunization for fertile age women; provision of family planning methods; effective treatment of lower respiratory tract infections in children; detection and sustained treatment of active tuberculosis cases; nutrition monitoring and active intervention; and passive case detection and clinical treatment of malaria.

On a technical level most of these interventions are relatively well-defined, although this is certainly less true of the educational components. The details of how to most effectively organize such activities, even the nature of current activities is far less certain. Nevertheless, provincial officials repeatedly noted a shortage of project resources available for any activities other than direct program implementation and training.

The application of research techniques to guide practical improvements in the cost-effectiveness of health services is a relatively new field. It is an area in which AID has accumulated a substantial store of experience, with what is arguably the largest operations research program in the world. In the past ten years, the Bureau for Science and Technology has supported studies in more than 40 countries. Thus, a wide range of technical support could be made available as required.

1. Program content. We would propose four major content areas to respond to the range of anticipated requests:

a) Descriptive Research: Much of what program personnel actually do, or fail to do, cannot be derived from routine records and supervisory visits. Many important service delivery problems involving level of effort, quality of care, population coverage, relative cost, and supervisory effectiveness can be described adequately only through specific field studies. Unusually successful or innovative local initiatives with the potential for wider applications may likewise remain unnoted by routine management reporting mechanisms.

A comprehensive exercise of this nature we would term a Systems Analysis. This approach would describe program activities in terms of functional systems such as training, logistics, recruitment, supervision, financing, and service delivery. Each of these would be further subdivided into distinct subactivities, maintaining a focus on the specific services listed above. More concretely, actual data collection activities would include interviews with staff and community members, structured observations, questionnaries, and record reviews following a standard protocol. For a district-level systems analysis, full time team of five or six professionals plus interviewers would probably require about four months once the detailed protocol has been developed and approved. The final product would be a fairly detailed description, using objective measures, of the process by which selected services are delivered, including support activities. A systems analysis differs from an evaluation in that it focuses on description rather than assessment, and in the magnitude of data gathering.

The results of the systems analysis would provide management level officials with a basis for selecting priority areas for prospective operations research studies (or more routine administrative measures) to address problems in service delivery. More focused descriptive studies are, of course, also possible, such as an anlysis of the supervisory or training systems only.

b) Prospective Operations Research: The design of even a simple delivery system reflects innumerable decisions, most of which are necessarily based on professional judgement rather than empirical data. These decisions range from broad strategies, such as the utilization of volunteer CHWs or Dais to very specific program elements, such as the content of the messages MTs are to convey to promote immunizations. The objective of operations research methodologies (which continue to be developed) is to inform these decisions at the level of precision and cost appropriate to the decision to be made. As we will use the term, operations research is a strictly practical attempt to apply a variety of research methods to management decisions.

Some operations research methodologies have a negligible cost and produce results that are virtually immediate. These include group consensus techniques developed primarily for agriculture decision making. The object is to systematically exploit the knowledge and judgement of a group of experts to identify a range of possible solutions to a given problem and then select the most promising options. Examples include multiple-criteria utility assessment, delphi, nominal group technique, and system modeling. These approaches primarily constitute an alternative to conventional hypothesis formulation which generally relies on the intuitive insights of an individual, sometimes combined with informal, unstructured group discussions. In both cases, the end product is the proposition that one or more courses of action make sense.

In most cases, this step is followed by traditional social science research such as a pilot program or a quasi-experimental

comparison of two or more alternatives. The central distinction for the purposes of the project is essentially practical. We would propose a strategic emphasis on small-scale, relatively unsophisticated studies that can produce results rapidly. We anticipate that few of the management decisions at issue will require highly precise measurements. With limited resources, larger studies reduce the opportunity to study other, perhaps equally important issues which would then continue to be addressed on an intuitive, non-empirical basis. Experience also suggests that ongoing changes in the program and its environment can be expected to reduce the value of longer term studies. It also seems likely that relatively simple studies will increase the opportunity for meaningful participation by service delivery and management staff, enhancing the prospect for institutionalization of such research. We would also argue that the very nature of the issues involved in the project is conducive to such an approach. It is the highly specific, descrete service delivery tasks that have been most neglected by past studies. Issues such as the promotion of tetanus immunization for fertile age women remain largely unexamined.

c. Epidemiological Studies and Surveillance:

Information on patterns of health and disease is an essential compliment to information on the performance of the health care system. In many cases, the distinction is largely a matter of emphasis, with considerable overlap. Like operations research, the objective of epidemiological studies is to provide a basis for concrete actions to improve health status. The modifications in the reporting system developed under the project represent an encouraging start, but a substantially expanded effort in the collection and analysis of epidemiological data is badly needed.

The range of relevant measures that are not generally available to managers includes: 1) vaccine efficacy, 2) birth outcomes of trained dais, 3) current incidence of vaccine-preventable diseases, including neonatal tetanus, 4) major etiologies of infant pneumonia and antibiotic sensitivities, 5) immunization status by age, 6) impact of program interventions on nutrition status, 7) coverage and outcome of diarrhea case management, 8) incidence and etiology of diarrhea, 9) birth interval, 10) treatment outcomes of active tuberculosis, and a number of others.

There are a number of low-cost techniques for generating estimates of parameters such as these, including rates based on an estimated population base. Each of these techniques shares a dependence on trained personnel of demonstrated competence in well-defined activities and close supervision that includes verification of randomly-selected reports. Poor quality data may be worse than useless if they lead to a misallocation of resources.

Sentinel surveillance is very low cost technique that permits the monitoring of incidence trends longitudinally through complete reporting of a small number of selected health institutions,

most frequently hospitals. The team did not have the opportunity to assess the records maintained by hospitals in the project area, but this approach has proved feasible in a number of settings. Our impression is that one major criteria, that the hospital draw an adequate number of patients from a wide geographic area, is generally met by a large number of hospitals in Pakistan. The ability of the institution to diagnose the condition in question requires consideration. Neonatal tetanus, for example, rarely presents a diagnostic problem, but ascertainment of the mother's immunization status depends on clinical standards that are more variable. Routine assessment of nutrition status by anthropometry is uncommon in most hospitals. While it would be possible to use project resources to improve record keeping where it is inadequate, it would be highly preferable to select an institution where several years of reliable baseline information are available.

Sentinel surveillance of course provides no information about the population that does not make use of hospital facilities, and the rural population is generally under-represented. The project appears to have adequate personnel for carrying out active surveillance in household cluster samples in rural communities. This will, however, require dealing with difficult cultural obstacles related to access to households and the mobility of female workers. Such a system would typically involve monthly visits to about 50 households in 50 randomly selected rural communities over the course of a year. Interviewers with the skill level of MTs could reliably monitor the incidence of diarrhea, measles, pregnancy status and outcome, nutrition status by anthropometry, facility utilization, immunization status, and mortality.

The programs' extensive infrastructure could also be applied to a cause of mortality study. This could be based on a financial incentive for reporting deaths similar to that used successfully in the smallpox eradication program, combined with a semi-structured followup interview by a physician.

One of the most striking weaknesses in clinical management observed by the team is the virtual absence of followup information. Followup interviews of a relatively small number of cases would help clarify a number of outstanding issues related to effectiveness of treatment regimens, patient compliance, referrals and subsequent treatment. A related issue concerns the adequacy of the diagnosis and management of acute lower respiratory tract infections in children. Even if the patient followup study clarifies the diagnostic issue, optimal management remains a source of concern. Treatments recorded for similar symptoms varied widely and included a high proportion of incomplete regimens and questionable choices of antibiotics. The project could sponsor a review of cases treated in a facility with a capacity for culture and sensitivity, to be carried out by a panel of distinguished pediatricians. This could then provide the basis for standardized treatment protocols to be supplied to medical officers. A similar approach could be applied to the management of tuberculosis patients, another area where the clinicians we interviewed appeared to be providing inadequate therapy to a large degree. We were

also left with the impression that medical officers could substantially increase their collaboration with the surveillance efforts of the malaria eradication program, both in terms of submitting blood slides from presumptive cases and in documenting the course of treated patients. These clinicians would benefit from specific guidelines and information on the incidence of chloroquine resistance and the appropriate role of alternative drugs such as Fansidar.

d. Implementation Assistance: To the extent that the research program leads to findings that provincial officials wish to incorporate into the regular delivery system, it would be appropriate for the project to assist in this process. Such assistance might include staff training, written materials, and technical assistance from U.S. or Pakistani private sector sources.

2. Administrative Arrangements: The chief administrative consideration is the effective implementation of a substantial number of fairly small research activities. We would advise against a strategy that relies on program personnel whose major responsibility is service delivery. At the same time, it is obviously desirable to encourage the maximum feasible participation by Ministry professionals at the federal, provincial, and local levels. Thus, the structure of the program should be flexible enough to accomodate a range of such participation, since the level of interest and availability of Ministry professionals is difficult to predict. It would be reasonable to speculate that to the extent that research activities generate findings of practical value, the inclination of the Ministries to second staff for research activities will increase. Ideally, the value of these activities will prove so persuasive that the ministries will institutionalize the program. This further reinforces the importance of providing adequate technical resources from the beginning, including the capability to engage a range of national institutions with expertise in health, administration, and survey research.

We would recommend that the existing project staff be expanded by the addition of a Senior Scientist with expertise in operations research and a junior scientist with training in epidemiology, and that additional positions be created for an administrator and secretary. This expanded project staff should be supplemented by consultants with specialized expertise as dictated by the studies that are developed.

The team is not in a position to suggest a mechanism by which the ministries would approve specific study proposals or direct that a specific issue be addressed. Assignment of ministry staff to participate in studies is of course, also their decision. The actual data collection could be carried out through a combination of long term and contracted staff. Design and analysis efforts could be assisted by consultants and contracts with qualified national institutions. These arrangements could be carried out partially or entirely through the AID/Washington Primary Health Care Operations Research Project, which has carried out nearly 50 such studies and is already developing a protocol for systems analysis focused on selected primary health care services.

It would also be advisable to provide resources for disseminating study results and related technical and project information through a periodic bulletin.

3. Illustrative Research Topics:

a) The Voluntary CHW Question - Is it realistic to expect to rely on these workers in large numbers?

This is an important question. As designed, the IRHCs scheme was to rely on these workers to provide vital public health services and, more generally, to provide provider/population ratios such that "coverage" by the scheme implied reasonable access to care. If this is not a realistic prospect, the IRHCs scheme will need to be redesigned.

There is at present difference of opinion on this question. It is notable that the Sixth Plan for Health makes no mention of voluntary CHWs. Nor does the recent Evaluation of the Rural Health Programme in Pakistan, Health and Nutrition Section, Planning and Development Division, Government of Pakistan, November 1984. Indeed, it appears that at the Federal level, the CHWs have been written off as a scheme that simply is not feasible. On the other hand, at the periphery, some of the IRHCs still act as if this scheme were viable. eg. they post lists of persons alleged to be CHWs and even upon occasion produce individuals who are said to be CHWs, etc. There is also opinion in the field in line with the opinion at the Federal level that this is not a feasible scheme.

It is very important that investigations be undertaken to lay this question to rest. If this scheme is not in fact feasible, significant redesign of the IRHCs scheme will have to take place to find ways to deliver those services heretofor supposed to be delivered by the CHWs. As long as this question is not laid to rest, and in spite of a lack of hard evidence that the CHWs scheme is feasible, there are those who will go on acting as if this scheme were in fact feasible, thereby putting off what in the end may have to be significant redesign of the IRHCs scheme.

b. The Integrated System:

Integrated Rural Health Complex approach is designed on the premise that 4-10 BHUs and a Rural Health Centre could be linked not only for supervision and patient referral but also for planning and execution of Primary Health Care to serve an assigned population in a specified geographical area. The three-tiered system comprises a Health Worker (Voluntary) at the community level, Paramedical Medical Technician at the Basic Health Unit and Medical Officer at the Rural Health Center. Adequate financial and administrative authority was planned to be delegated to the Incharge Medical Officers to enable the complexes to become self-sufficient in the management of the services.

The concept of the integrated system never materialised. The medical officer who was to supervise the Medical Technicians did not receive the promised transport. The Medical Technicians who were in turn to supervise the Community Health Workers faced the same problem of non-availability of transport. The desirable authority, to make the RHC and the BHUs function as an integrated complex was never delegated. In addition the services available at RHC are qualitatively not better than those at the BHUs. The indoor beds at RHCs remain vacant and the Laboratory service are grossly underutilized. The posting of a female medical officer may attract some female patients to Rural Health Center, most of whom will be the result of direct reporting rather than due to referral from BHUs. In a number of cases, the BHUs are located so far away from the RHC that the patients may find it convenient to visit a Tehsil or a District Headquarters Hospital where far better facilities are available rather than to visit a RHC and be referred again to higher level. Where surgical operation theatres at RHCs are utilized the patients' number increases. This may also happen when X-ray facilities become available at RHCs. In the present shape it can safely be concluded that the referral system has not been established as was planned.

The situation has further, changed on another account. Medical Officers are now posted at BHUs, where the Medical Technicians were previously expected to work independently. At the RHCs instead of one, now there are two male medical officers. It was proposed that the second Medical Officer be assigned full time duties of supervising BHUs and the Outreach Teams. On the other hand it is stated that the Medical Officer incharge of BHU will supervise the outreach team of his area. In most cases the second M.O. at the RHC may be junior to those posted at BHUs. Unless the duties and responsibilities of each level are clearly defined, there are bound to be some frictions resulting in deteriorating the situation further.

It is obvious that the Integrated system has not worked as was planned. It is also not known whether the integrated system has definite advantages in the overall perspective of the current social, administrative and health care delivery systems. Only advantage of the name could be to separate IRHCs as a GOP-project supported by USAID from the general health infrastructure the details of how IRHCs actually function require documentation which is feasible only through an adequate study.

c. Implementation of outreach activities:

There are a number of practical issues regarding this basic strategy that could be addressed through fairly straightforward studies. Outreach activites involve considerable direct and opportunity costs and the cost effectiveness of different approaches certainly merits study in a program of this magnitude. A study could examine the average impact on behavior of different numbers of home visits and group talks. It is unclear, for example, what level of effort should be devoted to educating women in ORT. Such a study would require a measurable

objective for ORT education. A variant of this general approach would be to examine the relative effectiveness of qualitatively different educational content in, for example, attempting to alter the feeding practices of a mother with a malnourished child. MTs appear to be repeating a single approach in this area, with little sense of whether or not they are having any real influence.

Different program officials expressed widely divergent opinions about how MTs can travel to rural villages. Cost of travel is obviously a major consideration. A preliminary research approach could tap local creativity and initiative by providing different levels of travel allowance and quantitatively describing the level of outreach visits generated by a range of different approaches. A few of the more promising strategies could then be selected for further study, including more formal operations research directed towards balancing the competing objectives of minimizing travel costs and maximizing the health impact of MT visits.

d. Dai Training:

The emphasis of the Sixth Plan on training very large numbers of dais suggests that comparing alternative approaches to this activity would be worthwhile. Experts in training, obstetrics, and public health could, through group consensus techniques, develop one or more training approaches substantially different from the current model in length, cost, content, or training methodology. One or more of these alternatives could then be compared empirically with the current model in terms of defined competencies and actual practice. The training of MTs and MPWs could be examined in a similar manner.

e. Supervisory Methodologies:

There is an immense range of specific, well-defined issues in supervision for which there is virtually no empirical information. It is common for health programs to provide for only minimal supervisor visits, and for those visits that do take place to have no relationships to performance. Even in the face of patently ineffective supervision, one finds few training courses or guidelines designed to improve supervisor performance. Indeed, rarely do such programs measure or even define what constitutes good performance in a supervisor. Whatever other factors may be involved in this common pattern, it is clear that we know very little about how to train and organize higher level health professionals to support the work of their subordinates.

As we noted previously in this report, the health ministry's focus on selected primary health care services permits us to define service delivery in terms of a number of discrete, observable tasks. For any one of these, we have observed that supervisors may apply at least 11 techniques to identify and resolve shortcomings. This theoretical model does not indicate which of many possible approaches for a given task is most likely to work. Neither does it guide the

supervisor in deciding how to make the best use of his time during a given visit. It is unclear, for example, what level of effort the supervisor should devote to estimating EPI or ORT coverage through household visits. Perhaps it would be equally effective to devote a lesser amount of time to interviewing the MTs about their efforts to provide good population coverage. A series of small scale studies addressing questions such as this would provide practical guidance for defining the supervisor's role in providing health services. The role of higher level supervisors could be studied in a similar manner. Making more effective use of scarce, highly trained technical staff appears to be an urgent need in the program, particularly at the District level.

f. Immunization Drop-out Rates:

The baseline survey found that on the order of 70% of children who started a polio or DPT series did not complete it. This situation has improved since the survey, but the EPI records examined by the team suggest that the drop-out rates continue to be a serious problem. Yet, at the level of the individual child and mother, there is little information on the effectiveness of different approaches towards avoiding drop-outs or convincing mothers to complete the series. This issue may grow in importance as the AHP is phased out, and merits study.

g. Staff Incentives:

Many management experts argue that performance-based incentives are a highly effective measure. The project could support a straightforward, carefully limited trial of one or more approaches without requiring major budgetary or policy changes. Such an approach has been highly successful and cost-effective in ORT promotion in the BRAC program in Bangladesh for example.

h. In-Depth Participant Observation Studies:

The team was told of many cultural obstacles to more effective service delivery that seemed important, but remained ill-defined. The design of the MT curriculum and the content of educational messages in the program do not appear to take into account local beliefs and practices regarding diarrhea, immunization, the concept of prevention and other basic cultural factors that affect health services. The response of different cultural groups to different styles of preventive and educational activities by program staff are poorly understood. We suspect that impressions regarding rural attitudes toward gender roles are often superficial and oversimplified. As a result, the project may be underutilizing both male and female staff in outreach activities. These are important issues that could be addressed through support of focused antnropological studies.

i. School Health Activities:

In some instances MTs and CHWs are involved with school health activities, as school teachers seem to be frequently selected as

CHWs or health committee members by the MTs. No evidence was noted that a real school health program exists having clear objectives, targets and the means to achieve them - they appear to be largely ad hoc in nature.

It is recommended that one or two management analysts or training specialists be assigned to survey existing school activities, design one or more models of complete school health programs (involving MT/CHW), then to train selected personnel to implement this program and monitor its progress. If one or more of these programs is successful, these should be incorporated into the MT and CHW manuals and training.

j. Privatisation of Basic Health System:

To compare the effectiveness and efficiency of the private with the public sector in delivery of health services, on a trial basis one or two IRHC's could be handed over for a period of 3 to 5 years to a private organization eg the Aga Khan Medical College Community Health Sciences Department.

For this to be a fair and useful trial, some basic criteria are:

- during the final government-controlled year, the staff should be aware that their achievements will be compared with the following year's privatised program,
- the IRHC's achievements in both curative and preventive service during the final year of government control will have to be adequately measured,
- all funds currently spent for salaries, allowances, personal benefits, maintenance, drugs and other supplies should be given to the selected private organization,
- existing personnel should be given the option of transferring to another government position or remaining on whatever conditions the private organization establishes, including the right to fire for inadequate performance,
- the private organization should receive some financial support during the prior to start-up year in order to adequately plan its program, however, it should not be allowed to interfere in anyway with the running of the IRHC to which it will be assigned.

k. The management efficiency question:

Given the basic organizational structure (e.g. personnel policies, budget procedures, etc.) of government health-services delivery

systems, is it possible, by even the most assiduous and appropriate attention to management, administration, supervision and the like, to achieve efficiency in the performance of these systems?

This is a very important question. For many years, many USAIDs in many countries have fielded management-type projects based upon the assumption that the answer to this question is "yes". The results have uniformly been disappointing. This may be because the real answer to this question is "no". If so, USAID activities to achieve organizational efficiency will have radically to be redirected.

One school of thought holds that the answer to this question is indeed "no". This school regards these systems as fundamentally flawed from the point of view of the incentives afforded system participants and from the point of view of the lack of opportunity afforded would be managers to achieve efficient performance. This school regards it as almost certain that organizations structured as are government health-services delivery systems will exhibit massive "organizational failure" -- and this school feels that attention to management, administrative and supervisory skills and procedures cannot afford a remedy for the position.

Another school of thought entertains the hope that the answer to this question is "yes". This school will concede that many past efforts in this domain have not yielded good results. According to this school, however, this is because the attention given management, administration, supervision and the like has been inappropriate and inadequate. This school holds that with appropriate attention to these matters, the efficiency of performance of these organizations can significantly be improved.

It is very important that this question be laid to rest. Until it is, much time and energy will continue to be expended in this domain upon what may in fact be bootless enterprises, either because the attention given these matters is inadequate and inappropriate or because the enterprise itself is just not feasible. In the meanwhile, potentially more promising approaches to increased efficiency in the government health-services sector (e.g., pulling some government facilities out of their regular Ministry of Health aegis in favor of some kind of parastatal status) will not be given serious consideration.

1. A study of the OP-fee schemes operating in the basic health services system in Pakistan. In various countries it has proved very difficult to maintain the integrity of such systems. Is this a problem in Pakistan? Do fees result in a reduction in utilization rates? To what extent are these fee schemes income related such that those who cannot pay are not obligated to do so? How is this feature of the scheme administered? Is it realistic to expect high collection rates under fee schemes such as those now operating in Pakistan under which revenue from fees reverts to the exchequer? It is said that moves are underway in Sind Province to return to the facilities marketing services some substantial portion of revenue from these fees. What has been the progress on this front?

m. Drug Supply System

An in-depth study of the operation of the drug acquisition and supply system in the government health services system. Topics/ questions to be addressed would include; (a) what is an appropriate (optimum) rate of resource commitment for drugs to these facilities? (b) an evaluation of the integrity of the system, e.g., how much leakage is there from the system owing to pilferage? (c) might consumers of these services be better served by greater reliance upon the private-market for drug acquisition and distribution to consumers?

n. Utilization of Health Services

Population-based research to determine from what providers and provider systems consumers of health care in Pakistan are now getting what kinds of services and on what terms.

Appendix A

Personnel Interviewed - in order of encounter.

William Goldman	AID/ANE Technical Resources Office, Washington DC
Mona Grieser	PRITECH, Arlington, Va
Jinny Sewell	AID/Office of Population, Washington D.C.
Nadia Maraviglia	World Bank, Washngton D.C.
Michael Mills	World Bank, Washington D.C.
David Oot	AID/HPN: ANE Bureau, Washington D.C.
Heather Goldman	AID/PHCP - HPN Office, Islamabad
W. Mckinney	AID/Evaluation Office, Islamabad
Ashraf Mirza	AID/PHCP, HPN Office, Islamabad
Dr. Mushtaq Chaudhary	DDG, Basic Health Services Cell, Islamabad
Dr. Zafar Ahmad	AD, Basic Health Service Cell, Islamabad
Abdul Sattar Chaudhary	Federal Health Education Advisor, Islamabad
Dr. Siraj-ul-Haq Mahmood	Chief: HNP Planning Division, Islamabad
Major Gen. A.I. Burney	Director, National Institue of Health
Jimmie Stone	Deputy Director/USAID
Raymond S. Martin	Chief, HPN/USAID
Jeff Malik	AID/Project Developoing & Monitoring
Dr. Javaid Rasool Zar	DDHS, Rawalpindi Division
Dr. Elahi Baksh Soomro	Director of Health Services, Punjab, Lahore
Choudhary Asma't'ullah	WHO, Lahore, Punjab
Dr. Akbar Khan	DHS- Baluchistan, Quetta
Dr. Riaz Baluch	SOH- Balucnistan, Quetta
Dr. Sana'u'llah Malik	Project Director-BHS, Baluchistan, Quetta
Dr. Mosa Baluch	EPI Project Director
Dr. Niamat-ullah Ghichki	Malaria Chief, Baluchistan
Dr. Ali Ahmad	P.T.O. M.MT School Quetta
Dr. Capt. Imtiaz Ali	D.H.C. Dhadar IRHC
Mr. Jamil Ahmad	Tutor M. MT School Quetta
Mr. Hakim Baluch	Tutor M. MT School, Quetta
Miss Shaifta Durrani	F.MT School, Quetta
Prof. Saleh Memon	SOH- Sind, Karachi

Dr. Sajjan Memon	Director Health Services, Hyderabad
Dr. Sanaullah Qureshi	Divisional Director, Sind Health Department
Dr. John Bryant	Director Medical Services, Agha Khan University, Karachi
Professor Mohd. Ilyas	Curriculum Consultant, PHCP, Karachi
Dr. Mehr Omer	PTO, Female Medical Technician, Hyderabad
Dr. Mohd. Ashraf Memon	District Health Officer, Badin, Sind
Dr. Gul Hasan Shaikh	District Health Officer, Thatta, Sind
Dr. A. Hamid Chaudhary	MO Incharge, Darro
Dr. Ali Sher Khan	SOH- NWFP, Peshawar
Dr. Mohammad Ayaz Khan	DHS- NWFP, Peshawar
Dr. Nazir-ul-Haq	Former Project Director-BHS,NWFP, Peshawar
Mr. Abdul Majid	Planning Officer, BHS Cell, Peshawar, NWFP
Dr. Abdullah Jan Khalil	Divisional Director, Peshawar,Division NWFP
Dr. Rodia Shah	Infectious Diseases Hospital, Peshawar
Dr. Hakim Khan	District Health Officer, Peshawar, NWFP
Dr. Nadir Khan	Director Hazara Division
Dr.Amir Rahman	District Health Officer, Abbottabad, NWFP

Project Contract Staff

Mrs. Mahmooda Nasreen	Training Specialist, Punjab
Mrs. Nasim Akhtar Wahab	Training Specialist, NWFP
Mrs. Shahnaz Imam	Training Specialist, Sind
Ms. Tasleem R. Paracha	Training Specialist, Baluchistan
Mr. Zaffar Abbas Shah	Management Analyst, Punjab
Mr. Arshad Mahmood	Management Analyst, Punjab
Mr. Zamin Gul	Management Analyst, NWFP
Mr. Ijaz H. Shaikh	Management Analyst, Sind
Mr. Mohammad Saghir	Management Analyst, Baluchistan

Appendix B

Sites visited during field visits

Female Medical Technician School, Hyderabad

RHC, Tando Jam

District Health Office, Badin

BHU Punjab Chak

BHU Haji Muhammad Bohar

BHU Abdullah Shah

RHC, Darro, Thatta District

District Health Office, Peshawar

RHC, Nahaqi, Peshawar District

RHC Khairabad

BHU Inzori

District Health Office, Abbotabad

RHC Havellian

BHU Salwala

Chomba Village

RHC Bagga Shaikan, Rawalpindi Division

BHU Sanghoori

DHS Office, Punjab, Lahore

BHU Ahdian

RHC, Mochiwala

BHU Saeed Abad

Medical Technician Training School, Jhang

RHC Kot Momin

BHU Saleem

RHC Pindi Bhattian

DHS Office- Baluchistan, Quetta

SOH Office-Baluchistan, Quetta

Female Medical Technician Training School, Quetta

EPI Programe Office - Baluchistan, Quetta

RHC Dhadar, Karachi District

Mir Bagh- MT field-training village

BHU Kodraisani

Braheam Boran- MT field training village

BHU Muskat

Appendix C

DOCUMENTS REVIEWED

AID Project Paper	- Pakistan-Primary Health Care, September 1982
PRITECH	- Evaluation of the Pakistan National Oral Rehydration Program, Septembe 1984
	- Medical Technician Curriculum Revision, September 1984
MEDEX	- Management Systems Studies for Establishment & Operation of IRHC's December 1980
GOP	- Module for Multifunctional Health Workers- Malaria - Module on Primary Health Care
	- Module on Training of Multipurpose Workers
	- Evaluation of the Rural Health Program in Pakistan, November 1984
	- Health Guards in Northern Areas of Pakistan, November 1976
PHCP, Pakistan	- Health Information Study for IRHC's, Information System, Module I
	- Health Information System for IRHC's, Module II
	- Minitoring System for IRHC's, Information System, Module III
	- Inventory Control for IRHC's, Supply System, Module I
	- Essential Drug List for IRHC's, Supply System Module II
	- Distribution of Drugs for IRHC's, Supply System Module III
	- Progress Report on Training Activities, Baluchistan
	- Progress Report on Management Component, Baluchistan

Appendix D

MODEL: A COMMUNITY-BASED HEALTH PROGRAM:

The following is a first attempt to develop the outline of a community-based health program appropriate for Pakistan. It should not be adopted as is, but rather used as a basis for discussion to develop a model for trial by the MTs and their advisors.

Phase I

The MTs enter a village, meet with the community leaders and explain that their purpose is to try to help the village to learn more about health matters so that the people might improve their status of health. At this early stage, no mention is made of a village health committee (VHC) or community health workers (CHW). Instead, through discussions with the village leaders and if possible other groups of villagers, the visitors teach the people about one selected health topic e.g. ORT in treatement of childhood diarrhoea, and encourage them to take action, individually and collectively. (A group of youth might be the receptive audience who in turn are asked to talk about ORT with their parents then to report their reactions back to the group). The MTs follow up on this initiative on subsequent visits, then they follow a similar approach for a second health topic. Throughout this phase, the focus continues to be only on health topics and not on health workers or a committee.

Phase 2

With the help of the village chowkidar, and any other individuals who show an interest in the activities during Phase I, a house-to-house survey of the entire community is conducted; to asses the health status of each family. The purpose and the results of this survey are explained to as many people as possible.

Phase 3

The results of the survey are now discussed with the community leaders and the health problems implied by the survey pointed out. Emphasise to the community leaders that they are capable of taking action to reduce some of these health problems. Suggest that some form of community organization- there might be separate groups for men for women or for youth; there might be different groups for different sections of a large or factionalised community. The important factor is that the members of any organization must be interested and willing to work. Throughout this phase, continue to emphasis that the responsibility for improving health belongs to the community, that the MTs are only there to assist the members to better understand their health problems and the options available to them for action.

Phase 4

If the community has established one or more organisations, the MTs conduct a mini-training for the members on one health topic focussing on

action which their group can take with respect to the topic - a 'cafeteria' approach might be adopted by suggesting different alternatives with the decision left to them. Help them to implement whatever decisions they make and to evaluate their effectiveness. Repeat this process with one or two additional topics.

Phase 5

By this time 6-8 months will have passed since the introduction of phase I . Actions during this next phase are unclear. Note that the concept of a community health worker or volunteer has not yet been mentioned - this may be the time to do so, with a suggestion to organization that male and female CHWs be selected for training by the MTs. Alternatively it may be preferable to encourage several of the organization's members to 'specialise' with each becoming an 'expert' on one health topic. In this situation, the, MTs could give more detailed training to different individuals each on a different topic thus creating informed specialised promoters.

NB: This plan is based upon an extensive emphasis on conducting very short-term, mini-training sessions for villages and VHC members. Since the most important element of a community-based approach is for the community to take action on health topics, education is essential to help them better understand what actions they might take.

During the research stage, with the management analysts/training specialists serving as MTs, they will need to conduct several of these mini-training sessions. To do so they should prepare draft curricula and training aids, then improve on them after the experience of teaching the session. At the conclusion of the study, a workshop can be conducted to consolidate these materials into a set of training materials for use by MTs, to conduct 2-4 hour courses for villages, each on a different topic.

APPENDIX E

STATEMENT OF WORK FOR THE MID-TERM EVALUATION

SUBJECT: INTERIM EVALUATION OF PRIMARY HEALTH CARE PROJECT (391-0475)

1. SUMMARY: THE OBJECTIVES, SCOPE OF WORK, AND COMPOSITION OF THE TEAM FOR THIS EVALUATION FOLLOW. THE MINSTRY OF HEALTH CONCURS. THE OBJECTIVES AND SCOPE OF WORK HAVE BEEN REVISED SLIGHTLY; HOWEVER, THE IMPORTANCE OF THIS EVALUATION TO USAID, THE BACKGROUND, AND PROJECT DESCRIPTION REMAIN AS DESCRIBED IN REF. A. WE UNDERSCORE THAT THE EXPERIENCE AND ANALYTIC POWERS THAT THIS EVALUATION TEAM OFFER WILL DETERMINE HOW EFFECTIVELY AND QUICKLY WE CAN, IF PROVEN NECESSARY, MAKE APPROPRIATE ADJUSTEMENTS TO OUR HEALTH SECTOR AND PROJECT GOALS. THE TEAM LEADER MUST HAVE A BROAD FIELD EXPERIENCE IN ALL ASPECTS OF DELIVERY OF PRIMARY HEALTH CARE INTERVENTIONS IN DEVELOPING COUNTRIES. END SUMMARY.

2. STATEMENT OF WORK

A. OBJECTIVES

(1) TO ASSESS PROGRESS IN IMPLEMENTING THE PHC PROJECT; PARTICULARLY, ACHIEVEMENT OF OBJECTIVES AND TARGETS AS THEY RELATE TO IMPROVED QUALITY AND EXPANDED COVERAGE OF PRIMARY HEALTH CARE SERVICES AND IMPROVED HEALTH STATUS OF RURAL POPULATION

(2) TO PROVIDE RECOMMENDATIONS AND JUSTIFICATION FOR POSSIBLE CHANGES IN PROJECT STRATEGY, IMPLEMENTATION APPROACHES AND OUTPUTS. USAID/PAKISTAN HAS TO DECIDE WHETHER AND, IF SO, HOW TO MODIFY THIS PROJECT. THE EVALUATION SHOULD GIVE THE "PROS AND CONS" FOR DIFFERENT OPTIONS.

B. SCOPE OF WORK

THE EVALUATION TEAM SHALL:

1) ASSESS OVERALL IMPLEMENTATION PROGRESS FOR THE FOLLOWING PROJECT ACTIVITIES:

AA. INSTITUTIONALIZATION OF THE ROLE OF THE MEDICAL TECHNICIAN (MT) AND THE INTEGRATED RURAL HEALTH COMPLEX (IRHC) CONCEPT IN DELIVERY OF PHC:

(PARTICULARLY IN LIGHT OF THE GOP DECISION TO PLACE DOCTORS IN BASIC HEALTH UNITS (BHUS) WHAT IS THE FUTURE OF THE MT?

BB. SUPERVISION/REFERRAL SYSTEM:

THE IRHC CONCEPT WAS BASED ON A REFERRAL SYSTEM. DOES PLACING A DOCTOR AT A BHU CHANGE 1) THE NEED FOR REFERRALS AND SUPERVISION AND 2) QUALITY OF HEALTH CARE DELIVERED? IF SO, HOW?

CC. COORDINATION WITH OTHER PARAMEDICS:

THERE ARE SEVERAL OTHER PARAMEDICAL TRAINING PROGRAMS SUCH AS THE LADY HEALTH VISITOR AND DISPENSER PROGRAMS. SHOULD THESE PROGRAMS BE BETTER INTEGRATED TO PRODUCE MULTIPURPOSE PARAMEDICS OR SHOULD THEIR FUNCTIOINS BE LIMITED TO VERTICAL DELIVERY OF SELECTED INTERVENTIONS? OR TO COMPREHENSIVE PHC?

DD. MT TRAINING ISSUES:

HOW MANY MTS ARE NEEDED? HOW CRUCIAL IS CONSTRUCTION OF NEW SCHOOLS? IF SCHOOLS WILL SERVE IN ADDITION TO MT TRAINING OR OTHER PARAMEDIC TRAINING AS IN-SERVICE TRAINING SITES, ARE THIRTEEN MT SCHOOLS THE APPROPRIATE NUMBER?

EE. STAFFING OF IRHCS:

WHAT ARE SOME SOLUTIONS TO STAFFING PROBLEMS SUCH AS UNFILLED POSITIONS, TRANSFER OF TRAINED STAFF TO NON-PROJECT SITES, INSUFFICIENT MOTIVATION FOR PREVENTIVE AND COMMUNITY WORK, INADEQUATE HOUSING AND SECURITY FOR FEMALE STAFF?

FF. QUALITY AND EXTENT OF COMMUNITY OUTREACH:

WHY HAS THE OUTREACH LAGGED BEHIND? IS THERE A DEMAND FOR VOLUNTEER COMMUNITY WORKERS IN PAKISTAN?

GG. MANAGEMENT SYSTEMS:

HOW EFFECTIVE ARE THE MANAGEMENT SYSTEMS FOR IRHC DRUG SUPPLY AND HEALTH INFORMATION?

HH. MONITORING AND EVALUATION:

HOW CAN MONITORING/SURVEILLANCE SYSTEMS BE INCORPORATED INTO THIS PROJECT SO THAT THE GOP CAN DETERMINE IF THIS PRIMARY HEALTH CARE STRATEGY HAS AN IMPACT ON HEALTH?

DOES THE PROJECT NEED ANOTHR CROSS-SECTIONAL SURVEY TO COMPARE WITH THE INITIAL BASE-LINE SURVEY?

2. ASSESS WHETHER PROJECT IS ATTAINING ITS PURPOSE. TO WHAT DEGREE DOES THIS DELIVERY SYSTEM SERVE THE RURAL POOR? ARE THERE INDICATIONS THAT THE PROJECT IS HAVING AN IMPACT ON HEALTH STATUS?

3. ASSESS WHETHER A BROAD-BASED, COMPREHENSIVE PRIMARY HEALTH CARE STRATEGY IS FEASIBLE IN PAKISTAN. THE EVALUATION SHOULD CONSIDER:

AA. ECONOMIC FEASIBILITY AND RECURRENT COSTS:

WHAT APPROACHES TO RECURRENT COST FINANCING WOULD PERMIT THE PHC SYSTEM TO IMPROVE HEALTH STATUS IN RURAL PAKISTAN? WHAT LEVELS OF FINANCING WOULD BE NEEDED FOR AN EFFECTIVE SYSTEM? HOW DO CURRENT LEVELS COMPARE WITH THEORETICAL REQUIREMENTS?

BB. ADEQUACY OF ORGANIZATIONAL STRUCTURES AND INSTITUTIONAL CAPABILITIES OF THE IMPLEMENTING AGENCIES:

FOR EXAMPLE: WITH IMPLEMENTATION BEING A ROLE OF THE PROVINCES, WHAT IS THE COORDINATING ROLE OF THE BHS CELL AT THE FEDERAL LEVEL?
HOW CAN THE PROJECT TAKE INTO ACCOUNT SOCIO-CULTURAL DIFFERENCES AMONG THE PROVINCES?

CC. STRENGTH AND EFFICACY OF THE PRIVATE SECTOR IN DELIVERING HEALTH SERVICES TO LOW-INCOME POPULATIONS:

WHAT ARE THE COSTS FOR RELATIVE SERVICES?

DD. ROLE OF THE PHARMACEUTICAL SECTOR:

WHAT ROLE DOES THE CHEMIST/PHARMACIST PLAY IN PHC?
SHOULD USAID PLAN AN ANALYTIC STUDY TO UNDERSTAND THIS SECTOR?

EE. ROLE OF MEDICAL SCHOOLS AND TEACHING HOSPITALS:

DO THE MEDICAL CURRICULAE SUPPORT PHC? DO DOCTORS, SUCH AS DISTRICT HEALTH OFFICERS, BELIEVE IN PHC?

FF. ROLE OF TRADITIONAL HEALTH PROVIDERS-TBAS AND HAKIMS:

THE NUMBERS OF SUCH PROVIDERS ARE CONSIDERABLE.

GG. IMPACT OF SOCIO-CULTURAL FACTORS:
FOR EXAMPLE:

NO MALE HAS RIGHT OF ENTRY IN ANY HOUSE BUT WOMEN CANNOT MOVE ABOUT VILLAGES AND TOWNS EASILY.
FEMALE PARAMEDICS ARE RELUCTANT TO BE POSTED IN RURAL AREAS WITHOUT ADEQUATE HOUSING AND SECURITY.
SELECTION PROCESS FOR MALE/FEMALE MT CANDIDATES.

4. EVALUATE THE PROBLEMS/CONSTRAINTS WHICH HAVE HINDERED PROJECT IMPLEMENTATION AND OBJECTIVES AND MAKE RECOMMENDATIONS TO IMPROVE IMPLEMENTATION.

5. ASSESS IMPACT AND APPROPRIATE LEVEL OF TECHNICAL ASSISTANCE INPUTS TO DATE AND SUGGEST MODIFICATIONS IF ANY BASED ON ABOVE ANALYSIS.

6. RECOMMEND IN COORDINATION WITH NIH DIRECTOR AND WHO EPI ADVISOR, PROGRAMMING OF REMAINING DOLLARS 1.5 FOR EPI TO IMPROVE QUALITY OF EPI COVERAGE. DETERMINE IF THIS COMPONENT SHOULD BE EXPANDED OR ALTERED.

7. RECOMMEND ALTERNATIVE PROJECT ACTIVITIES FOR SHICH PROJECT FUNDS COULD BE REPROGRAMMED. USAID PLACES IMPORTANCE ON THIS TASK. SOME ACTIVITIES WHICH THE EVALUATION SHOULD CONSIDER ARE STUDIES ON HEALTH-CARE SEEKING BEHAVIOUR AND HEALTH SURVEILLANCE, OR EXPERIMENTS LOOKING AT THE COMPREHENSIVE PHC STRATEGY VS. THE SELECTED PHC INTERVENTION STRATEGY; PUBLIC VS. PRIVATE SECTOR: COMMUNICATIONS CAMPAIGNS TO SUPPORT PHC INTERVENTIONS; NEW APPROACHES TO HEALTH CARE FINANCING AND MOBILIZATION OF RESOURCES FOR PHC AND PREVENTIVE HEALTH, ETC.

8. SUGGEST NATURE OF ADMINSTRATIVE AND LOGISTICAL ARRANGEMENTS FOR RECOMMENDED ALTERNATIVE PROJECT ACTIVITIES.

RECOMMENDED QUARTERLY PHC MONITORING

Name of Health Facility: _____ [] RHC [] BHU [] Other (Specify): _____

Province: _____ District: _____ Calendar Quarter Ending: _____

Population Catchment Area: _____ Total Outdoor Visits: _____

No. Villages in Catchment Area: _____ No. Villages having CHWs: _____ No. of CHWs: _____

CURATIVE ACTIVITIES

Record the number of cases diagnosed in the health facility and in the community by outreach health workers and the number of cases diagnozed for which the patient had been previously immunized.

MORBIDITY

Disease	No. of Cases		
	Health Facility	In the Community	Case Previously Immunized
Diarrhea			
Diphtheria			
Malaria			
Measles			
Neonatal Tetanus			
Other Tetanus			
Polio			
Pulm. T.B.			
Whooping Cough			

LABORATORY

Total Number of:

No. Sputum Slides: _____ No. Positive: _____

No. Malaria Slides: _____ No. Positive: _____

PREVENTIVE ACTIVITIES

EPI

BCG: _____ Measles: _____

DPT I: _____ II: _____ III: _____

Polio I: _____ II: _____ III: _____

No. Visits by EPI Teams: _____

No. Villages covered: _____

ORT

No. ORS Packets Used:

- (a) At the Health Center: _____
- (b) In the Villages: _____

Diarrhea cases treated with ORS: _____

GROWTH MONITORING

Children (1-5 Yr) in WFP: (Read to Health Charts)

No. Children on Red Area: _____

No. Children on Yellow Area: _____

No. Children on Green Area: _____

Children (1-5 Yr) in the Community (Arm Circumference Measurement)

No. Children on Red Area: _____

No. Children on Yellow Area: _____

No. Children on Green Area: _____

ABBREVIATIONS AND TERMINOLOGY

GOP	Government of Pakistan
USAID	United States Agency for International Development
PHCP	Primary Health Care Program
BHSC	Basic Health Services Cell (Federal)
BHSP	Basic Health Services Program
MOH	Ministry of Health (Federal)
DOH	Department of Health (Provincial)
DDG-BHSC	Deputy Director General - BHSC
AD - BHSC	Assistant Director - BHSC
HNS - PDD	Health & Nutrition Section - Planning & Development Division
DHS	Director Health Services
DDHS	Deputy Director Health Services
SOH	Secretary of Health
DD	Deputy Director
PD	Project Director
DHS	Director Health Services
DDHS	Deputy Director Health Services
DHO	District Health Officer
ADHO	Assistant District Health Officer
MO	Medical Officer
MO/IC	Medical Officer Incharge (of Rural Health Center)
MT	Medical Technician
LHV	Lady Health Visitor
MW	Midwife
POL	Funds for Fuel and vehicle maintenance

SI	Sanitary Inspector
RHI	Rural Health Inspector
MPHW	Multiple Purpose Health Worker
TBA	Traditional Birth Attendant
CHW	Community Health Worker
VHC	Village Health Committee
EPI	Expanded Program of Immunisation
CDC	Communicable Disease Control
IRHC	Integrated Rural Health Complex
RHC	Rural Health Center
BHU	Basic Health Unit
WHO	World Health Organization
RS	Rupee (1 Rs=$U.S. .06)
P&D	Planning and Development
PM	Per Month
OPD	Outpatient Department
PUO	Pyrexia (fever) of Unknown Origin
FP	Family Planning
ORT	Oral Renydration Therapy
NWFP	Northwest Frontier Province
DA	Daily (Travel) Allowance
NPA	Non (Private Medical) Practice Allowance
Tehsil	Sub-district
PC-1	Provincial Proposal for a Development (Capital) Activity
ADP	Annual Development (Capital) Plan
Dai	Traditional Birth Attendant
Chowkidar	Watchman (Lowly paid government or private level employee)
Razakar	A volunteer