

REPORT
OF THE
BASIC HEALTH SERVICES PROJECT
EVALUATION TEAM
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INTRODUCTION

The Government of Pakistan has long recognized the need of the rural population for health services and have struggled with various systems for providing them. Early discussions on a new program for rural health services were begun over five years ago. These talks finally culminated in a Project Paper written by high level Pakistani health officials with the assistance of advisors from the University of Hawaii and USAID. Plans for what has become known as the Basic Health Services Project are described in the Project Paper.

In the beginning, the project was designed in two phases to continue for a total of about eight years. The first three-year phase was to lay the groundwork for the delivery of basic health services to the rural population through a three-tiered system of medical care and Phase II was to see its rapid expansion. The upper tier, the Rural Health Center, staffed by physicians and auxiliary personnel, would act as the referral point for patients from a group of satellite Basic Health Units, staffed by medical technicians. The broadly-based lower tier rested on the associated villages, each with two community health workers. This combination of facilities became known as an Integrated Rural Health Complex.

With both a grant and a loan from USAID, as well as financial support from the Government of Pakistan, the project began in 1977 with the arrival of advisors from the University of Hawaii on contract to the Ministry of Health. The first task was to develop a program for the training of medical technicians - the mid-level para-professionals essential to the three-tiered system. With intensive effort by all concerned, prototype modules from the University of Hawaii were adapted for use in Pakistan, instructors were

trained and medical technician schools started in all of the provinces by 1978. Over 600 students have entered training and more than 200 have finished.

Meanwhile construction of the facilities for the Basic Health Units and the Rural Health Centers continued in all of the provinces. A manual was recently developed for the training of community health workers, but none has as yet been trained.

Progress was delayed by many events and disagreements over several issues during the project. Unfortunately the necessity to invoke Section 669 of the Foreign Assistance Act resulted in the curtailment of the project. It could no longer be considered one of two phases. Phase II was omitted and the original Phase I became the entire project.

It is this project, which will terminate on April 30, 1981, that the evaluation team was asked to assess. Because of changes in the stated objectives over the years, the standard against which to measure progress did not remain constant. This made evaluation very difficult. Was the team to consider as the baseline the objectives outlined in the original Project Paper, the modifications listed in the loan agreement or the severely restricted objectives as given in the amendment to the loan agreement? Whenever possible, we have tried to consider all three.

The project was initially funded by a \$1.50 million grant for technical advisory services, which included \$79,509 for a baseline survey and evaluation of the project, and a loan of \$6.0 million to the Government of Pakistan. The loan was increased in 1979 to \$7.0 million.

The grant funds have been disbursed periodically from September, 1977 through January 31, 1981. At this time, the grant funds are essentially exhausted, although the final payments have not been made.

The loan funds have been paid out in tranches after fulfillment of Conditions Precedent as provided in the loan agreements. To date, \$4.5 million have been disbursed to the Government of Pakistan, and the remainder awaits completion of the final set of Conditions Precedent, scheduled for April 30, 1981.

The program deserves immediate and long-term support by USAID in the form of a follow-on project to develop further the Integrated Rural Health Complexes.

1.0. PURPOSE

The scope of work for the evaluation team was to review the Basic Health Services Project (No.391-0415) in Pakistan from its beginning in 1977, over three and one-half years ago, until the present time, near the end of the project. The team was to measure the extent to which the project was able to achieve the objectives as outlined in the Project Paper, as well as other aspects of the project. In a way, the evaluation is a bit premature, since some of the key performance targets (for example, the deployment of medical technicians and community health workers in Integrated Rural Health Complexes), have not yet been attained. They will probably be more complete when the project ends on April 30, 1981 (the Project Assistance Completion Date).

After review and evaluation, the team was expected to estimate the appropriateness for Pakistan of the system of health care inherent in the Basic Health Services Project, to assess the commitment of the federal and provincial governments to such a system and to make suggestions for its future course, for revision or alteration of the program and the need for special studies.

Although not a specific charge to the team, our reaction to the health of the rural population and the need for medical care should not go unmentioned. We made no specific effort to estimate the prevalence of any illnesses in the rural population, since this would require extensive scientific surveys. But one cannot travel widely around the country without being aware of poverty and ill health, and the obvious need for improvements in health care, particularly on the preventive side, as well as the need for progress in other facets of rural community development.

2.0. METHODOLOGY

All of the information used to assess the project was obtained by looking and listening. This technique is not the ideal. Each observer brings his prejudices. He sees what he wants to see and interprets it in his way. But he also sees only what he is allowed to see and there one touches on the interaction between the observer and the observed. People change under observation and, in a situation like this one, try to influence the observers in any way favorable to themselves. With a group of observers, they concentrate on those they perceive, at the time, to be the most useful. The result is a series of complex interactions, most difficult to sort out. Nevertheless, awareness of the difficulty may make understanding easier and interpretations more accurate.

It was apparent early on that few of the accomplishments of the first phase of the project lent themselves to quantification, even the simplest counting. The methods of review were, therefore, limited primarily to observation, discussion with involved personnel and reading of pertinent documents - methods which are all more or less subjective. Nevertheless, these together constitute the basis of the evaluation and recommendations for any future project.

2.1. Meetings

Discussions were held with all major parties involved in the project. At the first meeting, discussions were held with officials of the Ministry of Health of the Government of Pakistan at the Federal Secretariat. In addition, several meetings and conversations were held with the members of the National Basic Health Services Cell. Because the contract between the Pakistan Ministry of Health and the University of Hawaii was to terminate at the end of January 1981, it was

urgent that the team meet with the long-term technical advisors before they left the country. Consequently, an early meeting was held with three of the four remaining advisors to hear their reports on the history of the project, its present status and their suggestions for the future. The fourth advisor, stationed at Lahore, was interviewed at a later date during a field trip.

During the course of the evaluation, talks were held in each of the four provinces (Punjab, Sind, North West Frontier, and Baluchistan) with persons in the provincial health departments responsible for the development and implementation of the program, as well as with officers and other health professionals in the rural facilities.

AID, the third major party engaged in the program, had an opportunity to present its view of the events of the past three to four years in other separate meetings. In addition, the presence of Dr. James Martin, formerly with USAID/Pakistan, as a member of the evaluation team and of Dr. Rifaq A. Ismail, currently the health advisor at USAID, acting as the guide for the team, provided a continued exposure to the ideas and attitudes of AID.

Finally, separate meetings were held with each of two WHO advisors, the Program Coordinator for WHO in Pakistan, and the WHO health officer assigned as regional training advisor in Sind and Baluchistan.

See Annex A for a list of persons interviewed.

2.2. Site visits

Lack of familiarity with the project, especially its present status, and with the country of Pakistan itself, gave initial hope that at least some aspects of the project could be more objectively measured. Perhaps, for example, a small

stratified random sample of the trained medical technicians could be observed at work, or classes attended in a random selection of training schools, or even at least, a random group of Basic Health Units (buildings alone) could be seen. It was immediately apparent that a valid sample of this sort was impossible. Basic Health Units are widely scattered in a vast country, to visit training schools properly would take too long, and for the most part, medical technicians have not yet been deployed.

Observations, then, were limited to selected sites in the four provinces. Each province was visited, and, perhaps more was learned from an introduction to Pakistan's geography, climate and rural population than from the actual observation of structures and classes. The sites seen, although rural, tended to be those more easily accessible and some which could be considered "show cases." The only visits which could in any way be considered to be rather complete were those to three of the six Integrated Rural Health Complexes supposed to be in operation in Punjab at the termination of the project.

See Annex B for a list of sites visited.

2.3. View of rural Pakistan

Travel to the four provinces to visit training schools and health centers provided an opportunity for the team to become at least casually acquainted with rural Pakistan. Seeing the varied geography and the differences in available facilities among the villages throughout the country served as a useful background for a better understanding of the project. A short tour hardly qualifies one as an expert, but some concept of the setting of the project is essential to its interpretation.

2.4. Review of documents

Considerable time was spent reading various documents relating to the project to get a background of expectations against which to measure the accomplishments and failures of

the project during its first three and one half years. Other documents, dealing with inter-relationships between the Government of Pakistan, AID and the University of Hawaii advisors, suggested the complexities of these relationships and the bases for some of the dissatisfaction and lack of accomplishment in this period of time.

2.5. Review of manuals

The various manuals, perhaps more than anything else, are products of the cooperation between the foreign technical advisors and the health professionals of Pakistan. As such, they will be discussed among the accomplishments of the project. All the manuals were studied as an important part of the evaluation.

See Annex C for a list of documents and manuals reviewed.

2.6. Numerical data

Numerical data do not exist, other than counts of the number of structures, such as Rural Health Centers and Basic Health Units, or the number of medical technicians having finished or presently in training. A report, available in February 1981, of the limited baseline health survey done recently in Punjab, was reviewed.

3.0. FINDINGS

At the beginning of the project, a series of objectives were defined in the Project paper, some to be achieved at the end of the first three years and some at a later phase in a subsequent follow-on project. As a first step in setting a value on the current project, the team assessed the extent to which these goals were reached. At first glance, it was clear that in many ways the program fell far short of the original expectations. But on future acquaintance with the history of the project, it was also evident that there were many reasons why this should be so. These reasons will be outlined later in this report.

3.1. Tangible achievements

3.1.1. Medical technician manuals

Among the tangible achievements of the first three years, the adaptation and printing of the set of six manuals of 2000 pages for the training of medical technicians stands out as notable. It was accomplished during the first year through intensive efforts on the part of all concerned, and included a three month workshop in early 1978, with participants from every province, including physicians and other health workers, male and female, selected by the Pakistan Government. The curriculum specialist from the University of Hawaii, Dr. Michael O'Byrne, was in-charge of the workshop, and did an outstanding job with the help of four short-term consultants. In addition to indoctrinating the participants in the concepts of competency-based training, the workshop also provided time and talent to adapt the prototype modules to circumstances and problems in Pakistan. The resulting manuals were printed in English for use in the medical technician training schools.

The evaluation team read the manuals and found them to be an excellent piece of work. But more importantly, as far as could be determined, these manuals are serving well in the medical technician training schools. Aside from comments that volume II, the one dealing with general diseases, is rather difficult, both students and teachers praised them highly. It is not surprising that this particular volume should be harder than the others, as it is almost unfamiliar material.

So far the manuals have not been translated into Urdu. Whether or not this should be done is a moot point. As all of the students know some English, it may be preferable to continue the present system in which instructors amplify the text and give explanations in the local language. In the course of conversations about the manuals, the need for revision was frequently expressed, particularly by the technical advisors rather than by the teachers actually using the manuals. Revision is a formidable task and a good understanding of what needs to be changed is essential, so it would be preferable to postpone any consideration of revision for two or three years until more experience is gained. If and when a revision or translation of the manuals occurs, it is generally agreed that the work should be undertaken by the National Basic Health Services Cell to provide a uniform text for national use. This seems to be the Pakistani point of view, with which one must heartily agree.

Audio-visual aids including slides, projectors, and anatomical models were supplied by UNICEF. The slides were selected for use in Pakistan by the National Basic Health Services Cell. Both medical technician students and instructors commented very favorably on them.

3.1.2. Manual for teaching the community health worker

This manual in English developed jointly by the University of Hawaii advisors and the staff at the National Cell has been recently completed and is now available for distribution. It

consists of two integrated parts, one designed to instruct the medical technician on how to teach the community health worker and the other with the material this worker is to master. As far as could be determined, neither of these manuals has been put to use as there is not yet an active program to recruit and train community health workers, which will begin when the medical technicians are in the field. On a rapid reading, the manual in English appears to be satisfactory -- much will depend on its use. There is also an Urdu translation of the portion of this material needed by the community health worker.

3.1.3. Management manual

Following an intensive effort by the University of Hawaii advisor Mr. John Eaton, assisted by two Pakistanis, studies were made regarding personnel, drugs and supplies, procurement and distribution, health information systems, operational planning, and communication systems for Integrated Rural Health Complexes. This material was printed in draft form and submitted to a workshop, attended by federal and provincial health and planning officials. Based mostly on the workshop recommendations, a prototype operations manual was produced early in 1981. This manual has not as yet been reviewed by the Government of Pakistan at either the federal or provincial level, and no action has been taken. Since changes and improvements in these management areas have broad implications for other departments in the government, full acceptance of the recommendations will be a long-time coming. Nonetheless, the recommendations, by and large, are reasonable and practical, and will be a necessary complement to the proper fulfillment of Integrated Rural Health Complexes, so that they can function in an orderly and efficient manner.

3.1.4. Medical technicians

The establishment of 20 schools for training medical technicians in Pakistan was another major accomplishment of the

project. Six schools were established in Punjab, 5 in Sind, 7 in NWFP and 2 in Baluchistan. In addition to finding suitable classrooms and living accommodations, a cadre of instructors had to be trained, usually through workshops of varying duration. The calibre of the instruction was generally satisfactory and depended to a great extent on the enthusiasm and ability of the teachers.

Over 600 students have entered training to date, of whom more than 200 have completed the course. This, to be sure, falls well short of the 810 students scheduled to have completed training according to the Project Paper but more than the 80 identified in the amended loan agreement. The first students to be trained were in-service personnel already employed in the health care system, for whom training was shortened to 12 rather than 18 months. The technical advisors seemed to believe that their training was inferior and that these early graduates should be discounted, but one cannot so simply dismiss results which one finds less desirable.

There seems to have been a reasonable effort to enroll women in medical technician training. In two provinces, Punjab and Sind, some classes have been co-educational, whereas in the other two provinces, separate medical technician schools were started for women, in facilities that were already training lady health visitors. Both systems seem to work. The quality of the graduates, whether men or women, will probably depend more on the selection of students and instructors than on mixing sexes in the classroom. Of all students, 189 have been women.

Although medical technicians are a tangible product of the project, they are also extremely elusive. Not all of the students who have completed training have taken their examinations and of those who have, not all have passed (see following table). Furthermore, in-service medical technicians have been

reassigned to their previous posts and not necessarily to the designated Integrated Rural Health Complexes. Thus, to date, few have been deployed in their new role of medical technician, and in all of our site visits we were not able to interview a single bonafide medical technician. One has, therefore, no idea whether they are capable of doing the work for which they have been trained, or whether there has been any change in their skills.

An attempt was made in Sialkot to estimate the clinical skills of medical technicians. Six students were observed in a total of 34 clinical situations. A cursory analysis of the findings might suggest that the technicians did not do well. But unfortunately, the methods used by the evaluators were not rigid scientifically, so that one is really unable to conclude anything. This exercise does however suggest the kind of estimate which should be done in the future, but if it is, it should be scientifically sound.

Approximate Numbers of Students in Medical Technician Training

	<u>Entered</u>	<u>Completed</u>	<u>Examined</u>	<u>Passed</u>
Baluchistan	63	24	24	24
N.W.F.P.	195	50	-	-
Punjab	283	127	114	69
Sind	105	69	69	45
Total:	646	270	207	138

3.1.5. Basic Health Units and Regional Health Centers

There has been an ongoing program for several years in each province for the construction of various health units, and the basic health services project has focused attention on the desirability of constructing Rural Health Centers with satellite Basic Health Units.

Over 400 Basic Health Units and 225 Rural Health Centers have been completed. Buildings without a staff are not operational and as mentioned above, the technicians have not yet been deployed. There must be some coordination between the number of buildings and posts for technicians. If there is not, there will be idle buildings or idle technicians -- neither very productive.

3.1.6. Integrated Rural Health Complexes

It is unfortunate that there are no functioning Integrated Rural Health Complexes. In the original loan agreement 36 were proposed, and this was later reduced to 6 by the amended agreement. The six sites have been identified in Punjab. The team was able to visit only three, none of which would be described as a functioning complex. By hearsay evidence, the same could be said of the other three. Officials in Sind seemed to regret that all six sites were in Punjab when there are perhaps three comparable sites in Sind. A proforma for determining operational status of Rural Health Center follows;

(O: Operational)

(N: Not Operational)

OPERATIONAL STATUS CHART

Rural Health Centers - PUNJAB

Name of Rural Health Center	Lalamusa	Chowinda	Warbuton	Shah Jiwana	Uch Sharif	Choti Zarin
Location						
Construction						
Staff						
Male MD						
Female MD						
Med. Tech.						
CHW						
Support Facilities						
Drugs						
Equipment						
Water						
Electricity						
Waste Disp.						
Transportation						
Laboratory						
Blood/Urine						
Other						

3.1.7. Community health workers

Although there is no single component of the plan for the basic health services which could be singled out as either unique or essential, the community health workers, recruited from each village, must be the foundation from which the entire program springs. So far the structure has been built from the top down and remains unsupported. According to the initial loan agreement, there should be 1350 community health workers trained and working by the end of the project. This was reduced to 48 by the amended loan agreement. In our travels we have been informed that a few have been trained, generally as part of the training of medical technicians or by one of the technical advisors as part of an exercise to stimulate community worker development. We saw only one such worker. Nevertheless, we were gratified to learn that the idea of community health workers has been generally accepted by leaders in both the federal and provincial health secretariats. Physicians at the level of the Rural Health Centers gave lip service to the concept but we were not at all certain that they understood what these workers would be expected to do or their own role in relation to them. The impression was that they would leave that up to the medical technicians when and if they arrived.

It was impossible to determine whether the medical technicians themselves grasped the importance of the village workers as we saw only two technicians who had completed training. For what it is worth, one of the two, a lady technician, said that she was prepared to go into the villages to recruit and train village workers. Let us hope that this will be the case, as without them the project will either collapse for lack of any foundation or become simply another scheme for training para-professionals not at all unlike the plans which have repeatedly been tried in Pakistan since the publication of the

report by Sir Joseph Bhore in 1946, a document referred to in the Project Paper.

As mentioned above, however, the responsible people in the various health ministries have, almost without exception, commented favorably on the validity and need for the community health worker scheme. This certainly gives hope for the future.

3.1.8. Baseline health survey

According to the Project Paper, a health survey "before month 18 of the project" was to collect information on morbidity, family planning and the use of health services. After considerable redesign, a limited survey was done in late 1980. It was carried out in six Punjab villages, one selected near a Basic Health Unit in each of the six districts which will have Integrated Rural Health Complexes. Because of this method of selection, generalization to a larger universe will not be valid. But once data are tabulated, there is always the temptation to believe that they apply to a much larger universe and to use them in that way. The data may be representative, but not necessarily.

The information as it has been collected is of considerable interest for these six villages. But it will not serve as an adequate basis for measuring change during the future years of the Government Basic Health Services program, or a follow-on AID-funded health project.

3.2. Intangible accomplishments

3.2.1. Acceptance of project concept

Acceptance of the community health worker in particular and of the general concept of this program of rural basic health services has been a major accomplishment of this project. The impression is that the intensity of the commitment has increased as evidenced by Government of Pakistan and provincial financial contributions as well as official statements. The outlines of future commitment to the program are more clearly drawn. In

addition, the doubters have been brought into general agreement. This is not to say that there is no opposition on the part of some of the health officials and on the part of many of the physicians throughout the country. But with any visible success, this opposition should crumble.

3.2.2. Institutionalization

A second intangible benefit of the project has been the development of the organizational structure within the federal and provincial health directorates to deal with basic health services. A cell has been established within each of these health secretariats which has for its principal duty the growth and expansion of these services as outlined within the Project Paper. It is clearly not simply the establishment of the cells which is in itself a tangible benefit, but more importantly, the ability of the cells to function effectively. At the outset, there was considerable discussion between government officials and USAID regarding the appropriate national pay scale level for the chief of the National Cell. It was agreed that a level no less than Grade 19 was essential, and a higher grade 20 was preferable, since provincial health secretaries and directors are Grade 20. In this rank conscious bureaucracy, a grade less than 20 would likely pose problems in attempting to impose rules and regulations on a provincial officer of higher grade. After a series of negotiations and compromises, Dr. Mushtaq Ahmad Chaudhry was selected to head the national cell at Grade 19, and this has been a significant disadvantage in dealing with the provinces, even though Dr. Mushtaq has proven himself a knowledgeable and capable administrator.

The health officials in Pakistan should be quite capable of continuing the program of Basic Health Services without foreign technical advisors functioning as intensely as they did in the first few years. This is not to say, as will

be clarified later, that technical advisors will not serve a useful and possibly even essential role in a future program. But their role should be fundamentally different and more limited in scope than during this project.

4.0. SHORTCOMINGS

Although the accomplishments have been substantial, this report would be incomplete without the specific mention of the numerous instances in which proposed outputs were not even begun. In the preceding section, many of the accomplishments were incomplete but nevertheless represent a significant movement in the right direction. In the following list, there seemed to have been no movement at all:

4.1. Personnel

In addition to the medical technicians and the community health workers which were to have been trained and deployed, full management training was to have been provided for 36 federal, provincial and district government executives and 60 support staff, as noted in the amended loan agreement. As far as could be determined in our visits and discussions, none of these types of workers have been trained as had been projected.

4.2. Field operations manuals

In addition to the manuals already described, others were scheduled in the Project Paper for completion. There was to be a manual of preventive medicine program operation for the Rural Health Complexes and a handbook of curative medical care for the mid-level health worker and a management manual for the Rural Health Complexes. Except for the possibility that the last named might be incorporated in the draft of the management manual which was prepared, the team saw no evidence that these manuals have been completed. Not only were the manuals lacking, we found nothing to suggest that the contents had been worked out.

4.3. Operational research and development

According to the Project Paper, there were to be several products related to operational research; national performance standards for mid-level health workers; health manpower inventory; a research study on the determinants of primary care utilization; a cost analysis study of primary care expenditures and an information system design study for primary care. None of these were identified. Moreover, we did not come across any signs that work had begun on any of them.

4.4. Communications support

A health education specialist has been attached to the National Basic Health Services Cell since the onset of the project, but his specific duties and outputs are not clear to the team. Although we did not make a determined attempt to find out about the time and effort devoted to the dissemination of information on the program and on health topics in general, there was no indication that much has been done of this kind. Certainly no posters or pictorial pamphlets on rural health were in evidence, although the Project Paper called for 4,000 of the former and 100,000 of the latter. We learned of no radio broadcasts. It was not clear whether the project workshops doubled as communication seminars. A movie was made during year one of the project with project funds and technical assistance from the University of Hawaii. The film has not been widely shown because, by consensus, it is poorly done and does not merit wide distribution.

5.0. REASONS FOR THE DIFFERENCES BETWEEN THE OBSERVED AND THE EXPECTED

There are many reasons why the project was unable to accomplish all of the objectives set out in the Project Paper. It is unlikely that a small team of consultants can, in a short time, identify and attach relative significance to all of the events and problems which may have interfered with carrying out the project. Nevertheless, certain things listed below in a more or less chronological order, did emerge as contributing factors. Some were more important than others, but no attempt is made to rank order them.

5.1. Expectations over-optimistic

Certainly, in retrospect, the objectives set out in the Project Paper were more than could reasonably have been expected to be achieved in three years. After all, the program was starting from scratch and given the setting, as well as the political changes that occurred, a long period of time would be required to get the program in motion. Setting high goals might give an incentive to those involved to work hard. On the other hand, failure to achieve them might very well prove to be disheartening.

5.2. Host country contract

In theory, such a contract gives the host country control over the project, particularly the external technical advisors. Unfortunately, this did not work out well in this instance.

The National Basic Health Services Cell, responsible for the project, had a small staff, generally of only three people, and could not afford to devote the necessary time to what must have been considered relatively minor administrative issues. In addition, the contract provided that all the major decisions made by the Ministry of Health had to be

approved by AID. This for all practical purposes, left the Ministry of Health in nominal control only. As a result, no one was happy. Decisions became more complicated with two agencies involved. Consequently, the third party to the contract, the technical advisors from the University of Hawaii, did not know to whom to turn. They were well aware who controlled the money and the ultimate authority and so turned both to AID and the Ministry of Health. This tended to weaken the arrangements of the contract and had unpleasant consequences in specific situations which will be outlined later. The point to be made here is that this type of contract was not effective, did not meet the needs of any of the parties and caused a great deal of frustration.

5.3. Administrative issues

In the early phases of the project, discontent seemed to have arisen among the University of Hawaii technical advisors. Some of this stemmed from the contract itself which did not provide for the 15 percent post differential received by AID personnel. In addition, there was dissatisfaction with the housing proposed by AID. These issues caused considerable friction between the technical advisors and persons with the AID mission. The Ministry of Health was only tangentially involved, although the contract was with them. Much time and energy was spent discussing these issues which were ultimately resolved by amendments to the contract. The net effect, however, was to upset relationships among the three parties and divert attention from substantive project matters.

5.4. Technical advisors

The original contract called for four technical advisors, three of whom arrived in September of 1977, including the chief-of-party, the medical curriculum expert and the advisor

for the community health worker aspects of the program. The fourth member, the training advisor for Punjab, arrived a few months later in January 1978.

It was unfortunate that the chief-of-party, for genuine reasons, had to leave the country in April 1979 after a stay of only eighteen months. This disrupted the program until his successor was appointed, the former training advisor in Punjab. Another advisor was recruited for the Punjab post, but that position was not filled until July 1979.

At the end of about two years, the curriculum advisor left the country, but fortunately after completion of the medical technician training manuals, certainly a basic accomplishment of this project. Nevertheless, it would have been desirable for this advisor to have remained in country to have observed the results of the training effort with these manuals. The curriculum advisor was not replaced at the request of the Government of Pakistan.

At the outset, WHO was expected to provide a management expert to advise on the various management problems associated with the conduct of the Basic Health Services Project, but the WHO advisor did not arrive until well into the second year of the project. He remained only for one year, apparently without giving much management direction to the program. In order to fill this void, the Hawaii contract was amended to permit a fifth management advisor from the University of Hawaii, who duly arrived in April 1979, leaving him only about eighteen months to study the system, to devise suitable management procedures and to incorporate them into a prototype manual.

These changes among the technical advisors have been outlined to suggest that they may well have had a deleterious

effect on the program. Certainly they could not have been beneficial.

The University of Hawaii - Government of Pakistan contract also provided substantial funding for consultation at the University of Hawaii, as well as customary leave for accumulated overseas time. In June 1978, a trip was undertaken to Hawaii which largely depleted the advisor staff as well as the staff of the cell, for about 3 to 4 weeks. This loss of time at a critical point when the training schools were just starting was never regained, and the project was behind schedule from then on.

5.5. WHO technical advisors

The Project Paper called for two advisors to be supplied by WHO, thereby reducing the number of University of Hawaii advisors to four rather than the six originally suggested. One advisor was to be the management consultant referred to in the preceding section and the other a regional training advisor. The training advisor did not arrive until July 1978 and it was unrealistic to expect such a highly trained expert from a different background to be content to introduce the training material developed by the University of Hawaii. He apparently conceived of his role as that of an independent advisor and not responsible to the chief-of-party of the University of Hawaii team. This dual source of advisors failed to promote a coordinated effort. One cannot help feeling that the WHO advisor believed himself to be outside the program and, from his point of view, it would be to his advantage to propose alternative approaches. This would make for a certain degree of confusion at best. As time went on, he became an integral part of the regional training in Sind.

5.6. Personality

It is extremely difficult to assess the importance of personal differences among the people working on the program. It was, however, very clear that such differences did exist. We soon heard comments from all parties concerning the inadequacies of the others. Each angle of the triangle (i.e., officials of AID, the University of Hawaii, and the Government of Pakistan) had unkind things to say about the other two. We made no effort to elicit these remarks; indeed, we tended to cut them short whenever possible. Unhappily, personal differences seem to exist in most projects of this nature, at least those we have seen. These are not simply disagreements on policy, which are often a healthy sign, but personal differences used to attribute blame for failures, either of the project or of oneself. They are unpleasant and they do impede progress.

5.7. Bureaucratic apathy

Governmental bureaucracy is hard to change. There is an enormous inertia to maintain the status quo. This inertia must certainly have contributed to the slowness with which the program got under way. The small, newly formed National Basic Health Services Cell, along with its few foreign technical advisors and USAID, attempted to move the ponderous machinery of the Ministries of Health, both federal and provincial, with all of their vested interests in the existing services. There is an unwillingness to see the potential in a new program but rather to concentrate on the similarities to the old. How many times must the sentence have begun, "These medical technicians are no different than..." And, in addition, in every bureaucracy there is a commitment to more of the same, not a commitment to change. We had confirmation of this in the initial reactions to the concept of community health workers. Many of the health officials

were reported to have been opposed. "It would never work," they said. Now, most have evidently changed their opinions, but not all. We ran into some in our evaluation who remained opposed.

One of the reasons for resistance to change is that it requires, in many instances, additional money. The provincial Ministries of Health were being asked to undertake new projects, to build buildings and to train more personnel in a new way. All of this requires money and the mechanism for getting money to the provinces was not clear. In a sense, it was not the role of the team to press deeply into details of this aspect, but we could not help but be aware of the nature of the problem and recognize that it is of considerable importance to the success of the program. The provincial ministries must have a share in the financial arrangements as well as in the planning and execution of the program itself.

5.8. Invoking of Section 669 of the Foreign Assistance Act

During April of 1979, about two years into the project, the United States Government applied Section 669 of the Foreign Assistance Act to Pakistan. This section, essentially a nuclear non-proliferation amendment, required a winding down of the Basic Health Services Project, with curtailment in planned outputs, as well as changes in the funding and completion dates. These changes were, per force, made unilaterally by USAID, with some limited consultation with the Government of Pakistan. This led to unenthusiastic agreement by the GOP to an amendment to the original loan agreement. The amendment sharply reduced the performance targets, for example a reduction of medical technicians in training schools from 36 to 12 and medical technicians from 800 to 80.

5.9. Evacuation of technical advisors

The U.S. Embassy compound was attacked and burned by rioters, with loss of life, on Wednesday, November 21, 1979. The following morning, an order was given by the Embassy to evacuate all of the official U.S. government employees' dependents, as well as selected government employees themselves, on a chartered flight leaving Islamabad early November 23. Other Americans, including contractors, business people, etc., were included in the charter flight on a space available basis. Mr. and Mrs. John Eaton, Dr. and Mrs. Robert Mack and children left Pakistan on the charter flight. Mr. Richard Johnson, who was holding a workshop in Sukkur, departed through Karachi by his own resources. Dr. and Mrs. Michael Porter, both non-Americans, remained in Islamabad. About 10 days later, Dr. Porter went to Hawaii, ostensibly for consultation, although actually recalled by the University of Hawaii organization for safety precautions. Mrs. Porter went to Australia.

Soon after the advisors left, the Government of Pakistan said that the team had not notified them about their departure, as required in the contract, and that there was no emergency, except during the few hours of the attack, and that Dr. Porter had left under false pretenses. They claimed that the contract should not be charged with paying for the advisors who were not in Pakistan working on the project.

In early January 1980, the University of Hawaii invoked the "force majeure" part of the contract to protect their financial interests. Following this, the GOP advised the University of Hawaii in writing that the contract was cancelled, and the advisors were not to return. In mid-January, 1980, a meeting between U.S. Government and Pakistan

officials was held. At that meeting, a decision was made by the Government of Pakistan to rescind the "no return" letter, and the University of Hawaii was to retract the force majeure clause, making it possible for the advisors to return. Both of these actions were taken a few days later. A decision by AID in Washington to pay the costs of evacuation of the advisors and families paved the way for the advisors' return in March 1980, over three months after their departure. It took additional time to assuage ruffled feelings, and to gather momentum for further progress of the project.

6.0. LESSONS LEARNED

During the course of the evaluation, the team was impressed by various issues and events from which lessons might be learned for future projects of this kind. The unfolding of events, the barriers to progress as well as the occurrence of felicitous happenings, should be studied carefully by anyone interested in the instigation of programs for the spread of medical care to rural regions in developing countries, indeed in the so-called developed countries as well. The short time which the team had to review the project, become acquainted with its inception, its progress and the intricacies of its management left little opportunity to study thoroughly the various features and, in particular, the specific problems. Nevertheless, certain aspects stood out as potentially important and should be considered in the future.

6.1. Slowness of change

The steps from the plans in a Project Paper to implementation in the field are beset with many obstacles. What appears to be an ideal and practical timetable on paper seems to disintegrate under the trying conditions of practice. Events have a way of intruding on the best of plans, and, unfortunately, these events most often turn out to be ones which impede progress. In the section on findings, we tried to describe some of the events and conditions which played an important role in the development of the Basic Health Services Project in Pakistan. There is no need to repeat them here. It should be enough to say that some of them were utterly unexpected, for example, the evacuation of the technical advisors following the burning of the American Embassy facilities. Others, however, should not have been surprising and, indeed, many should have been anticipated from the resistance

on the part of some government health officials to certain social and cultural barriers among the people.

The important point here is to note that in anticipation of a slow change, planners should be modest in their expectations. Targets should be set which have a reasonable chance of being attained. The Project Paper contained some which were attainable but it also included several which were beyond hope of achievement in the time allotted.

6.2. Prefabricated design

The concept of taking a ready-made design for the provision of rural health services and applying it to several developing countries is intriguing. But the actual effectiveness of the MEDEX program, at least as applied to the rural health services in Pakistan, has not been demonstrated.

It should be obvious that any basic design will need extensive modification as it is adapted to the geography, climate, social and cultural conditions within any country. This was recognized in the earliest phase of the program when the prototype training manuals for medical technicians designed by the University of Hawaii were modified for use in Pakistan. This also applied to the manual for the community health worker. It may be an erroneous interpretation on the part of the evaluation team, but other aspects of the program had a certain feeling of rigidity. There seemed to be a lack of willingness to adapt to existing circumstances, or to look for ways to modify the program to best suit the local situation. In opposition to the ideals of the new program are the bureaucratic entrenchments of the existing system. Accommodation has to be made.

Not only are there obvious differences between countries but also even within a country. Local variations may indicate the need for a modification in design. What could be expected to work in Punjab, for example, might not work in Baluchistan.

Program planners and implementers should be able to make the kinds of adjustments which will increase the chances for success.

6.3. Lateral exchange of information

The members of the team were impressed by the lack of communication between the health departments in the different provinces. Although there is a history of semi-annual meetings of provincial health officials with officials of the Federal Ministry of Health, these did not appear to result in important decisions. Our information is that representatives of each province reported on local accomplishments, but that few of the others listened. All of these meetings were held in Islamabad.

Exchanges of information are very useful but discussions should be substantive and should result in decisions of importance to each of the provinces. Meetings should be held in the various provinces rather than only in the capital so that officials can get an occasional direct impression of the problems their counterparts are facing.

Just as there is little lateral exchange of information between provinces, there is virtually no communication between services within each province. The people in the program development section at the provincial level do not communicate with officials responsible for health services. We were told in one province, for example, that a number of medical technicians had completed training and had passed their examinations, but the officials in the program training section had no idea of whether or where they had been deployed.

6.4. Social and cultural factors

Although hardly a new lesson, one must pay attention to the social and cultural milieu in which a program is to operate. In Pakistan there are numerous factors which must be considered in undertaking any health program. These social and cultural

factors vary among the provinces, and even within a province.

For example, in some provinces there is a greater willingness to accept women as medical technicians. As a result, almost equal numbers of men and women have completed or are engaged in training. In such a province it is reasonable to consider pushing hard for the use of women technicians. But in districts where there is strong opposition, it might be more beneficial to the overall project to acquiesce temporarily to the existing situation and delay an unyielding emphasis on women technicians.

As the program develops, the social conditions under which a system of community health workers will most easily be accepted will have to be studied. Even from the short field visits made by the evaluation team it was apparent that these workers will be much more readily accepted in some villages than in others. Village characteristics which make for acceptance should be studied, as proposed by the United Nations Development Programs project. And it is important to consider what is meant by acceptance. In one village, we had the impression that a trial community health worker program had been accepted as a favor to the project but that it had little meaning for the people of the village. If this was the situation, it would seem to be an unlikely village in which to have initiated a trial program.

These two examples should serve to emphasize this constant problem in developing programs which involve people. One must try to understand them and their ways of doing things. It is often not easy to do.

6.5. Need for cooperation between all parties

One should not have to emphasize the need for cooperation among all parties engaged in a project, but in the interviews during the evaluation it was readily apparent that this was

sometimes lacking. It was not surprising that most complaints of lack of cooperation were made by various Pakistani officials. It was easy for them to perceive themselves as outside the decision-making process. This was particularly true during the tensions at the time of the burning of the American Embassy facilities. The technical advisors, although nominally employees of the Ministry of Health according to the terms of the contract with the University of Hawaii, left the country without consultation with the government health officials, as detailed elsewhere in this report.

This feeling of being less-than-equal partners was also evident when USAID made unilateral decisions during 1979 when invoking Section 669 of the Foreign Assistance Act. Similar, though less serious, conflicts arose from time to time between the technical advisors and Ministry of Health officials.

It is not surprising that the recipient country should be sensitive about many issues. The advisors and USAID must try to understand this, and to make cooperative and collaborative decisions and agreements.

6.6. Host country contract

Although the host country contract concept has theoretical appeal, its practical implementation in Pakistan was unsatisfactory for several reasons. There is no suitable local organization in country to handle housing, maintenance and other personnel support for technical advisors. Support was provided by USAID through contractual arrangements. Other administrative issues, including personnel, consultants, leave, budget, etc., were cumbersome to manage since they had to be administered by the Government of Pakistan, the University of Hawaii, and USAID. No party had a fixed role, making implementation difficult. In the final analysis, the technical

advisors, however incorrectly, were perceived by the Government of Pakistan as direct-hire USAID employees. Future contracts should provide for direct arrangements between USAID and the contractor, and not with the host country.

6.7. Provincial agreements

The provinces, which are charged with the implementation of the health project, receive additional funds as a result of USAID and Government of Pakistan contracts, only indirectly through the federal development budgets. These funds are not always specifically earmarked for health, and even when they are, they are sometimes diverted from rural health care into other health programs. Some type of federal-provincial agreement is desirable to ensure that additional funds accruing to the Government of Pakistan from any subsequent AID health projects will get to the provinces, specifically earmarked for rural health.

6.8. Contract issues with contractor

During the course of this project, many issues arose which required discussion and resolution, frequently resulting in significant expenditure of time by both the contractor and USAID, and sometimes resulting in considerable unhappiness. As an example, several months after the arrival of the technical advisors, a request was made by the chief-of-party to include a 15% "overseas allowance," retroactive to the original contract date. After much discussion, the USAID legal advisor concluded that, based on available evidence, the 15% "overseas allowance" was, in fact, identical with the post differential which direct-hire employees were receiving at that time. Further evidence indicated that the post-differential for the University of Hawaii advisors had been specifically deleted by the original negotiators as a trade-off for other support. The post differential was thus denied, only to be granted later

in the contract. The use of a contract officer initially might have avoided this problem.

6.9. Knowledge of the local bureaucracy

Many AID employees and technical advisors have immediate responsibilities on arrival at post to deal with government counterparts and officials. It is important for them to have a working knowledge of the bureaucracy, including the responsibilities of various decision makers. Advisors and AID officials should have a country-specific description before arrival. For example, an explanation of the hierarchy in the Pakistan health structure, both federal and provincial, as well as information relating to the political subdivisions in the country would have been very useful for persons working on this project. Such information would be simple to develop and easy to provide.

6.10. Development of Project Identification Document (PID) and Project Paper (PP)

Although the early work on the country health program exercise (1975) was multi-lateral with WHO support, the later documents (PID and PP) were largely developed with University of Hawaii advisors, high level Pakistani officers and USAID personnel. As a result, the project was heavily influenced by the Bhutto government, especially Dr. Naseer Sheikh, the then Director General of Health and particular reliance was placed on the Director General to inform the provincial health officials about the obligations and responsibilities of the Basic Health Services Project. Soon after the project agreement was signed, the Bhutto government and its appointees were replaced by the martial law administration of General Zia-ul-Haq. The federal and provincial secretaries were replaced, mostly with military medical officers, who were unfamiliar with the project. As a result, a period of about

six months was required to indoctrinate federal and provincial health officials about the details of the project. Much of the delay in implementation could have been circumvented by having included provincial officials during the development phase, with less dependence on a small group of individuals.

7.0. RECOMMENDATIONS

It is, of course, the aim of an evaluation to arrive at recommendations for the future. One reviews the progress of the project and estimates its future prospects. It is then that one puts values on the project, in this instance, a value for the people living in rural Pakistan, a value for the health departments in the provinces and the Federal Ministry of Health, and finally a value for USAID. The members of the evaluation team have concluded that in view of the progress made so far and the need for health services in the rural areas of the country, the program activities should definitely be continued in a follow-on project. It is difficult to make specific, detailed recommendations after such a short acquaintance with the project, the health ministries of the country, the geography of the country and the social and cultural conditions.

We believe that there should be a follow-on project, financially supported by USAID, directed firstly toward making fully operational a number of Integrated Rural Health Complexes and secondly toward the full staffing and functioning of the existing Basic Health Units. The following suggestions relate to these two broad objectives:

7.1. Integrated Rural Health Complexes

The Integrated Rural Health Complex is the basic complete unit for the delivery of health services in the so-called three-tiered system of health care. Six of these units were to have been in operation at the end of the project, but they are not. It is strongly recommended that emphasis be placed on the completion of Integrated Rural Health Complexes in all the provinces.

The operation of at least 24 to 36 health complexes would furnish a reasonable test of the three-tiered system of health care in this country.

7.1.1. Emphasis on community health workers

The foundation for the Integrated Rural Health Complex is the community health worker. Every effort should be directed to the recruiting and training of these workers in the 24 to 36 complexes to be developed in the follow-on project.

7.1.2. Emphasis on women

Although it is most desirable that women medical technicians be trained and deployed and that posts for women physicians be filled, this should not be mandatory for follow-on project purposes for the establishment and operation of an Integrated Rural Health Complex.

7.1.3. Assistant district health officer

Although the medical officer at the rural health center is nominally in charge of the medical technicians and the community health workers within a complex, it is very doubtful that he will have the time needed to devote to their supervision. He is deeply involved with the care of patients coming to the rural health center and other duties. It is strongly suggested that an assistant district health officer be exclusively designated to organize and supervise the activities of each Integrated Rural Health Complex in the contemplated follow-on project. His primary responsibilities would be to stimulate the development of the community health worker component, to emphasize the preventive medicine aspects at the village level and to supervise both the medical technicians and the community health workers. This would require a physician who is interested in public health and the prevention of disease and who is willing to be innovative in his approach.

7.1.4. Workshops for the staffs of Integrated Rural Health Complexes

One of the deficiencies which was noted by the evaluators was the lack of any exchange of information between agencies in

the different provinces. It is suggested that regular meetings be scheduled at which staff members of the various Integrated Rural Health Complexes, perhaps under the direction of the National Basic Health Services Cell staff, can exchange views with the aim not of simply reciting experiences, but of making common decisions.

7.1.5. Health education materials

The appropriate office in the National Basic Health Services Cell should develop health education materials suitable for use in the villages. These materials should be designed to stimulate the interest of village inhabitants in the community health worker concept. Additional materials should be available for the community health worker to use to inform the villagers on specific health issues, particularly preventive.

7.2. Technical advisors

Although it is probably true that the health establishment in Pakistan is now capable of continuing the development of basic health services, the team members think that a follow-on project would benefit by the presence of certain external advisors:

7.2.1. Management advisor

The prototype management manual was completed only within the last month. There has been no time to put any of its recommendations into practice. The team concluded that a good management system should be put into operation at the outset of any new project. For this reason, we decided to recommend a long term technical advisor at the federal level who would work with his counterpart to establish an appropriate system which could later be expanded.

7.2.2. Public health advisors

In order to simulate the development of the 24 to 36 Integrated Rural Health Complexes proposed in the follow-on project, it is suggested that some long term external public health advisors be assigned in the provinces to function as advisors to the secretary of health. These advisors would work in close cooperation with the assistant district health officers mentioned in 7.1.3.

7.2.3. Data collection advisor

Since the uniform collection of routine health data will be most important in estimating the effect of these complexes on the health of the rural population and in measuring the activities of the complexes, it is suggested that an advisor be available to work with a counterpart in the National Basic Health Services Cell to decide mutually on the information to be gathered and on the means of collecting it. The advisor would be available for short periods to help work out a system which could then be put into practice by the Pakistani official. In return visits, the external advisor could help work out problems which arise.

7.3. Transport

If the assistant district health officers suggested above, are to efficiently supervise the Integrated Rural Health Complexes, they will need some form of transportation. It is expected that they would visit frequently the various Basic Health Units and villages within the complex. Serious consideration should be given to the supplying of a two-wheeled motorized bike which would facilitate these visits.

7.4. Training

The training of medical technicians must continue in order to have enough technicians to staff the increased

number of Integrated Rural Health Complexes. In addition, although the emphasis has been placed on the development of these complexes, it is not suggested for a moment that the establishment of planned Rural Health Centers and Basic Health Units be discontinued. As more of these units come into operation, so will the need for medical technicians continue.

Full integration of the training schools for lady health visitors into the medical technician program is strongly recommended.

7.5. Construction

In line with the suggestion that a number of Integrated Rural Health Complexes be fully developed, construction in the near future should be directed at the completion of the units necessary for the functioning of each complex. As for other units, not within these complexes, the team believes that construction should temporarily give way to the staffing and efficient operation of the buildings already at hand.

7.6. Training of Pakistani officials

Pakistani officials engaged in a follow-on project should be given opportunities for further relevant training outside the country. This training should be short-term, say for three months, and should be taken in countries in this region and not, unless there is a very special need, in the United States. Not only will such training increase the capabilities of the Pakistani officials, but it will give them opportunities to see other programs in operation and to exchange views with workers on similar programs in other countries.

7.7. USAID support

It is the strong belief of the team members that without further substantial support from AID, the Government of Pakistan

program will not develop in the way originally intended. Indeed, it is very likely to falter completely and become simply another scheme for middle level health workers which has only partially succeeded.

Their program clearly deserves more than that. As we have tried to indicate throughout this report, a great deal of progress has been made in the initial project, but the product is very fragile. The groundwork has been laid for continued development. We cannot over-emphasize our conviction that a follow-on project be developed and given the money with which to continue along the lines we have suggested.

Bureaucratic requirements should be started immediately to ensure that there will be a minimum lapse in funding. A follow-on project needs substantial financial input from both the USAID and the Government of Pakistan by means of a multi-year contract with intermediate evaluation.

ACKNOWLEDGEMENTS

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We should like to express our special thanks to Dr. Rifaq A. Ismail of USAID for his loyal support, his expert scheduling of our field trips and his invaluable help in supplying us with background information.

We thank Director Bryant Geroge, Mr. Leslie Dean and the USAID staff for their guidance and help.

Finally, our thanks to Jan Finney, Cathy Miller and S. M. Ajmal who worked so tirelessly with us in the preparation of this report.

ANNEX A: List of Persons Interviewed by Evaluation Team

Government of Pakistan

Lt. Gen. (Ret.) C. K. Hasan, Secretary of Health
Major Gen. Iqbal Mohammed Chaudhri, Director General
of Health
Dr. Mushtaq Ahmed Chaudhry, Deputy Director General
of Health
Dr. Zafar Ahmed, Assistant Deputy Director General
of Health
Mr. Abdul Sattar Chaudhry, Health Education Advisor
Dr. Siraj-ul-Haq Mahmud, Chief, Health Section, Planning
Division

Northwest Frontier Province

Dr. Zaman Khan, Provincial Health Secretary
Dr. Abdul Khaliq, Provincial Director of Health
Dr. Nazir-ul-Haq, Deputy Director of Health
(Basic Health Services Project)
Mr. Ibrahim Beg, Chief, Health Section, Planning and
Development

Punjab Province

Dr. M. B. Khawja, Director of Health Services
Dr. Abdul Ghafoor, Deputy Director of Health Services
(Basic Health Services Project)

Sind Province

Brig. Mehboob Sadiq, Secretary of Health
Dr. Halepota, Additional Secretary of Health
Dr. Khalid Rashid, Section Officer in Charge
(Basic Health Services Project)
Dr. Nissar Saddiqi, Section Officer, Development
Mr. Fazal-ullah Qureshi, Chief Economist

Baluchistan Province

Dr. Abdul Khaliq, Secretary of Health
Dr. Riaz Baloch, Director of Health Services
Dr. Zahoor-ul-Haq, Deputy Director of Health Services
(Basic Health Services Project)
Dr. Abdul Salam Rind, District Health Officer, Pishin
Dr. Mohammed Aslam, Medical Officer, Pishin

World Health Organization

Dr. Jan Kaleta, Acting Program Coordinator
Dr. P. Giacometti, Medical Officer

University of Hawaii

Dr. Michael Porter, Chief-of-Party
Mr. John Eaton, Management Advisor
Dr. Robert Mack, Regional Training Advisor
Mr. Richard Johnson, Community Health Worker Training Advisor

USAID

Mr. Bryant George, Director (A)
Mr. Leslie A. Dean, Program Officer and
Project Manager, Basic Health Services Project
Dr. Rifaq A. Ismail, Public Health Physician and Project Officer
Basic Health Services Project

Others

Medical Officers, Dispensers, Compounders, Lady
Health Visitors and Dais in various health units
throughout Pakistan.
Dr. Melvyn Thorne and Mr. Fred Simmons, members
of the team evaluating the AID centrally funded
MEDEX core contract.

ANNEX B: List of Sites Visited

Northwest Frontier Province

Public Health School, Peshawar. Dr. Durre Kamal, Principal
Community Health Worker Training Site, Village Babri Banda,
Kohat District

Basic Health Unit, Billitang, Kohat District
Rural Health Center, Khairabad, Attock District

Punjab Province

Medical Technician Training School, Sialkot District
Rural Health Center, Chowinda, Sialkot District
Rural Health Center, Warburton, Sheikhpura District
Basic Health Unit, Ferozpur Watawan, Sheikhpura District
Rural Health Center, Choti Zerin, DG Khan District
Medical Technician Training School, DG Khan District

Sind Province

Training School for Medical Technicians, Badin,
Badin District
Rural Health Center, Daro, Thatta District
Basic Health Unit, Darya Khan Khoso, Thatta District

Baluchistan Province

Public Health School, Quetta, Dr. Shamim Qureshi, Principal
Medical Technician Training School, Quetta, Dr. Mohammed
Aslam Butt, Program Training Officer
Pishin Hospital and Rural Health Center, Pishin District

ANNEX C: List of Documents and Manuals

Project Paper

Loan and Grant Agreement, U.S. Government and Government of Pakistan, April 2, 1977

Amended Loan and Grant Agreement, U.S. Government and Government of Pakistan, September 26, 1979

University of Hawaii/Government of Pakistan Contract, June 11, 1977

Conditions Precedent, Responses of the Government of Pakistan

Project Implementation Letters 1-15

University of Hawaii Quarterly Reports

USAID Quarterly Reports

Medical Technician Training Modules

Manual of Management Systems Studies

Training Manual for Community Health Workers

Baseline Health Survey Report (February 1981 draft report).