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AN EVALUATION OF THE FIELD PERFORMANCE OF MID-LEVEL MEDICAL TECHNICIANS AND OF COMMUNITY HEALTH WORKERS TRAINED UNDER THE BASIC HEALTH SERVICES PROJECT

Islamabad, Pakistan
February 15, 1982

Submitted to USAID/Pakistan
by The Pragma Corporation

Prepared by:
Nils M.P. Daulaire, M.D., M.P.H.
Allen K. Jones, Ph.D.

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FINDINGS AND RECOMMENDATIONS

General Impressions

The establishment of comprehensive primary health care program is far more difficult than is generally recognized. In addition to these general constraints, there were a number of serious problems in the implementation of this Basic Health Services Project that were due to political conditions and decisions rather than shortcomings of the project itself. Viewed against the backdrop of these limitations, the evaluation team was favorably impressed by the project achievements they found.

The program has been well established in a number of areas and has begun to function in the field. Health workers are providing care at various levels. There is of course much room for improvement, and the remainder of this chapter will focus on specific issues which are important to ultimate program success. However, this should not detract from the achievements and commitment by the Government of Pakistan which have already been demonstrated.

Health Worker's Functions

While the health workers who were seen in the course of this evaluation are providing both curative medicine and preventive health measures, the thrust of their efforts is on the curative side. This is so despite the finding that both MT's and CHW's understood the importance of preventive and promotive health measures and consistently gave that

a higher priority than curative medicine. These workers have the potential for better translating their knowledge and skills in preventive health into action, and the next project should concentrate on first identifying and then implementing a mechanism that will accomplish this.

One possible means might be to have the workers become involved with the EPI program; this would probably be an easier project to tackle than some other preventive measures, such as digging wells or latrines. Once this project is successfully completed, the communities will have had the opportunity to witness the benefits they have derived and it will be easier to move to some other measure.

Knowledge and Skills

Slightly less than one third of the Medical Technicians performed well and more than one third performed poorly. The major variable in performance appeared to be the geographic area that the MT was trained and worked in. This is probably due to variations in the quality of teaching and supervision as well as differences in areas of knowledge and skills which are stressed by different teachers and supervisors. While decentralization is an important concept, an effort should be made for increased national standardization of training and expected performance.

Less than one quarter of the Community Health Workers performed well and more than one half performed poorly. The program has to date placed insufficient emphasis on the quality of training of CHW's. A major

variable in CHW test performance appeared to be literacy. This must be seen as a central issue in future program activities, especially in more backward areas. While it is undoubtably easier to train and supervised a CHW who is literate, availability of condidates as well as important social considerations point to the necessity of developing an appropriate program which can be used by illiterates.

Levels of knowledge for both MT's and CHW's were lowest concerning nutrition and family planning. This performance must be considered in the light of national priorities and adjustments made in the emphasis which these subjects receive in the training program. Among MT's, skills in several critical areas lagged well behind theoretical knowledge, pointing out the need for a more carefully structured practicum experience.

Selection of Workers

With regard to the selection of both mid-level and community health workers, it was generally found that the social characteristics of the workers in terms of their age, marital status, work place vs home place, etc. were generally consistent with the cultural norms of the society. In the case of some MT's, the men were young and unmarried; these social factors limit the range of patients they serve. Therefore, efforts should continue to be made to recruit somewhat older men who are married.

In terms of the selection of CHW's the process has worked reasonably well and produced workers who, for cultural reasons at least, should not be prevented from providing health services to the community. A word should be mentioned about the village communities in Sind: unlike the Punjab

where there is, despite vestiges of the caste system, generally a substantial degree of homogeneity in villages, the villages in some parts of Sind (i.e. Tharparkar) consist of several communities living side by side yet quite separately. Note should be made of this and an effort made to have at least one CHW trained for each such sub-community.

Among MT's, levels of previous education beyond ten years and previous health experience did not appear to be major factors in influencing knowledge and skills; therefore, the continued selection of matriculates would be reasonable.

While literacy is highly desirable in the selection of CHW's, social constraints make this impossible on a general basis. Means of training must be accomodated to this reality. In terms of expected knowledge and skills, there does not appear to be any advantage in selecting older people or traditional health workers to be CHW's, but societal factors of acceptability and availability may overshadow this.

There is a fine line to be walked here. CHW's who are well-prepared and capable will do little good if noone seeks them out or trusts them. On the other hand, providing traditional healers with the mantle of official government recognition without significantly upgrading their skills will have little impact beyond the political. The program must take both these factors into consideration in establishing adequate levels of both quality and acceptability of health care.

Women

Female workers particularly at the M.T. level face serious problems from the cultural standpoint in terms of age, marital status and work place vs home place. Most of these workers were found to be young, unmarried, and working in districts other than their native ones, posing serious cultural pressures on them and no doubt diminishing their effectiveness and sense of well-being in their jobs. Efforts must be made to remedy this situation by recruiting older, married women who are posted to their native districts. It is expected that these problems will be alleviated somewhat as the training of new workers continues and the pool of talent expands.

As an overall consideration, this program will not have a significant impact on health without a principal reliance on female health workers. It is therefore recommended that the issue of recruitment of women at both levels receive highest priority in the continuation of the program, and that areas which do not give significant evidence of female involvement or efforts toward that end receive lowest priority in terms of budgetary and programmatic support.

Curriculum

The curriculum developed for training MT's is comprehensive and understandable. However, it is so voluminous that primary issues appear to have sometimes become submerged. It would also be far more effective and appropriate if it were printed in Urdu, since few MT's have had more than a few years of formal training in English. Knowledge gained is more likely to be translated into effective action

if it is presented to the trainee in the language in which he thinks and acts rather than the language which he associates primary with written examinations.

Greater emphasis should be placed on the Community Health Module, and far greater attention should be paid to preparing the MT for becoming a trainer and supervisor of CHW's. It would be appropriate to use the Community Health module and CHW training manual as the core texts in the curriculum, with the other modules relegated to secondary importance.

In addition, a bit less knowledge about medical conditions such as diabetes would be a small price to pay against more thorough knowledge of basic practical issues such as oral rehydration therapy (incidentally, the CHW manual and MT module differ on the formulation of ORT; this should be corrected), nutrition needs, family planning, and malaria and TB surveillance. The sheer weight of the curriculum tends to submerge what is crucial to know in practical primary health care beneath the bulk of general theory and the more sophisticated, less common illnesses. This program should not be trying to train mid-level physicians.

MT's should not be placed in the field without a thorough knowledge of all the issues which they are expected to teach to the CHW's. Deficiencies in fundamental performance by the MT's will have a multiplier effect in the CHW's.

The training manual for CHW's is appropriate and well-balanced. As mentioned above, the MT's should be better prepared to employ this valuable tool. The MT's CHW training manual should also be printed in Urdu.

However, the curriculum must begin to deal with the issue of illiteracy in CHW trainees, especially among the women. A simple picture and symbol manual based on the current manual should be developed.

In addition, the manual given to the CHW for training should be his/hers to keep and refer to. This was often not the case in our survey findings.

Consideration should be given to different training curricula for male and female CHW's, with greater emphasis for the females in basic maternal and child health including childbirth, nutrition and diarrhea, and greater emphasis for the males in environmental sanitation and curative work.

With respect to the length of training, there appears to be no clear advantage established at this point between the 12-month and 18-month curriculum for MT's. Because of the other issues mentioned in CHW training, no conclusions can be drawn at this time about what length of training is most appropriate for them; of interest and significance, however, is the impression that the length of the curriculum was not a negative factor in CHW participation.

Most CHW's had received their training in their own villages. This is not a major constraint if an MT is working in only one or two villages, as was the case for most of those interviewed. However, it is likely to become a constraint if the program coverage expands as planned. Alternative schemes, such as bringing trainees to the RHU by means provided by either the villages or the program should be considered.

Supervision and Continuing Education

Ideally, these two are part of the same process. At present there is scarce little of what might be considered supervision and virtually no continuing education. In most Rural Health Complexes visited, the Medical Officer's involvement in the program was extremely limited.

With the program now established in its early phases in a number of sitles, development of a cohesive plan of supervision and continuing education is of primary importance. M.O.'s responsible for RHC's where the program has been established should receive a short, intensive course in program management and oversight. Adherence to this course should be monitored by the respective District Health Officers.

The knowledge and performance of MT's may be expected to deteriorate rapidly without this continued input. Similarly, the MT's role as supervisor of the CHW's in his area must be highly stressed. Again, this must be in the form of ongoing education and reinforcement, not

simply the checking of registers and stocks.

The issue of coverage and distance becomes even more critical with respect to supervision. If an MT must spend most of his time in tiring foot travel in order to visit his CHW's he will soon cease to do so; he will cease all the more rapidly if he himself does not receive regular visits from the M.O. (who after all at least has a jeep). Some practical solution to the transport problems must be sought; this problem is especially critical with respect to women.

The most popular request by the MT 's was for motorcycles which some workers said they would be willing to pay for out of their salary. Motorcycles may be appropriate for male workers but they are not for female workers. For females, the problem is compounded by the constraints of travelling unescorted in rural areas.

The possibility might be explored of establishing contractual arrangements,at either program or village expense, with a tonga for each BHU in order to transport MT's to the village for which they are responsible. No better or more affordable solution seems to be at hand at this point, but this must receive attention in the next phase of project development.

Because the issue of ongoing field supervision is central to program success, means must be devised to provide adequate incentives for the MT's in addition to their means of transporation. This obviously enters into areas of government policy which might overlap with other sectors, but performance-based financial incentives (as

opposed to blanket incentives which tend to do little to actually stimulate field visits) should be considered as a part of program design.

Attitudes of Workers

For the most part workers expressed satisfaction with their relationship to the health system. All of them expressed happiness at being health workers and most of them were satisfied with their job conditions except for low pay and transport difficulties. Dissatisfaction with pay levels is a frequent complaint by MT's and the next project should look at this issue closely to see if the workers are justified in their feelings and to determine if anything should be added to their salary. Aside from a stright increase in pay, other options would be for them to receive a hardship allowance, a rural allowance, or field travel incentives as discussed above in order to supplement their income.

With regard to the issue of the worker's relationship to the community, the majority of them stated that they felt accepted by the community and that they were having an impact on the community's health. Though it is likely that some of the responses of the workers were self-serving, it is felt that the workers have experienced a measure of acceptance in the community and that they are having an impact. Further efforts may be taken in this area as discussed above.

Attitudes of the Community

In general, the expressed attitudes of the community toward the health system and its workers are positive. They claim to use the services of the health workers, state they they prefer the health system worker's services to those of traditional health providers (i.e. hakims/dais), and express satisfaction with the help the HF's and CHWs have provided. It is true that communities at this point perceive the workers in the system as primarily providers of curative medicine, and in order to right the balance more in favor of preventive and promotive activities, the next project will need to focus on ways to accomplish this.

Issues of Compensation vs Volunteerism

Most of the CHW's are presently providing their services free and a majority of them also state that they believe a free service arrangement can go on indefinitely. However, when asked if they preferred a free service vs a fee for service arrangement, the numbers were much more evenly divided, though with most still on the free service side. When asked from what source payment should be made to the CHW, both CHW's and villagers stated that it should come from the government, not from the village.

It appears that a volunteer system could go on for some time - it has done so now in the Punjab for almost a year. After talking with some of the CHW's we feel that it could go on in their

particular communities indefinitely since they see their work as akin to moral and religious service. But for the system as a whole, it is unlikely that free service will last for long if the level of health activities continues at its current pace. It would be a different matter, however, if the pace increases; then the community worker and the community itself would more greatly value the health service provided and if need be the community would likely find the means to support the CHW.

A study should be carried out in the near future to determine availability of village resources to support their CHW's, and in what ways such resources could be most readily and effectively utilized.

No one solution for all of Pakistan will work by itself

BACKGROUND AND SCOPE OF WORK

Following the end of the Basic Health Services Project (Project No. 391-0415) in late 1980, a terminal evaluation was conducted under USAID in early 1981.[1] At that time virtually no mid-level Medical Technicians (MT's) had been placed in the field. This made a full evaluation of the project impossible since a primary goal of the Project had been the training and deployment of these personnel.

Under the project design, the MT's were to serve as the trainers and supervisors of Community Health Workers (CHW's). That meant that there were no CHW's to evaluate at that time either.

As a result, the evaluation report focussed on the constraints which had forced a severe curtailment of originally anticipated project outputs. It also included a straightfoward quantitative listing of MT's under training who would presumably be available for qualitative assessment later in 1981.

The purpose of the present evaluation was to conduct this qualitative assessment. The evaluation team, consisting of Dr. Nils Daulaire, a primary health care epidemiologist, and Dr. Allen Jones,

1. Basic Health Services Project, No. 391-0415, Terminal Evaluation: Report of the Project Evaluation Team, January 18 - February 20, 1981; Islamabad, Pakistan.

a historian and social scientist, arrived in Pakistan in mid-January, 1982. Their scope of work consisted of several parts. They were to assess the performance of MT's as well as CHW's in the field, determine what major problems these personnel were facing, and appraise the training and supervisory programs in the light of that information. In addition, they were to consider various social factors which might play significant roles in the effectiveness of these workers. Included in these were the levels of village participation, sex and background of health workers, methods of selection, and issues of compensation.

Initially, the evaluation team prepared questionnaires relating to these topics. These questionnaires were based on official project curricula, advice of Government of Pakistan and USAID officials, and the personal experience of the evaluation team members. Subsequently, the team spent fifteen days in the field, visiting five project sites in the provinces of Punjab and Sind, where these questionnaires were first tested and refined, and then utilised.

Given the short period of time allowed for the survey and the additional time constraints of transfer from one widely spaced site to another, a compromise was sought between the goals of in-depth social analysis and observed job performance, which would have required a minimum of one week at each site, and of broad and representative coverage, which would have required the widest sampling possible.

The compromise which was arrived at provided for two days at each site, spent at the Rural Health Center, two Basic Health Units, and two associated villages. Three MT's of each sex and two CHW's of each sex were sought for interviews at these sites if available. The shortcomings of this compromise are clearly recognized by the evaluation team, who nonetheless feel that the findings and recommendations arrived at have more general applicability.

Upon their return from the field, the evaluation team conducted an analysis of the results of these questionnaires. This report is based on that analysis as well as on related findings and impressions. As is clear from the original scope of work, this study was not intended to deal with quantitative outputs (numbers of workers trained, coverage of villages, etc), nor with critical managerial aspects of program functions. However, despite not having focussed on these issues, some impressions and recommendations in this report relate to these subjects as well.

It is hoped that this report will provide a clearer picture of the Basic Health Services Program in Pakistan, and that it will assist in the strengthening and reinforment of this program.

METHODOLOGY

Initially, one site (Warburton) was selected for field-testing the prototype questionnaires. This site was chosen for its proximity to Lahore and ease of access, and because it had recently received a visit from program officials, which would presumably make it atypical as a sampling site.

The remaining sites in Punjab were stratified according to whether they were relatively close to Lahore (Lalamusa and Sialkot) or distant (Uch Sharif and D.G. Khan). The selection within each pair was randomly made with a coin toss on the day they were to be reached, to avoid advance preparation of health workers by health officials. Lalamusa and D.G. Khan were the two Punjab sites selected.

In Sind, site selection was not random. Again, two sites were visited, one relatively close to Hyderabad and one distant. There was only one distant site, Sukkur (Kandhra), and of the remaining two near sites, only one, Pithoro, was fully functional according to provincial health officials. Therefore, these were the two Sind sites visited.

Within each site, the Rural Health Center was first visited. Upon arrival, one male and one female MI working at the RHC were interviewed; if there were more than one of each to chose from, the selection was made randomly. The questionnaires were administered, taking a total of approximately 2½ hours.

At this point a random selection of two of the most fully-staffed Basic Health Units attached to this RHC was made. These would be visited over the next day and a half. The BHU's thus selected ranged from only a few kilometers distant on a main paved road to over 20 miles on a sand track.

At each BHU, the male and female MT were interviewed using the same questionnaires (there were no female MT's in the BHU's in Sind, so only the one male was interviewed). Based on information provided by these MT's, a list was made of villages connected to the BHU in which there were CHW's who had been trained. If there were no such villages, the second choice would be between villages in which health activities had been initiated by the MT's. When a choice was possible, one village would be chosen randomly; most often, no choice was possible.

In each of the villages selected, one male and one female CHW were interviewed. Again, selection was random if there was a choice, but that was a rare event. Questionnaires were administered by both members of the evaluation team, following which the social scientist visited all quadrants of the village, selecting available villagers at random to interview concerning attitudes and interactions with the program.

In total, four RHC's were included in this survey, eight BHU's, and nine villages. Twenty fully trained MT's were interviewed (12 males, 8 females), and nine fully trained CHW's (6 males, 3 females). While the sample size is small, it does represent a substantial portion of actual program outputs to this time (for example, the sole fully-

trained CHW in Sind is included in the survey).

Therefore, although results may not hold true if the program expands or changes format substantially, these results do accurately reflect the current status of the program.

INSTRUMENTS

The questionnaires which were developed for use in this survey fall into several categories. In addition to basic background and identification information, health workers were asked questions about their training and supervision. Questionnaires were developed to test the knowledge and skills of both MT's and CHW's. Attitudes towards the program were elicited not only from the health workers but also from members of the community. And evidence of impact on the villages themselves was sought. The questionnaires which were used in this survey follow:

Used for all Medical Technicians and Community Health Workers

FORM 1 - Identification

1. I.D. Number
2. Full Name
3. Medical Technician (MT) or Community Health Worker (CHW)
4. Age
5. Date of Interview
6. Sex (M or F)
7. Marital status - Married (M), Single (S), Widowed (W), Divorced (D)
8. Number of Children
9. Current Work Location
   a. Province
   b. District
   c. Rural Health Centre
   d. Basic Health Unit
   e. Village (for CHW only)
10. Original home place
    a. Province
    b. District
    c. Village
11. How many months has he/shee been working as a fully trained MT or CHW ?

ANSWER SHEET FOR FORM 1

1. I.D. number		
2. Name		
3. MT/CHW		
4. Age		
5. Date		
6. Sex		
7. Marital status		
8. Number children		
9. a. Province		
b. District		
c. RHC		
d. BHU		
e. Village		
10. a. Province		
b. District		
c. Village		
11. Starting date		

Used for all Medical Technicians and Community Health Workers

Form 2 - Training and Background

I. D. Number

1. Do you speak the local language

   a. Fluently

   b. Slightly

   c. Not at all

2. Do you speak Urdu

   a. Fluently

   b. Slightly

   c. Not at all

3. Do you read Urdu

   a. Well

   b. With difficulty

   c. Not at all

4. Do you speak English

   a. Fluently

   b. Slightly

   c. Not at all

5. Do you read English

   a. Well

   b. With difficulty

   c. Not at all

6. How many years of education have you had?

7. Did you work in the health field before becoming involved in this program?

   a. Yes, working for the government

   b. Yes, but not working forthe government

   c. No

8. Where did you receive your training for this program? (Answer all parts)

   a. Name of school (if formal school)

   b. In same district? (Yes/No)

   c. in same town or village? (Yes/No)

   d. Approximate number of miles from your home. (For CHW's only)

9. What was the length of your training program?

   a. For MLMT : 12 months, 18 months, or other

   b. For CHW : number of weeks and approximate total number of sessions

10. How many people were in your training class?

11. Was your training class for mixed sexes? (Yes/No)

12. Do you feel your training program was:

   a. Too short
   b. Just the right length of time
   c. Too long

13. Did you receive a manual or book for your training?

14. Do you still use your manual for your daily work?

15. How well did our training program prepare you for the work you have had to do?

    a. Adequately

    b. Very well

    c. Poorly

16. Are there any specific topics you wish you knew more about or had received more instruction in?
    List :

17. Optional open-ended question : do you have any suggestions for improving the training program?

ANSWER SHEET FOR FORM 2

I. D. number			
Question 1			
2			
3			
4			
5			
6			
7			
8a			
8b			
8c			
8d			
9			
10			
11			
12			
13			
14			
15			
16			
17			

Used For Medical Technicians Only

Form 3 M - Relationships with Health System

1. I.D. Number

2. Who supervises your work for the most part?

   Answers : a. Physician - MO or DHO

   b. MT Supervisor

   c. Other - Specify

3. How many times in the past one month has your supervisor come to your place of work to oversee your activities?

4. During this supervisory visit, what does your supervisor do? Select one or several in order of importance:

   a. Discusses with you difficult cases you have seen and problems you have had in caring for patients.
   b. Sees patients together with you.
   c. Assists you on a sanitary inspection of the village.
   d. Reviews your record-keeping.
   e. Other (specify)

5. How many villages are your personally responsible for over-seeing?

6. How many of these villages have you actually visited in the past one month?

7. In how many of these villages have Health Committees actually been formed upto this time?

8. In how many of these villages have separate Women's Health Committees actually been formed up to this time.

9. What characteristics do you advise or would you advise the Health Committee to look for in terms of their selection of CHWs, in terms of:

   a. Age
   b. Previous experience of background
   c. Other (specify)

10. What do you think is the best number of male and female CHW's for a village with a population of 2,000 people?

11. How many CHW's have you fully trained upto now?

12. From how many villages have these CHW's come?

13. How long has the full training course been?

    Answer all : a. Number of weeks
    b. Number of sessions perweek (average)
    c. Number of hours per session (average)

14. Where have the training sessions been held?
    Select one or several in order of frequency:

    a. CHW's own village
    b. Several different villages
    c. Basic Health Unit or Rural Health Centre

15. How often do you supervise each individual fully trained CHW (on the average)?

16. How long ago was your last supervisory visit of a CHW?

17. What are your major activities on supervisory visits?
    Select one or several in order of importance:

    a. Discuss cases CHW has seen
    b. See patients jointly with CHW.
    c. See patients alone without CHW.
    d. Conduct sanitary and health inspection with CHW.
    e. Give lectures and demonstrations to villagers.
    f. Other (specify)

18. Is it difficult for you to actually get out to the villages? (Yes/No)
    If yes, would you go out to the villages appreciably move often if you had better means of transportation? (Yes/No)

ANSWER SHEET FOR FORM 3M

1. I.D. number			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9a.			
b.			
c.			
10.			
11.			
12.			
13a.			
b.			
c.			
14.			
15.			
16.			
17.			
18.			

Used For Medical Technicians Only

Form 4 M - Knowledge and Skills

Note : These questions are asked in a response-evocative manner; that is, the wording may be changed so that the MT better understands the issues which the questioner is trying to elicit. The MT is also encouraged to simply say "I don't know" rather than try to invent a response.

I. D. Number

1. What are the most important issues that should be considered in an effort to improve the overall level of health or the people in a village?

2. What are the basic general ways in which most infections diseases may spread from one person to another?

3. What are the specific diseases against which one can be immunized?

4. What are the things that can be done to improve an open well which is slightly contaminated, and how can the water be made safe to drink?

5. Have you actually helped any of the villages to improve their water sources? If yes, please describe.

6. What is the best practical way for people in a village to dispose of human excreta?

7. Have you done a written survey of water sources or latrines in any of the villages for which you are responsible? If yes, please show me.

8. If a young child is brought to you suffering from diarrhoea, what is the most important aspect of the child's condition which you should check for?

9. What is the most important treatment for a child with diarrhea?

10. Please show me exactly how you would advise a mother to prepare oral rehydration solution from locally available materials.

11. What are some possible conditions that might be causing diarrhea in a young child?

12. If you are going to lecture villagers about malnutrition, what should you tell them as the most important aspects for preventing malnutrition in young children?

13. What are the three major categories of food, in words which you can use to tell villagers?

14. Give me two examples each of energy foods, body-building foods and protective foods.

15. How would you measure the nutritional status of a young child?

16. Please show or describe to me how the armband is used.

17. Do you actually have an armband with you at the BHU? If yes, please show it to me.

18. If a mother brings her three and a half year old child to see you, and you find the child is suffering from mild to moderate malnutrition, what should be done?

19. What ingredients and in what proportions do you tell families to use in making high-nutrition kitchri or super porridge?

20. What is the first food that should be given in order to begin rehabilitation of a severely malnourished child who is too weak to take solid foods?

21. What goes into Fortified Milk Solution, and in what proportions?

22. What is the earliest age for a mother at which it is medically safe and advisable to have her first baby?

23. What is the latest age for a mother when it is no longer medically safe and advisable to continue to have babies?

24. What is the shortest period that you would advise a mother to wait between having one baby and the next?

25. What are the advantages of child spacing?

26. According to your personal opinion, what is the best number of children for a family to have?

27. Do people ever come to you who wish to limit the size of their families?

28. What are the different scientific methods of family planning?

29. If a woman has been taking birth control pills for several months and then forgets to take one pill, what should she do and is she in danger of becoming pregnant?

30. If a woman has been taking birth control pills for several months and then forgets to take her pills for three successive days, what should she do and is she in danger of becoming pregnant?

Questions 31 – 34 are to be asked of female MT's only

31. What should you advise all pregnant women regarding medications, food and medical care?

32. If a woman comes to you in her eighth month of pregnancy and says she has started to suffer from head-aches and swelling of her ankles, what condition would you suspect and what tests could you do to confirm your suspicion?

33. What preparations should the mother and the midwife make just before the baby is born in a home delivery?

34. If you are attending a women, who has had four previous children, during her labour, how long can you safely wait before you should get assistance from a doctor?

35. What is the most serious and dangerous illness that is likely to strike an otherwise healthy baby during its first week of life.

36. What should be done in all pregnancies and deliveries to prevent neonatal tetanus?

37. How long should instruments be boiled to prevent tetanus?

38. If a person, age 35, comes to you complaining of headache, fever and shaking chills which have occurred only in the evening for each of the past three days, what illness would you suspect?

39. By what means is malaria transmitted?

40. How can the number of mosquitoes in and around a village be reduced, and how can people avoid being bitten by malaria-carrying mosquitoes?

41. Do you know how to prepare a malaria slide? If yes, please demonstrate or describe in detail.

42. Do you have the materials available where you work which you would need to make malaria slides?

43. What do you use to treat malaria?

44. If a person, age 55, came to you complaining of four months of continued weight loss, loss of appetite, sweating at night, and a productive cough, what illness would you suspect?

45. What tests could be done in a hospital to confirm the diagnosis of TB?

46. Do you know how to prepare a TB slide? If yes, please demonstrate or describe in detail.

47. Do you have the materials available where you work which you would need to make TB slides?

48. If a child, age 2 years, who has a puffy face, arms and legs and who has only a weak cry is brought to see you by his mother, and she says the puffiness developed quite rapidly over the past one week, what illness would you suspect and what is its cause?

49. If a child, age 5 years, is brought to you suffering from cough, fevers, difficulty breathing and some pain in his chest over the past 3 days, what illness would you suspect?

50. What is the best treatment for pneumonia?

51. If a person, age 40 years, comes to you with an abscess on the top of his foot which is not fit for incision, what should be the treatment and how would you advise him to care for his abscess at home?

ANSWER KEY TO FORM 4M

1. Clean water, good latrines, general environmental sanitation, good nutrition, immunizations (any two, including water, required for credit)

2. Direct contact, fecal contaimination, vectors (any two required for credit)

3. Diphtheria, Pertussis, Tetanus, Measles, Polio, TB (at least 5 required for credit, may use local names for diseases; "DPT" not adequate, must demonstrate understand of what these diseases are)

4. Cover, Chlorination of water (both required for credit, may be elicited)

5. (Clear and convincing description of actual improvement activities required for credit)

6. Pit latrines

7. (Demonstration of written survey in clear and understandable format required for credit)

8. Dehydration (description of several signs of dehydration should be followed up by questions to elicit the term dehydration for credit).

9. Oral rehydration solution (or oralyte)

10. One seer/litre/kg boiled water, to which two fist-fuls of sugar and two pinches of salt are added (all quantities must be correct and water must be stated to be boiled for credit).

11. Bottle feeding, weaning, intestinal infections, other infections, poor nutrition (any two, including bottle feeding, can be elicited from the respondent for credit)

12. Breastfeed child for 2-3 years, start variety of supplementary foods at 4 months, feed liquids with cup and spoon, increase protein for pregnant and lactating mothers, wean slowly, continue to feed sick children (at least four, including those underlined, should be elicited for credit. Questioner may take an active role in eliciting answers)

13. Body-building foods, energy foods, protective foods (all three required for credit)

14. Energy : Carbohydrates, oils (any two); body-building : egg, meat, mil, fish, dal (any two); protective: fruits, green and yellow vegetables (any two) (two from each category required for credit)

15. Armband, weight for age (either sufficient for credit).

16. (Dintinction must be clearly made between normal, mild-moderate malnutrition, and severe malnutrition for credit).

17. (Must be shown to examiner for credit)

18. Mother should be advised to increase specific protein foods, fruits, yellow and green leafy vegetables, give high nutrition kitchri or super-porridge, and feed her child at least four times a day (Several types of food plus frequency of feeding should be elicited for credit)

19. 2 rice : 1 dal : 1 vegetable : 1/2 oil; or 1 wheat: 1 corn : 2 pulse (either required with correct proportions for credit).

20. Fortified Milk Solution (for FMS) and vitamins

21. 10 parts nonfat milk powder : 2 parts vegetable oil: 1 part sugar; add mixture to boiled water in 1:3 or 1:4 proportion (all ingredients and proportions required for credit).

22. 18 (write down age given)

23. 35 (write down age given)

24. 3 years (needed for credit, also write down period of time given)

25. Breast feeding full 2-3 years, giving mother opportunity to recover strength, financial advantage for family (first two must be elicited for credit).

26. (Write down number given)

27. (Give credit for yes)

28. Birth control pills, IUD, Condoms, Depo-Provera injections, contraceptive jelly, diaphragm, tubal ligation, vasectomy (at least four methods) including those underlined and one surgical method, required for credit).

29. Take 2 pills the next day, then continue with one a day; no danger of pregnancy (full answer required for credit).

30. Discard the missed pills, then take the remainder of the packet as usual; should use other form of contraception such as condoms in addition because of risk of pregnancy for remainder of month (full answer required for credit).

31. Iron, folic acid, good general nutrition with emphasis on protein and green vegetables, and at least one prevental exam (at least three, including prevental exam, required for credit)

32. Pre-eclampsia; blood pressure, urine exam (both underlined answers required for credit)

33. Clean room and clean linen, careful cleaning of mother's vaginal area; midwife must remove all jewelry and scrude both hands down to her elbows, including careful cleaning fingernails; instrument for cutting cord as well as thread for tying cord must be sterilized (all underlined answers must be elicited for credit to be given)

34. Up to 12 hours

35. Tetanus (no hints or clues may be given)

36. Immunization of mother in seventh month, sterilization of all instruments used on cord, careful protection of cord (underlined answers must be elicited for credit).

37. At least 15 minutes (no credit given for any shorter period stated)

38. Malaria

39. Mosquitoes

40. Draining or filling in areas of standing stagnant water, spraying breeding areas with insecticide or kerosene oil; use of mosquito nets (all three must be elicited for credit)

41. (Must include spreading blood with second glass slide for thin thin smear as well as mention of thick smear for credit)

42. (Credit given for yes, slides and lancets should be demonstrated)

43. Chloroquine tablets

44. TB

46. Sputum exam, chest X-ray, ESR skin test (all three underlined required for credit).

46. (Must include choice of thick sputum, use of carbol fuchsin, decolorisation, and methylene blue for credit)

47. (Credit given for yes, slides and stain material should be demonstrated)

48. Kwashior kor (or protein malnutrition)

49. Pneumonia

50. Penicillin (must be first antibiotic named in order to receive credit)

51. Penicillin; hot soaks at least three times a day for at least fifteen minutes each time (both needed for credit)

ANSWER SHEET FOR FORM 4M

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ANSWER SHEET FOR FORM 4EL SCORING SHEET

I. D. number		Point
Question 1		16
2		39
3		31
4	Section 1	39
5		16
6		30
7		39
8		44
9		43
10	Section 2	44
11		44
12		31
13		13
14		13
15		6
16	Section 3	19
17		6
18		25
19		13
20		12
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22		19
23		10
24		29
25		29
26	Section 4	0
27		10
28		39
29		10
30		29
31		27
32		17
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34		17
35	Section 5	22
36		32
37		35
38		14
39		5
40		9
41		14
42		0
43	Section 6	13
44		22
45		15
46		18
47		0
48		31
49		22
50		23
51		[illegible]

SCORE SHEET FOR FORM 4M

I.D. number	Possible score										
Section 1 (Prevention)	210										
Section 2 (Diarrhea)	175										
Section 3 (Malnutrition)	175										
Section 4 (Family planning)	175										
Section 5 (Preg & childbirth)	87 M 175 F										
Section 6 (Curative med)	178										
Total score	1000 M 1088 F										
Overall percent											

Used for Community
Health Workers Only

FORM 3C - Relationships with Health System

1. I.D. Number

2. Who supervises your work for the most part?
   Answers : a. MT
   b. Other - specify
   c. Noone

3. How many times in the past one month has your supervisor cam to your village to oversee your activities?

4. During this supervisory visit, what does your supervisor do? Select one or several in order of importance:

   a. Discusses with your difficult cases you have seen and problems you have had in caring for patients

   b. Sees patients together with you

   c. Sees patients alone

   d. Conducts sanitary and health inspections with you

   e. Gives lectures and demonstrations to villagers

   f. Other (specify)

ANSWER SHEET FOR FORM 3C

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Used for Community
Health Workers Only

FORM 4C - Knowledge and Skills

Note: These questions are asked in a response-evocation manner; that is, the wording may be changed so that the CHW better understands the issues which the questioner is trying to elicit.

1. What are some things that could be done in the village to improve everyone's health and prevent disease?

2. Describe what would be a good source of water and what would be a bad source of water for people in your village.

3. Since becoming a CHW, have you been able to accomplish anything to improve your village's water sources? If yes, what?

4. Is it important for people in the village to use pit latrines? Why? What are some of the diseases that pit latrines can help to prevent.

5. What are the diseases against which one can be immunised?

6. What are the general ways in which most infectious diseases are spread?

7. If a person comes to you complaining of headache, fever and shaking chills, which have occurred only in the evening for each of the past three days, what illness would you suspect?

8. How is malaria transmitted?

9. What can people in the village do to reduce the number of mosquitoes, and how can they keep from being bitten as much by mosquitoes, which may be carrying malaria?

10. What is the treatment for malaria?

11. If a person comes to you complaining of loss of appetite, loss of weight, cough and night sweats for the past several months, what illness would you suspect?

12. What would you do about this patient?

13. What is the best treatment for diarrhea?

14. What are some of the possible causes of diarrhea in a young child?

15. In what circumstances would you refer a young child with diarrhea to the Basic Health Unit or Rural Health Centre immediately after you have seen him.

16. What is a way to measure whether a young child is under-nourished or normal?

17. Have you been given an armband to measure nutritional status? If yes, please show it to me.

18. What can you tell families they can do to prevent malnutrition in their very young children?

19. What are the three major categories of food that everyone must eat to stay healthy?

20. What are two examples each of energy foods, body-building foods, and protective foods?

21. How should high-nutrition kitchri or super porridge be made?

Questions 22-24 are to be asked of female CHW's only.

22. What should you advise all pregnant women to do in terms of food, medicines, and medical care?

23. What preparations should the midwife and the mother make just before delivery?

24. If a woman has had several children previously, how long is it safe for her to be in active labour before you should seek help from the BHU or RHC?

25. What is the most dangerous common illness that can happen to a newborn in the first week of its life?

26. What can be done to prevent tetanus in a newborn?

27. If a young child who is no longer breastfeeding becomes very puffy in his face, hands and feet, what is the probable reason?

28. What would you do if such a child were brought to you?

29. What is the youngest that it is safe for a woman to have her first child?

30. What is the oldest age after which it is not safe for a women to continue having children?

31. What is the shortest time a women should wait between having one child and the next?

32. What is the advantage of child spacing?

33. In your personal opinion, what is the best number of children for a family to have?

34. What are the different methods of family planning?

35. If an adult comes to you complaining of a small boil which is red and swollen but does not have any pus, and which is on the side of the ankle, what do you recommend that the person should do to make it better.

Used for Community
Health Workers only

ANSWER KEY TO FORM 4C

1. Improve wells, build latrines, environmental sanitation, nutrition, immunization (at least two needed for credit)

2. Good sources : tube well, covered well; bad sources : standing water, canals, ponds (one of each needed for credit)

3. (Credit given only for concrete accomplishment, not for such things as "people are boiling their drinking water more often")

4. Pit latrines are important to prevent the spread of diseases, such as diarrhea, hookworm, amoeba, etc. (underlined answers must be elicited for credit)

5. Diptheria, pertussis, Tetanus, Measles, Polio, TB (local names for these diseases may be used, at least four required for credit)

6. Direct control, fecal contamination, vectors (at least two must be elicited for credit)

7. Malaria (local name may be used)

8. Mosquitoes (no credit given if additional means of transmission are added by CHW)

9. Drain or fill in pools of stagnant standing water, spray breeding areas with insecticide or kerosene oil; mosquito nets at night (underlined answers must be elicited for credit)

10. Chloroquine tablets

11. TB (local name may be used)

12. Refer to BHU, RHC or hospital

13. Oral rehydration solution

14. Bottle feeding, rapid weaning, poor nutrition, intestinal infections, other infections (at least two must be elicited, including bottle feeding, for credit)

15. Severe dehydration, vomiting, or unconsciousness (at least one must be mentioned for credit).

16. Arm band

17. (Credit given if arm band is shown)

18. Breast feed to age 2-3, do not bottle feed, use cup and spoon for liquids, start adding nutritious supplementary foods at 4 months, provide increased protein foods for pregnant and lactating mothers, continue to feed sick children (at least four must be elicited, including underlined answers, for credit)

19. Energy, protective, body-building.

20. Energy: any starches, any oils; protective: fruits, green and yellow vegetables; body-building: meats, fish, eggs, milk, dal (two locally available examples of each category must be given for credit).

21. 2 rice : 1 dal : 1 vegetable : $\frac{1}{2}$ oil; or 1 wheat: 1 corn : 1 pulse(either acceptable for credit)

22. Improved nutrition, including body-building and protective foods; iron and folic acid tables; at least one prenatal exam, immunization (all underlined answers must be elicited for credit).

23. Clean clothes and linens, carefully clean mother's vaginal area, midwife removes rings and jewelry, cleans under fingernails, and scrubs both hands to elbows; instruments for cutting and tying cord sterilized in boiling water (mother and midwife cleanliness and instrument sterilization must be elicited for credit).

24. No more than 12 hours.

25. Tetanus (local name may be used)

26. Immunization of mother in 7th month of pregnancy, sterilization of cord instruments in boiling water for at least 15 minutes (underlined answers must be elicited for credit)

27. Severe malnutrition, protein deficiency, kwashiorkor (answer indicating cause as nutritional deficiency must be given for credit, hints or prompting may not be given to CHW)

28. Advise improved nutrition, including emphasis on body-building foods; refer to BHU (either answer acceptable for credit)

29. 18 (also write down age given)

30. 35 (also write down age given)

31. 3 years (also write down period given)

32. Longer breast feeding and better health for child, opportunity for mother to recover strength, economic advantage for father (underlined answers must be elicited for credit)

33. (Write down number given)

34. Birth control pills, IUD, Condoms, Contraceptive jelly, diaphragm; tubal ligation, vasectomy (at least 3 methods, including pills, must be mentioned for credit).

35. Hot soaks for at least fifteen minutes three times a day.

ANSWER SHEET FOR FORM 4C

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SCORING SHEET
ANSWER SHEET FOR FORM 4C

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24		3
25		4
26		6
27		3
28		3
29		2
30		1
31		6
32		5
33		0
34		4
35		4

Section 1

Section 2

Section 3

Section 4

Section 5

Section 6

SCORE SHEET FOR FORM 4C

	Possible score										
I. D. number											
Section 1 (Prevention)	24										
Section 2 (Diseases)	18										
Section 3 (Diarrheea)	12										
Section 4 (Nutrition)	18										
Section 5 (Preg&childbirth)	10M 20F										
Section 6 (Fam. planning)	18										
Total score	100M 110F										
Overall percent											

SOCIAL ISSUES

I.D. No. _____ FORM 5A

QUESTIONS ASKED OF MID LEVEL HEALTH WORKERS(MLHWs)

A. QUESTIONS OF MALE & FEMALE MLHWs.

1. a) How many Patients do you see on an average day?

   b) Are they mostly men? Women? Children?
   (1-5; 51)

2. a) Where do the patients come from?

   b) How far away?

   c) How do they come? On foot? By tonga? By bus? Other?

3. I am going to describe some of your duties.
   Please describe them in order of importance.

   a) See and treat patients at IRHC/BHU?

   b) Assist IRHC Physician according to his/her needs in his treatment of patients.

   c) Record-keeping, supplies and other administrative and clerical work.

   d) Work in villages to improve awareness of health problems and sanitation.

   e) Overseeing CHWs.

   f) Other (specify).

4. a) Which do villagers prefer your services or those of a traditional health provider like a Hakim or a Dai?

   b) Why?

5. a) Is health work your first choice of profession?

   b) Are you happy with the conditions of your job as a MLHW?

   c) Can you suggest any improvements in your job?

6. Where do you live while working?

7. Do you live with:

   a) parents?
   b) Husband/wife?
   c) relatives?
   d) friends?
   e) alone?
   f) other?

8. How do you get to and from work?

   a) on foot?
   b) by bus?
   c) other?

9. How long does it take to get to work?

10. Is transport a difficulty for you

    a) in getting to your place of work?
    b) when you supervise CHWs?
    c) if so, can you suggest any improvements?

11. a) Do you feel accepted by the community?

    b) If so, can you give an example of your acceptance?

12. a) Do you feel you are having an impact on the community?

    b) If so, can you give an example?

13. a) Do you think the Basic Health Services Program for which you have been trained will be a success?

    b) Why.

FORM 5B

B. QUESTIONS OF FEMALE MLHWs ONLY

1. Of the patients you see, are they

   a) all women and children? (yes/no)

   b) more children and less women?

   c) more women and less children?

2. How many deliveries did you attend to

   a) in the past month?

   b) in the past three months?

3. a) Were all the deliveries normal (Yes/No)

   b) If not, were they referred'

   c) Were there any deaths?

4. a) As a worker who is a female, do you feel you have any special problems.

   b) If so, how can they be alleviated/ended?

I. D. No.____ FORM 6

QUESTIONS ASKED OF COMMUNITY HEALTH WORKERS (CHWs)

QUESTIONS OF MALE AND FEMALE CHWs.

1. a) Is this village your native place?

   b) If not, how long have you lived here?

2. Do you live with

   a) your parents?

   b) your husband/wife?

   c) relatives?

   d) friends?

   e) alone?

   f) other?

3. What is your occupation?

4. a) How were you selected to be a CHW?

   b) Why were you selected?

   c) Did the health committee play a role?

   d) The villagers?

   e) The medical technician?

   f) Which played the largest role?

5. a) Who are the members of the health committee?

   b) How often do they meet?

   c) Do they assist you in your work?

   d) In what ways?

6. a) How many people do you see in an average week?

   b) Are these people just from your village?

7. I am going to describe some of your duties. Please list them in order of importance (For male CHWs)

   a) referring serious cases to BHU.

   b) taking care of sick villagers.

   c) helping villagers to improve wells and sanitation.

   d) telling villagers what to do if a child has diarrhoea.

   e) other (specify)

   (For female CHWs)

   a) taking to villagers about safe water supply.

   b) taking care of sick villagers.

   c) teaching mothers how to keep their babies healthy.

   d) helping care for pregnant mothers.

   e) other (specify)

8. a) Where do you see patients?

   b) When do you see patients?

9. a) What talks have you given to the villagers?

   b) When was the last talk you gave?

   c) What was it about?

10. a) Do villagers prefer your services to those of a hakim? (of male CHWs)

    b) Do villagers prefer your services to those of a dii? (of female CHWs)

    c) Why?

11. a) Are you happy doing this kind of health work?

    b) Why?

    c) Are you happy with your job as a CHW?

    d) Can you suggest any improvements?

12. (Of Female CHWs only)

    a) As a female health worker, do you feel you have any special problems?

    b) If so, how can improvements be made?

13. a) Has your estimation in the community increased since you began this work?

    b) How?

14. a) What are your sources of income?

    b) Just from your occupation?

15.a) Do you provide your health services free?

b) All of them?

c) If not, which ones?

16.a) Do you charge for your services?

b) All of them?

c) If not, which ones?

d) How do you charge?

e) How much for each service?

17. Can a free services arrangement in which you work without pay be successful

a) for how?

b) for the long-term?

18. a) Do you favour a fee for services arrangement over free services?

b) Why?

19. Which fee for services arrangement do you think is best and why?

a) each villager is charged a small monthly fee to pay you salary and then you provide your services free.

b) the villagers pay you for medicines provided by the government and you make a small profit.

c) you charge a fee for medicines you provide and the government pays you each time you provide preventive care.

d) the government pays you a salary.

e) some other scheme.

20. a) Would payment in kind (i.e. food, work) rather than in money be acceptable to you?

    b) Would this be workable?

    c) If so, how?

21. a) Do you presently have medicines?

    b) Were they provided free?

    c) From where did they come?

FORM 7A

A. QUESTIONS OF VILLAGERS WHERE CHW IS WORKING

1. a) Do you know who the MLHWs at the BHU are?

   b) What are their names?

2. a) Do you know who the village's CHWs are?

   b) What are their names?

3. a) Has a CHW ever helped you?

   b) How?

   c) When was the last time?

   d) Did it help?

4. a) Have you ever been to a hakim? a dai?

   b) When was the last time?

5. a) Has the CHW ever talked to you about wells? about latrines?

   b) If yes, has anything been done about it?

6. Has the CHW talked to you about what to do if your child gets diarrhoea?

7. If villagers have to pay for CHW services, what would be best way?

8. a) Is it worthwhile for the village to have a CHW?

   b) Why?

FORM 7B

B. QUESTIONS OF VILLAGERS WHERE CHW IS NOT WORKING

1. What do you do if a member of your family gets sick?

2. a) Has one of the governments malaria eradication officers ever come to your village?

   b) Did the spraying benefit the community?

3. a) Do you ever go to a hakim/dai?

   b) When was the last time?

4. If the community had a health worker who had a few medicines and could tell the people about clean living habits, would this make the lives of the villagers better.

5. a) Would the villagers be willing to financially support this worker or should he provide his services free?

   b) Why?

6. Is there any health or social committee in your village?

RESULTS

Social Characteristics of Health Workers

The sample of health workers used in this report totals 30,of which 20 were Medical Technicians (MTs) and 10 were Community Health Workers(CHWs). Of the MT's 12 were from the Punjab and 8 were from Sind; of the CHWs 8 were from the Punjab and 2 were from Sind. All of these workers were currently working except for 1 MT who is expected to be attached soon to a BHU at Salehpat, Sind and 1 CHW, a male at Kandhri, Sind, who is not yet fully trained.

In terms of social characteristics these workers will be discussed in terms of certain variables such as age,sex, marital status, language, and occupation, with a view towards evaluating their suitability and effectiveness as workers in this system.

Medical Technicians

The average age of the 12 male MT's was 30 years. Most of them (8) were in their early to mid-twenties, three were in their thirties, and two were in their forties. The average age for the eight female MT's was lower - 25 years. All but two were in their early twenties, one 35, and the last 40.

With regard to marital status, 10 of the male MT's were married and two were single. With the females the reverse is true; only two are married and six are unmarried.

Regarding the issue of the work place being the same or close to one's native place, most of the male MT's had their jobs in their native districts, only two did not. Again, in the case of the female MT's, the reverse was true : six did not work in their native districts; only two did.

In terms of the social characteristics of age, marital status, and the issue of work place versus home place, the males in their role as workers conform much more closely to Pakistan's cultural norms, which expect men in this type of work place to be older, married, and working near their homes. This finding suggests that with regard to these issues, they experience little difficulty in relating to the community in carrying out their duties. There may be some question regarding age : most of them are in their early twenties, which is somewhat young, but of the eight only one is single. This means that most of them can see women and children and in fact do, according to the questionnaire results (only one of the male MT's says that he treated only men).

Whereas male workers do see and treat female patients, the number of female patients is undoubtedly much lower than it will be once the female workers are all firmly established in place. This is the goal towards which efforts must continue to be directed.

In terms of these social characteristics, the picture of the female MT's is one of far less conformity with the country's cultural norm for women. That norm usually sees women married

by their early twenties and living at home or if still working, living with or near her family. This is not the case with most of the female MT's : of the eight interviewed, six of them were in their early twenties. Those six were unmarried and four of the six were posted at an IRHC or BHU in a district other than their native one. In fact, of the total of eight, only two were working in their native districts. One of the married workers who was not working in her home district had to live away from her husband and most of her children; she said this was one of the aspects of her job that was difficult for her. It can be safely assumed that the other single female workers who are living away from home likewise feel strong cultural pressures which may adversely affect the performance of their jobs. For example, one of the MI's who lived alone said that she often felt afraid at the Center, especially at night.

In order to have female MI's who are working in harmony with their cultural norms, efforts must continue to be made to recruit women who are older, married and to post them after they are trained to complexes or clinics near to their native places. These efforts will likely prove successful as training continues and the pool of trained MI's from which to select female workers increases.

Community Health Workers

In looking at the Community Health Workers in terms of these variables, one finds general conformity with cultural norms in

the case of both male and female workers. The average age of the six males was 35, of the three females 32. Half of the males were in their twenties and all but one were married* and all of them are living in their home place. Thus, as there is general conformity with cultural norms in terms of these variables, it can be assumed that the CHW's are not encountering many cultural obstacles in the carrying out of their duties, and it is suggested that the pattern of recruitment that has been established be continued.

In terms of language, all of the MT's except one speak well the local language where they work. That one speaks the local language slightly, which allows for at least some communication. In the case of the CHWs, both male and female, all of them speak the local language well. Thus the workers at all three tiers find little or no difficulty in communicating verbally with the communities which they serve.

Of the CHW's, two can read Urdu only and two cannot read Urdu at all. This lack of literacy, aside from being an obstacle in the training of workers, poses a problem for the CHW in communicating with the villagers where written instructions are involved (.e. following prescriptions). Though these occasions would be limited, literacy must be considered as a factor of job functioning

Occupations of CHWs

Most of the male CHWs work in the agricultural field - one is a zamindar and two are farmer-tenants Of the others, one is a

*One is a widower.

Navy pensioner, one is a labourer and the last is a peshimam in the mosque and a teacher. Of the three females, one is a housewife, one is a dai and one is a peon in a girl's school, who has also worked as a dai. Except for the land owner, whose family would be part of the elite of the community, all the workers come from either the middle or lower classes of the village and thus are in a good position to serve all of the social levels in the village.

Selection of CHWs

According to the CHWs themselves, the health committee, the village and the MT's all played a role in their selection as CHW's (both male and female) in all but two cases. In one case only the health committee played a part and in the other case, no health committee had been formed as yet and only the MT's and the village took part. While in most cases, all three entities played a role in CHW's selection, in no case did they all play an equal part. The CHW's reported that most often (4 times) the health committee played the largest role followed by the village (3 times) as the largest role player. The MT's played the largest part twice and once in the absence of the health committee, the MT's and the village he . equal part.

In most cases (3) the health committee initiated the selection process by putting the name of the CHW forward. In two cases, the MT alone selected the CHW; in two cases the village elders put the CHW's name forward, in one case the MT's and women of the village nominated the CHW; and in a final case the CHW was selected because she was a dai.

The most commonly mentioned criterion (five times) by the CHW's of their selection was that the candidate had a good reputation of fair dealing with all and good character. The second most common criterion (4 times) was prior service to the community, such as in the case of the peshimam and the dai. Other reasons cited above were (once) that the candidate would be able to serve the people well and (once) that the candidate would be the only one who would do the work.

Therefore, in a majority of the CHW's randomly selected for interview, we find meaningful participation and even control by the community in choosing the candidate for training. This is consistent with the initial goals of the program. The finding is reinforced by the sociological analysis of the CHW's themselves, which indicates that the CHW's are generally representative of and accepted by their fellow villagers.

Results - Knowledge and Skills

Medical Technicians

Based on a review of the curriculum provided to the MT's, as well as a review of the training which the MT's are supposed to give to the CHW's, levels of expected performance on a knowledge and skills test were established by the primary health care specialist on the evaluation team. Since most of the more complex materials which had been included in the MT curriculum were not part of this test, and since it was heavily oriented toward common conditions and basic primary care, performance could be expected to be quite high if the MT's were indeed well prepared for their work.

Based on an analysis of test questions, curriculum content, and levels of acceptable performance as established by the primary health care specialist, a score of 85% or above was considered good 70-85% intermediate, and below 70% poor.

The mean score for the 20 MT's who were given this test was 74%. On the whole, the performance was intermediate.

Various breakdowns of performance follows:

Percent of MT's by Category (N-20)

Good	- 30%
Intermediate	- 35%
Poor	- 35%

Overall Performance by Section

		Mean Score
Section 1	- Prevention	81%
Section 2	- Diarrhea	84%
Section 3	- Nutrition	63%
Section 4	- Family Planning	66%
Section 5	- Pregnancy & childbirth	79%
Section 6	- Curative Medicine	70%

It can be seen that nutrition and family planning were the weakest areas. The relatively low performance on the curative medicine section was surprising, given the heavy curative orientation of the MT curriculum.

Correct responses to certain key issues were also analyzed. Some of these are listed below:

Issue	Question number(s)	% Correct responses (N = 20)
Immunizable diseases	3	85%
Oral rehydration	10	40%
Three basic food types, examples	13 & 14	55%
Use of armband	16	80%
Kwashiorkor	48	55%
Child spacing	24 &25	70%
Birth Control Methods	28	100%
BCP - Use	30	15%
Preeclampsia (female MT's only)	32 N = 8	75%
Tetanus	35, 36 & 37	70%
Malaria slide	41	50%
TB slide	46	15%
Pneumonia	49 & 50	70%

A disturbing pattern appears to emerge in these questions - the performance was often poor on the practical side. Only 40% were able to correctly describe the preparation of oral rehydration solution; only 50% knew how to prepare a malaria slide, and only 15% could prepare a TB slide; similarly, only 15% knew how to deal with the common problem of forgetting to take BCP's for three days. On the other hand, it should be noted that fully 80% knew how to use the armband, more than the percentage who could identify the three basic food types or diagnose Kwashiorkor.

In looking at total test scores, a range from 52% to 91% was found. In order to try to determine what factors might be influencing this range of scores, a number of variables were considered.

	Average Scores by Sex	
	Men(N=12)	Women(N=8)
Overall Total	75 %	73 %
Section 1:Prevention	80	81
Section 2:Diarrhea	88	78
Section 3:Nutrition	63	62
Section 4:Family Planning	67	64
Section 5:Pregnancy and Childbirth	72	89
Section 6:Curative medicine	75	62

Given the overall averages, it does not appear that sex was a major determinant of performance. The major areas of difference were in pregnancy and childbirth, where the women performed appreciably better, as would be expected (despite the fact that the men were asked fewer

questions in this area); and in curative medicine, where the men performed appreciably better. Neither of these differences is particularly bothersome. However, the difference in performance on the questions relating to diarrhea, where the men scored better, is of some concern since it is likely to be women who will have the greatest potential for helping mothers to deal with these problems in their children.

The second variable considered was training and work area -- at this early stage all MT's seen were still working in the same district as where they were trained, so the two do not need to be considered as separate variables. Unfortunately, this does not allow us to differentiate between initial and in-service training as determinants of performance.

Overall scores by district and province

Lalamusa	77%	
D.G. Khan	83%	
Punjab		80%
Sukkur	61%	
Pithoro	71%	
Sind		66%

This shows a substantial difference in performance both within and between provinces. It appears that local conditions, which probably relate to a variety of factors such as quality of teaching, type of practicum

experience, and overall level of supervision are major factors and probably the most important factors, in influencing the level of knowledge and skills of the MT's

An attempt was also made to analyze test performance according to the variable of length of training (some MT's received 18 months of training and others received 12 months). Initial analysis showed the following:

Overall Score by Length of Training

12 months (N=7)	78%
18 months (N=12)	71%
15 months (N=1)	87%

However, more careful consideration of these figures throws into doubt any conclusions that might be drawn. For one thing, the 12-month training course was only given in the Punjab, so the difference in performance already evidenced between the provinces would tend to depress the scores for the 18-month students. Looking only at students from Punjab, the following is seen:

Score by Length of Training - Punjab

12 months (N 7)	78%
18 months (N=4)	82%

It seems, therefore, that we cannot conclude that one period of training is superior to another for the particular group of trainees involved.

Similarly, an effort was made to correlate test performance with previous health experience.

Score by previous experience

Previous health experience	(N=12)	77%
No previous experience	(N=8)	70%

Again, if we consider only by province, the apparent advantage is not consistent.

Score by experience

Punjab

Previous experience	(N=9)	79%
No experience	(N=3)	82%

Sind

Previous experience	(N=3)	71%
No experience	(N=5)	63%

Therefore, it does not appear that we can conclude that experience in itself is a positive factor in test performance.

Another analysis related to test scores according to number of years of formal education:

Scores by years of education

10 years (N = 11)	72%
More than 10 years (N=9)	77%

Given the sample size, this difference is too small to be significant. This supports the basic premise of the program that it is appropriate to select MT candidates from individuals with ten years of schooling and not to insist on higher levels of education.

From the results of this questionnaire and from these preliminary analyses, it does not appear that varying criteria which might be used in selecting candidates for MT training would result in a significantly different quality of graduate. It seems that the local factors relating to training facilities, faculty ongoing training and program management are likely to be more important in determining performance. The improvement of this area is therefore likely to have the greatest impact on MT performance.

Results - Knowledge and Skills

Community Health Workers

As with the Knowledge and Skills test for MT's, levels of acceptable performance were established. A score of 80% or above was considered good, 60-80% intermediate, and below 60% poor.

The mean score of the nine CHW's who were given this test was 61%.

Percent of CHW's by Category (N 9)

Good	- 22%
Intermediate	-22%
Poor	- 56%

With more than half the CHW's performing poorly on this test, a section by section analysis was done.

Overall Performance by Section

Section 1	-	Prevention	74%
Section 2	-	Diseases & treatments	66%
Section 3	-	Diarrhea	75%
Section 4	-	Nutrition	40%
Section 5	-	Pregnancy & child-birth	44%
Section 6	-	Family Planning	61%

As with the MT's, we see that nutrition was the weakest area and diarrhea the strongest. In this respect, strengths and weaknesses do appear to be transmitted from the MT's to the CHW's.

To confirm this, rank order by scores of the various sections were compared for MT's and CHW's.

Rank Order by Section Scores

	MT's	With P&C excluded	CHW's	With P&C excluded
Prevention	2	2	2	2
Diarrhea	1	1	1	1
Nutrition	6	5	6	5
Family Planning	5	4	4	4
Pregnancy and Childbirth (P&C)	3	*	5	*
Curative Medicine	4	3	3	3

With the notable exception of pregnancy and childbirth, the rank order of scores are identical for the MT's and the CHW's. Not surprisingly, one may draw the conclusion that strengthening an element of the MT curriculum will be likely to have the effect of strengthening the performance of CHW's in that same subject area.

Scores were next compared among the CHW's according to sex.

Average Score by Sex

	Men (N=6)	Women (N=3)
Overall Total	64%	56%
Section 1 : Prevention	78%	67%
Section 2 : Diseases and Treatment	73%	52%
Section 3 : Diarrhea	88%	50%
Section 4 : Nutrition	44%	33%
Section 5 : Pregnancy and Childbirth	37%	59%
Section 6 : Family Planning	57%	69%

This gives the impression that men become better (or at least more knowledgeable) CHW's than women. Looking at section by section scores, it is gratifying to see that women's test performance was better both on Pregnancy and Childbirth and on Family Planning, since these are issues in which women CHW's are likely to have a predominant role. Nonetheless, performance could not be considered adequate on an absolute scale even for these topics. On the other hand, the disappointing relative performance compared to men on the diarrhea section mirrors the relatively weaker performance of women MT's on the same section of their test.

In order to confirm whether the overall poorer performance of women on the test is purely a factor of sex, another analysis was made:

Average Score by Literacy

Reads Urdu Well (N=5)	70%
Reads Urdu Slightly (N=2)	59%
Illiterate (N=2)	43%

It is then noted that two of the three women tested were totally illiterate, while the third, who reads Urdu well, scored 82% overall. This would appear to remove sex as a determining factor. However, since village women in Pakistan have a higher illiteracy rate than village men, this problem is likely to be generally found as the program expands, and means of teaching and supervising illiterates must be developed which are culturally acceptable.

Scores were also compared by age:

Scores by Age

30 or younger (N=5)	65%
Above 30 (N=4)	57%

However, the literacy question again confounds these results, since both illiterates were in the over 30 group. With them removed, the over 30 score is 62%, but with a partial sample size of only 2, it is difficult to draw any conclusions from this. At this stage of program development, we cannot say whether age has any significant impact on performance.

Similarly, the impact of previous experience in the area of health was assessed:

Scores by Previous Experience

Previous work as health care provider (N=3)	51%
No previous experience (N=6)	67%

However, once again the results are suspect since two of the three previous health care providers were the illiterate dais. At best we can say that lack of previous experience does not appear to negatively affect performance on the test.

Finally, performance on various key questions of the test were analyzed for the CHW's as a group. Some of these results are listed below:

Issue	Question number(s)	% Correct Responses (N=9)
Immunizable diseases	5	78%
How diseases are spread	6	78%
Diagnosis of malaria and TB	7, 11	78%
Oral rehydration	13	67%
Prevention of malnutrition	18	56%
Tetanus	25, 26	22%
Child spacing	31, 32	22%
Family Planning methods	34	89%

Of special interest in this group of responses was the very poor performance on questions relating to tetanus, and the far higher performance on questions about the means of contraception than on questions about the reasons for contraception. This latter finding is of some significance in any plans which might be developed to utilize

CHW's in family planning efforts.

Overall, the major conclusions that can be drawn from the performance of CHW's on this questionnaire are that they are not generally well trained at this point in program development, and that the issue of literacy is key and must be dealt with by an effective strategy if the program is to hope for success. This is not to say that only literate villagers should be selected as CHW's; the constraints of low overall rates of literacy in women and the poor, who are primary targets of this program, as well as various social considerations would make this an unwise policy decision. Rather, it means that improved ways of training illiterates must be developed, possibly in conjunction with a program of functional literacy.

Worker's Acceptance by and Impact on the Community

Before presenting and evaluating the data that was gathered on this issue, a word should be mentioned about the methodology used, with particular reference to getting responses from the communities. An attempt was made to interview at least four villagers at each village site, each located in a different quadrant of the village, and this was successful in five out of the six cases (in the sixth, only three were interviewed). Six villagers where CHWs were trained and working were visited and three where they were not yet working.

Time was very limited during the village visits, which not only minimized the number of questions that could be asked but also precluded formalities with the villagers. This latter point no doubt reinforced the villagers' impression of us as strangers and may have led to prejudiced responses, a possibility that will be taken into account in the subjective evaluation of their responses.

Nature of Patients

One variable that can be used to gauge the acceptance of both the midlevel and the community health workers by the community is the number of patients that are seen by the workers on an average day.

At the Integrated Rural Health Complexes (IRHC) the range of patients most frequently cited (5 times) was 20-40 seen a day. This was followed by the range of up to 20 a day (cited twice) and the range of 40-60 cited once. It is interesting to note that the Basic Health Units (BHUs) see a higher of ranges of patients than do the IRHCs : over 60 a day (cited 3 times), 40-60 (cited once), 20-40 (cited 5 times) and under 20 (once). While the BHUs apparently see a higher range, the patients that come to the IRHCs come from farther afield : at two complexes they come from upto 20 miles away, at four from 5-10 miles away and at two from upto 5 miles away. At seven BHUs the patients come from under 5 miles away, at three from 5-10 miles and at none from over 10 miles away.

Another means used to measure the worker's acceptance by the community was to ask the villagers whether they knew about the workers at the IRHC or the BHU. All but one of the 24 villagers said that they knew the workers; 10 of them knew their names as well. Not all of the respondents had visited the IRHC or BHU, but of the ones that had, most had gone for medicines for such common ailments as fever and boils.

Thus, it appears clear from both the use of the health centers by the population and the expressed preference for health system

workers - verified on both counts by the workers and the village - that there is a considerable measure of community acceptance of the health system. This conclusion is reached even after discounting for self-serving and prejudicial replies of which there were doubtless some.

Access to Centers

A factor affecting peoples' use of either the IRHC or the BHU is ease of access. The absence of roads and a transportation network in the rural areas is reflected in how patients come to the health centers : in both cases the vast majority walk (IRHC - eight responses; BHU - 10 responses). The next most common means of transportation to the health centers is by bullock cart and tonga (IRHC - 6 responses; BHU 4); only a few come by bus (IRHC - 2; BHU - 1) and train (IRHC - 1; BHU - 0).

As the catchment areas of the IRHC and BHUs are 50-100,000 and 5 - 10,000, respectively, one would expect to see the two centers receiving more patients, especially at the IRHCs. While it is unclear why the range of patients seen daily at the IRHC is not higher, three reasons why there are not more people using the health system are : (a) its relatively recent beginning (this was mentioned by a few of the workers); (b) not all of the staff is in place in each center; and, (c) the population's difficulty in gaining access to the centers.

Composition of Patient Population

Another variable in assessing the impact the workers are having on the surrounding communities is the composition of the patient population in terms of age and sex. According to the MT's, most of the patients at both IRHC's and BHU's are women and children (IRHC's - 4 responses; and BHUs - 7 responses). Four of the seven workers at the BHUs specified that the majority of the children they see are in the 0-5 age bracket. Other groups seen are men and children (IRHC - 1; BHU - 1), men and women (IRHC 1; BHU - 0) and men, women and children (IRHC - 1, BHU - 2) and of the children one BHU worker stated that most of them were in the 0 - 5 age category. Thus, while the number of patients at the centers may be on the

low side, it is heartening that at least the population being served the most appears to be made up of women and children, including children in the 0-5 age bracket, which is the target popoulation that USAID has established for its health programs. This finding should be confirmed by a register check, which was not done during this evaluation.

Community Preference for Worker Type

A third variable that can be used to assess the impact of the health system on the community is the preference the community has for which type of worker - the health system worker or the traditional health provider. In response to the question of whose services the villagers preferred, theirs or those of a traditional health worker, a clear majority of the health workers responded perhaps expectedly that the villagers preferred their own services Of the MI's, 14 of 20 responded this way, three said the villagers did not have a preference for either but went to both and three said the villagers preferred traditional health providers.

Common reasons given why there was a preference for the health system workers included : (a)the villagers know we are qualified and provide good medicine (eight responses), (b) the medicines we supply are free (4), and, (c) we give them health education and sanitation to halt the spread of disease (4). The implication sometimes stated, sometimes not, was that the traditional health workers do not provide these services. Other reasons cited in the health system workers' favor were that their medicine worked quicker (2),that patients are attended to when they come(1),that the CHW

is available at all times and can refer (1) and that "as a trained woman health worker, women can have confidence in me"(1). The reasons the MT's gave why villagers went to traditional health provides included : (a)ignorance, tradition, habit and superstition (5), and the close contact these workers have with the villagers (2). One worker also said that at first their was a higher demand for his services but with a declining supply of medicines and a prohibition on injections, patients were now returning to traditional providers.

Naturally, findings of practitioner preference as cited by the health workers must taken with a healthy grain of salt, but the responses to these questions at least prove that there is not major villager resistance to the program as perceived by the health workers.

Community Acceptance of CHW's

In attempting to gauge the CHWs acceptance in the community, several questions were asked of both CHWs and community members. The questions asked of CHWs were: a) how many patients they saw a week?; b) were they all from his/her village?; c) where were the patients seen?; and, d) at what times of day?

Most of the CHWs saw 10-20 patients a week (4 responses), two saw over 30 patients and two saw less than 10. In five cases the patients were just from his/her village but in three cases patients came from other villages as well. In terms of where patients were seen the most frequent arrangement was at both the CHWs homes and the patient's home (4 responses), in three cases just at the CHW's home and in two just at the patient's home. As to when the CHW was available to provide service, most were available anytime (6 responses), two just in the afternoon or evening and in only one case were set hours established.

The questions asked of the community members were: a) whether they know of the CHW; and, b) whether they had been helped by him/her. Out of a total of 24 responses, a high number - 21 - at least knew of the CHW and of those 21, 18 knew their names. 14 responded that they had been to see the CHW about some health matter and had been helped. Concerning when the villager had last been to see a CHW the responses all reflected fairly recent

consultation: the day before yesterday (two), 2-3 days ago (1), four days ago (2), 5-6 days ago (1), one week ago (6), 15 days ago (1) and two months ago (1).

Thus these responses indicate that according to both the CHWs and the community members, there has been a considerable measure of community acceptance of the worker. Even if one discounts some of the responses as self serving or prejudiced, one is left on balance with a positive picture of CHW acceptance by the community.

Another issue raised to measure community acceptance was to ask of both CHWs and community members the preference for or use by the community of either the CHWs or a traditional health provider. When the CHW was asked, most (five) responded that their own services were preferred, two said that neither were preferred (or both were used, one said the traditional worker was preferred and one said she did not know. According to the CHW, reasons why the CHW was preferred included medicines were free(2), medicines were quick (2), the CHW is always available (1), an absence of hakims (1) and as a former dai, villagers have confidence in her (1). The reason given for preference of the traditional worker was because of habit and tradition.

When the villagers were asked if they had ever gone to a traditional health provider (i.e. hakim/dai), two thirds of them (34) responded that they either did not go to a hakim or had stopped going since the CHW had started working. Only four responded

that they had been to see a hakim and only one had had a recent consultation.

Thus, according to both the CHWs and the villagers, there is a clear preference for the work of the CHWs, which is farther evidence that they have been accepted by the community. Again, allowing for self serving and/or prejudicial answers, it is felt on balance that the CHW is favored indicating an added measure of community acceptance.

As a final indicator of community acceptance, the villagers were asked if it was worthwhile for the village to have a CHW and why. Of the 18 villagers who responded to the question, 16 replied that they felt it was worthwhile to have a CHW in their village. The most common reason given was the close proximity of the worker and his early accessibility at most times of the day (9 responses). A few of these respondents also said that the proximity of the CHW meant a saving in time and money because they did not have to travel to another health source. This point is related to another response given by two villagers that the CHW was helpful particularly to the poor of the village. Other responses included the reason that people were being taught things to better their lives (6) and that the CHW was part of a referral network that could help ensure that the villagers got better health care (1). Thus, though it is

likely that some of the responses were prejudicial, there does appear to be a clear perception on the part of the community that the CHW is not just acceptable but that he/she is seen as a positive and beneficial element in the life of the community.

Finally, with regard to the issue of acceptance, reference is made to the implications raised by the varying village social structures in the provinces. In the Punjab, for instance, where caste differentiation is somewhat muted and there is some degree of homogeneity in village communities, it is possible for a CHW to serve the health needs of all of those in the village. But in Sind where there may be several different and separate communities (i.e. Shiddis, Mekrani Baluch, Kolis (Hindus), and Sunnis) all living in one village, it is unlikely that one CHW would be able to serve the health needs of all the villagers. Thus it would be best for each community to have its own CHW. Therefore, it is suggested that variations in village social organization, different from province to province, be taken note of in the next project and that the target number and social composition of CHW's per village be based in part on that factor.

Worker Performance and Morale

Medical Technicians Performance

In order to determine how the M.Ts view the tasks they perform, they were given a list of five functions and asked to rank them in order of importance (see form 5). The intent of this question was to assess their understanding of the relative importance of curative medicine and preventive health. 11 of the 28 said that preventive work held the highest priority, and eight of those said that curative medicine was their next highest priority. Five stated that curative medicine should come first in importance but of these, three stated that preventive health was the next highest prority. Therefore, it appears that most of the workers understand at least in theory that the greatest emphasis needs to be given to preventive health though they also place a high premium on curative care. From evidence presented and discussed elsewhere, it is apparent, however, that most of the services the workers are carrying out are on the curative side, although they have given some emphasis to preventive care.

To determine the performance of the female M.Ts. in one area they were asked how many deliveries they had attend to in the past month and over the past three months. Most (3) had attended to five or less in the last month, 2 had attend to 5-10 deliveries, 2 had attended to none and one had attended to over 10. The statistics for the past 3 months were in four cases 10 or less had been attended to, in two over 20, in one between 10-20 and in the case of 1 no deliveries were attended to. In terms of referrals in these pregnancy cases, in only two cases had there been referrals over the past three months.

and both of these were of five or less cases. Of all these cases there had been only one death (a child).

These figures indicate that the female M.Is are carrying out maternal care though one would expect that the numbers would be significantly higher than they are. Reasons the female M.Is gave us as to why they do not attend to more deliveries were the difficulty with transportation and the preference villagers have for dais.

CHWs - Performance

When the CHWs were asked to rank their role in order of importance, all but one indicated by their response that they gave greater emphasis to preventive care over curative. The one exception said that he gave equal emphases to both. To determine what the CHWs have been doing about preventive health, they were asked what talks they had given and when the last talk given was. Most (seven) said that they had given talks in sanitation, four had spoken on personal hygiene, three on water supply, two on nutrition and one each on children's diseases, latrines and immunization. When asked when the last talk given was most (four) responded last week, three responded a few days ago and two said two weeks ago.

Out of the six villages surveyed, at least one villager in five of the villages had heard at least one of the talks; in the sixth no talks had been given. When the villagers were asked what had been done in terms of public health measures, the response was disappointing. In one village some people had adopted the flush system but the feeling was that this was due more to influences other than the CHW's though the CHW had probably provided reinforcement. In another, the village well had been

treated with tablets but again it was felt that this due more to other influences, probably the area sanitary inspector. In a third village, people who are building new houses are putting latrines in them and it was felt that the CHW had had some influence here. But in this village the villagers confessed that there was apathy towards public health measures and that no one wanted to bear the expense. They also mentioned that a high water table in the area meant difficulties in building latrines. In the fourth village, the villagers said that latrines were being built though they had also been built before. The CHWs were felt to have had some influence in this regard. In this village, wells had also been dug but bitter water had been found which had discouraged the villagers from digging further. In two villages, the villagers said no public health measures had been taken.

The CHWs were also asked how often the village health committee met and whether it assisted the CHW in his/her work. Three responded that the committee met once every week, four that it met once every two weeks and one that it met once a month. Ways in which the committee helped included motivating the villagers to undertake sanitation measure (six times) and assisting in referrals to the BHU (once). Thus, while health committees appears to be interested in health work, they have so far provided limited assistance in the adoption of public health measures in the village communities, a finding that is consistent with results cited elsewhere.

Thus it appears that while the CHWs understand what they have to do in terms of public health, they are having difficulty in implementing any substantive measures. As a result, the villagers look upon them primarily as providers of curative care. Efforts in the next protect must focus on

on ways whereby the CHWs may actually implement what they know about preventive health.

Workers' perception of their acceptance by community

When the M.Is. were asked if they felt accepted by the communities they were serving, they all replied in the affirmative. When asked to give concrete examples of such acceptance, their responses were not in each case precise but included the following: people come to the centers for treatment (2), people come for maternal child health problems (1), there has been a steady increase of patient at the centers(1)people listen to their lectures on preventive measures (2), people cooperate with them in trying to take preventive measures (3), people have shown appreciation for the location of a SHU in a remote area (1), people petitioned the pir (saint) of the village to have one stay when they heard he was leaving (1) and people say prayers for he and are pleased that she has medicines (8). In one community where a CHW had recently been selected, the M.I. said the community had shown acceptance by responding to the call for a health meeting to discuss the CHW program.

When the workers were asked whether they were having any impact in their communities, again they all gave positive responses. When asked to give specific examples, their responses - some of them vague - included the following : we are providing medicines to people(2), people are building nailahs (drains) and latrines (1), people are boiling river water now, parents' fears about child immunization have been dispelled (1), we are serving people who come to us (2),

and people are beginning to understand our lectures on preventive health (1).

From these responses, it is clear that the workers perceive that they have largely been accepted by the communities they serve and that they are having an impact on the health of those communities. While the responses suggest that the health services being provided are both curative and preventive, it is clear from the communities' perception (see below) that they see health workers primarily as providers of curative medicines, though they do have some sense of preventive health. Thus, in the next project efforts need to be focused on means of enhancing the villagers understanding of preventive health and devising mechanisms to implement such health measures.

Worker Morale

Medical Technicians

Apparently, the morale among the M.Ts. is uniformly high. They all claimed that health work was their first choice of profession and all but one reported that they were happy with the conditions of employment. All but three of the M.Ts. live at either a IRHC or a BHU where they are provided quarters, so for most their housing needs are met. For those who live elsewhere, transport is a difficulty for two workers in getting to and from their place of work. Most of the workers live with one or another family member or some combination thereof - three live with their parents, and eight live with their spouses and children. But seven of them live alone, which is significant not only because it is a high number for a sample this size but also for its social implications. Given the strong emphasis on the family and group identity in Pakistani society, workers who live alone can be expected to perform less well and be less happy in their jobs - factors which were borne out in the responses of some of the women workers, in particular. The problem of living alone (mentioned once) working alone (four times) and/or travelling alone and unescorted (twice) were invariably the responses given when the female M.Ts. were asked if they had any special problems as workers who were also females. In future, wherever possible, living arrangements should be made that permit workers to live with their families.

When the workers were asked what improvements they would like to see in their jobs, about half - 10 -said they would like a higher salary. As workers who receive the government's Grade 8 pay scale, they receive Rs. 492 a month and are additionally provided with housing. The Punjab Government has recently decided provide M.Ts. with Rs. 100 a month as a travelling allowance. The other provincial governments should consider taking a similar step. One worker stated that unless their salaries are increased, the M.Ts will resort to taking bribes to increase their income. Another suggested that the M.Ts. be given rural allowances which should amount to 50% of their basic pay. Whatever the best arrangement would be, it is felt that owing to the extent of worker dissatisfaction with the pay issue, it warrants further consideration under the next project.

Other improvements the workers mentioned included the need for a conveyance (seven) (this is discussed at greater length below), more training courses (two), more facilities at the BHU (two) and that M.Ts. should not be posted to IRHCs as the doctors can handle the load.

The greatest difficulty the workers appear to have is with transport, not in getting to and from work but in the performance of their jobs, especially supervising CHWs. 15 claimed to have problems with transport; only one said no and surprizingly it was a woman (she claimed to go by foot or managed to get rides). As a solution, most(14) suggested they be provided with some form of conveynance: a vehicle(five), a motorcycle (seven) (some even agreed to have its cost taken out of their salaries on a monthly basis) and a jeep (two). Other suggestions included a travelling allowance (three), hiring a tonga for the female

M.T's (once) and making roads.

The problem of transport will yield no easy solution and in any case one prescription will not apply to all situations - local conditions will determine the appropriate remedy in each case. In a place where there are no roads, for instance, a solution may have to wait until there are roads. Also, this problem affects female workers differently from males since females require an escort as well as a measure of privacy when travelling in rural areas. Thus, a motorcycle may be appropriate for a male but it would not be for a female unless her escort was also her driver. A tonga may be the best solution for females in certain areas, as she could then travel with an escort as well as with some privacy. If a female is to have an escort, the issue arises of of another salary or at least renumeration of some sort. In any case, the issue of transport is one that the next project will need to address.

CHWs Morale

As in the case of the M.Ts., the CHWs appear to have high morale. All of those interviewed said that they were happy doing health work. Reasons they gave included because they were helping their "brothers in the community and also the nation " (five responses), they had learned new skills (one), and they were fulfilling their moral duty (one). All of them that were asked said that they felt their estimation and that of their family's had been enhanced since they began work as a CHW.

When asked if they were happy with the conditions of their job as a CHW, they likewise all replied in the affirmative. All of them are living

and working in their own villages and as with the M.Ts. most are living either with parents (two) or a spouse and family (six) but again a relatively high number (four) are living alone.

When the CHWs were asked what improvements could be made in their jobs, most said that they needed more medicines (five), two said that they needed more training and two said they should be given either a stipend or a salary from the Government. Other improvements cited included the need for literacy (1), the training to give injections (1), and more CHWs in the village to share the work load (1). Female CHWs when asked what special problems they had as female workers said that they had difficulty giving public talks in the village on such matters as sanitation (two) and one said that literacy had limited her ability to get training.

Noteworthy findings here include the demand for more medicines which reinforces the finding elsewhere that the CHWs at this stage are primarily curative health workers. The reference twice to literacy indicates that the CHWs regard this as an important qualification in their work and perhaps, in the next project, greater attention should be given to selecting CHWs who are literate or providing training which is appropriate for illiterates. The issue of salary for the CHW will be discussed in the next and final section.

Volunteerism Versus Compensation

When asked if the CHW's were providing their services free, all except the dais said that they were. Most of them (six) said they also thought that a free service could last indefinitely. However, when asked if they preferred a free service or a fee for services arrangement, the count was much more even - six for free services, and four for fee for services. When asked what their reasons where, those for free services said that it would be morally reprehensible for them to charge their "brethren" for medicine and other services that were freely provided to them (the CHWs). Another common reason cited was that the villagers were too poor to pay for services. Reasons given in favor of the fee for services approach included the need to supplement their income (i.e. some did not earn enough from farming), in the case of the dais, - the need to support themselves-and finally, that a fee for services arrangement would attract others to the job. Thus, while some of the CHWs interviewed would consider an arrangement where the community would bear the cost for health services, most of them (six) felt uncomfortable with the idea of charging the community and opted for the idea that government pay them a salary or grant a stripend.

This latter sentiment was also reflected in the communities surveyed but in only two of the six villages. A common view expressed by the villagers was that the villagers were too poor to pay and thus

if the government could not support the CHWs then they should work on a volunteer basis.* Those who expressed this view buttressed it with references to CHW work as "doing one's moral duty" and "doing social welfare work" - activities which are considered in the local culture to be non-renunerative. Though most villagers interviewed favored the volunteer system, there were four who said the village, if need be, could support the CHW if not fully, at least in part. One suggested a cooperative arrangement between the government and the village where each would bear some part of the CHW's support. Three suggested the village support in the form of payment in kind, an arrangement which is already followed for dais.

It can be argued that the community's attitude toward the issue of volunteerism versus compensation reflects the value the community places on the health services provided under this project. At this stage, it has to be concluded that communities do not yet place much value on the scheme as most want the CHW to be either paid by the government or work as a volunteer. One can take as an encouraging sign, however, the few villagers who said that the community could find the means to support the CHW. And though it is also heartening that the volunteer concept is working and has been for about a year in the Punjab, it can not be realistically expected

*As it is not known how much villagers pay for health services, how much they are able to pay for such services etc., it is suggested that a study be made of several villages to determine the socioeconomic factors of village health. This study would properly look at villages with differing levels of prosperity in the various provinces in order to provide a comprehensive view on this issue .

that such an arrangement will last for ever. Thus, under the next project volunteerism should continue but at the same time efforts should focus on enhancing the premium communities place on health so that eventually they will become active supporters of the health workers in their midst.