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IMPLEMENTING A NATIONAL RURAL HEALTH SYSTEM:
MANAGEMENT EXPERIENCES FROM AFGHANISTAN

VOLUME II
APPENDICES

DRAFT

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TABLE OF CONTENTS

	<u>Page</u>
<u>APPENDIX I</u>	1 - 47
Basic Health Services in Developing Countries: A Model and Critique Based on 6 Years' Experience in Afghanistan	
<u>APPENDIX II</u>	48 - 85
Training Methods of the National Traditional Midwife (Dai) Program of Afghanistan	
<u>APPENDIX III</u>	86 - 149
Excerpts from "A Health Survey Of Three Provinces in Afghanistan: A Tool for the Planning of Health Services"	

11

APPENDIX I

BASIC HEALTH SERVICES IN DEVELOPING COUNTRIES:

A MODEL AND A CRITIQUE BASED ON
6 YEARS' EXPERIENCE IN AFGHANISTAN

A. THE JOBS OF A BHS SYSTEM

A health system has two main jobs:

1. To provide relief from fear, pain, and suffering for people who are sick or injured.
2. To reduce mortality, morbidity, and disability in the population.

The first job is to provide relief from fear, pain, and suffering. When people are sick or injured, they seek help and the health system must, to the best of its ability, provide that help. These services are demanded by the people and medical relief is their number one health priority. The performance of the health system in providing relief to sick or injured people is the criterion on which the people judge the success of the health system. These services are to individuals and are generally curative medicinal services.

The second job of the health system is to reduce mortality, morbidity, and disability in the population. On an individual basis, curative medicine performs this job through proper diagnosis and treatment of sick or injured people. However, reductions in mortality, morbidity, and disability in developing countries are best achieved by studying, in the population, the epidemiology of disease and its direct and contributing causes. The disease causes are often easy for health professionals to understand but are beyond the knowledge of most other people. For this reason, people don't demand public health programs - professionals promote them. Thus, planned public health programs must convince the population (or force as seen in certain totalitarian regimes) to try new things. This change process in the population is not easy to achieve and requires a managed approach.

These two jobs, when implemented through a large government system, require extensive management and technical support. These support systems have their own objectives, but must always serve the two jobs of the health system: medical relief and reductions in mortality and morbidity through individual services and community-based public health programs.

Historically, health planners have tried to do these jobs in two main ways in rural areas. The first job of providing medical relief has been mostly tried through establishing a wide network of service delivery units in rural areas usually called Basic Health Centers (BHCs).*

To reduce mortality, morbidity, and disability in the population, both BHCs and specially managed public health programs have been used. The BHCs obviously try to reduce mortality, morbidity, and disability in individuals who visit the facility.** In addition, BHCs in many countries have been given responsibilities in implementing public health programs for the population living near the BHC. BHCs have a dismal record in carrying out these community-based public health activities. The specially-managed public health programs (often called vertical programs as they are managed by special units) have a much better record in influencing mortality and morbidity for the special conditions they attempt to ameliorate. Smallpox eradication is the most successful example.

* Staffed by doctors and paramedical (mid-level) workers. The BHCs are supported by small hospitals at the district or province level.

** By correct diagnosis and treatment for illness or injury. They also try to prevent mortality, morbidity, and disability for special target groups such as pregnant women, young children and tuberculosis patients who visit the facility.

Other specially managed programs have been less successful, but, compared to the basic health center approach, are much more successful in carrying out community-based public health programs.

Thus, the BHC traditionally has two components: services to individuals at the BHC itself and services to community groups as a public health service unit. In other words, the BHC, the most peripheral unit of the health system, is an integrated unit expected to provide individual services and public health programs. This is a most interesting phenomenon as health systems in developed countries usually separate these components while health planners in developing countries (often advised by developed country advisors) have tried to integrate these two activities at the BHC.

Recently, a new approach has received wide publicity in the international health literature and strong promotion (to the point of coercion) by the World Health Organization. This is the "primary health care" movement which has centered on using the villagers themselves to improve their own health (the now famous maxim "health by the people"). This approach has strong merit as most developing countries can't provide reasonable access to the basic health center for large numbers of their people; there is a large "social gap" between the traditional cultures of villagers and the more modern cultural values of professionals and paramedical workers; and villagers can participate in their own development. This approach has now received some limited application and experience indicates that the trained villager can provide some selected individual services in the village - both for medical relief and to prevent deaths from some common disease killers (especially diarrhea in young children). However, many health planners are advocating that the village health workers can perform public health functions as well if supported by BHCs. This is also most interesting as the basic health center can't provide a decent public health function on its own and yet it is expected to provide

additional support and guidance for villagers who are being given public health tasks that are not demanded by the people and are difficult to achieve.

B. A BASIC HEALTH SERVICES SYSTEM AND ITS FUNCTIONS

Any Basic Health Services system usually has four major components:

1. Service Delivery Units
2. Management/Administrative Units
3. Training Units
4. Technical Support Units

The rural service delivery units are those units that actually provide medical/public health services to the population. In Afghanistan, they are called Basic Health Centers. (Village-based services will be discussed later.) The management/administrative units have the job of planning, managing and evaluating the service delivery units. In Afghanistan, the main management/administrative unit for Basic Health Centers (BHCs) had been the Basic Health Services Department located in the Ministry of Public Health in Kabul. During the course of the project, other intermediate management/administrative units were attempted, namely the Regional Offices. Training units provide increased skills to personnel in the system. In Afghanistan, there have been training units within the BHS Department and in other parts of the MOPH. Technical support units are units supplying special services of a technical nature. The main technical units affecting BHSD operations have been the National Laboratory which trains and supervises laboratory workers who work in BHCs; the Malaria Institute which supplies malaria microscopists to BHCs; and the Avicenna Pharmaceutical Institute which produces drug supplies for BHCs as well as other parts of the MOPH.

The intent of the Basic Health Services project has always been to further develop the Basic Health Services system. Thus, the underdevelopment of the system at the beginning of the project is a basic assumption for all further activities. If the basic health services system in Afghanistan was underdeveloped at the beginning of the project (few would argue it was not), the question arises as to what a developed basic health services system should "look like". That is, what would be the services provided by a well-developed BHC? What then would be the management/administrative units to effectively support a well-developed BHC? What then would be the training support and technical support functions necessary to have a complete well-developed basic health services system?

The Well-Developed BHC - Its Services and Support Functions

The BHC should offer the following high quality services to individuals who visit the BHC:

1. Sickness care services: Diagnosis, treatment, and individual counseling of the sick patient for common medical, surgical gynecological, physical/orthopedic, and mental problems.
2. Maternal care services: Include all aspects of pregnancy care-antenatal care, labor and delivery, and post partum care. In addition, usually family planning and care during lactation are included in maternal care services. A woman who is sick but not pregnant would be included in the sickness care classification.
3. Child care services: Include all aspects of well child care - assessment of growth and development (nutritional services are included here), immunizations against childhood diseases, and vision and hearing testing for older children.

4. Food distribution services: Distribution of dried milk powder, oil, and wheat through the World Food Distribution program to high risk pregnant mothers and high risk young children,

The well-developed BHC should offer the following high quality public health programs to communities:

1. Communicable disease and high risk surveillance program: Surveillance of entire population at least three times a year for tuberculosis, trachoma, childhood malnutrition, high risk pregnancy, family planning motivation, births, and deaths.
2. Community immunization program: Immunization of at least 75% of entire susceptible community against smallpox, diphtheria, tetanus, whooping cough, tuberculosis, measles, polio.
3. Special care follow-up program: Frequent follow-up of selected families who have communicable diseases or high risk children or mothers (tuberculosis - about once a month; childhood malnutrition - moderate, about once a month; severe, weekly; active trachoma - every two weeks).
4. Family planning motivation program: Quarterly visits to all households.
5. School health program: Quarterly vision and hearing testing.
6. Safe water program: Safe water at the time of use for 80% of households based on filter system (safe source) and health education program (safe storage and use).
7. Safe latrine and safe waste disposal program: Water seal latrines or covered pit latrines maintained effectively in 80% of households; 80% of households dispose of wastes adequately.

8. Public facilities inspection programs: Quarterly inspection of all restaurants, hotels, and other public facilities likely to promote disease.

9. Health education programs: Twice yearly group sessions to all public organized groups; more frequently to target groups (mothers' clubs especially).

Figure 1 summarizes these functions and their locations.

FIGURE 1

SERVICE LOCATIONS OF WELL-DEVELOPED BHC'S

Program	Components	Location of Services	
		At BHC Itself	In Community
SICKNESS CARE	Medical	X	None
	Surgical/dressing	X	
	Physical/orthopedic	X	
	Gynecological	X	
	Mental	X	
MATERNAL CARE	Antenatal Care	X	Surveillance prog.
	Labor and Delivery	X	On request
	Post Partum	X	No
	Family Planning	X	FP Motivation prog.
	Care During Lactation	X	No
CHILD CARE	Growth and Development	X	Surveillance prog.
	Immunizations	X	Commty. Immun. prog.
	School Eye and Hearing Testing		School Health prog.
COMMUNI- CABLE DISEASE CONTROL	Malaria Smears	X	Surveillance prog.
	Tuberculosis Smears	X	No
	Malaria Surveillance		Surveillance prog.
	Tuberculosis Surveillance and Defaulter Control		Special Care prog.
	Trachoma		Surveillance prog.
	Immunizations		Community Immun. prog.
ENVIRON- MENTAL HEALTH	Safe Water		Safe Water Program
	Safe Latrine		Safe Latrine Program
	Waste Disposal		Waste Disposal Program
	Public Facilities		Inspection Program
	Inspection		

FIGURE 1 (cont'd.)

SERVICE LOCATIONS OF WELL-DEVELOPED BHC'S

Program	Components	Location of Services	
		At BHC Itself	In Community
HEALTH EDUCATION	To patients	X	School Health Program Health Education Program
	To groups at BHC	X	
	To schools		
	To community groups		
FOOD DISTRIBUTION	Children	X	None
	Women	X	

Staffing Patterns Necessary to Adequately
Implement the Medical Public Health Functions

If the BHC is to truly serve a population of 25,000 people with individual services at the BHC and community-based public health programs, it must have adequate numbers of staff. Given the services as discussed previously, the following staffing patterns would be necessary to effectively implement the jobs given to the BHC.

Individual Services at the BHC Itself

Individual services at the BHC are given when demanded by the population. Therefore, the number of staff needed is determined by the number of visitors per day. The WHO has recommended an average of 2.5 visits/person/year as a desirable standard. For the well-developed BHC in this example 1.5 visits/person/year will be used as a minimum standard. That is, if the BHC does not see $1.5 \times 25,000$ persons per year, it is not providing the minimum number of individual services at the BHC (in developed countries, the average visits/person/year is well over 3). For our well-developed BHC, the yearly workload for individual services demanded by the people should exceed 37,500 or about 150 visits/day not including food distribution. The distribution of these visits should be as follows:

	Visits	%
Sickness care	112	75
Maternal care	9(a)	6
Well child care	29(b)	19
	150	100

(a) 1075 pregnant women in the population (CBR of 43) \times 2 visits/pregnancy \div 250 working days

(b) 950 children 0-11 months \times 4 visits/year (3 for immunizations) plus \div
 1750 children 12-35 months at 2 visits/year = 7300 visits \div
250 working days = 29 visits/day

Three BHC personnel are primarily responsible for providing the individual services to people who come to the BHC. These are the doctor, the female health worker (nurse midwife or auxiliary nurse midwife) and the male nurse. The doctor offers services to sick people and sees referrals from the female worker or male nurse. The female worker sees sick children, some sick adult women, and routine maternal and well child care. The male nurse offers individual services to sick people mainly for minor surgical and dressing care. Given the assumptions listed below^(c), the workload for each of these personnel at a well-developed BHC would be as follows:

Worker	Patients/day	Time required/day	Workers Required to Fulfill This Obligation
Doctor	72	12 hours	2
Female Worker	72	12 hours	2
Male Nurse	11	6 hours	1

(c) Doctor: 60% of sickness care, 10% of maternal and child care (referrals), 5% of male nurse patients, and 10 minutes/patient
 $= (112 \times .6) \times (38 \times .1) \times (112 \times .1 \times .05) = 72 \text{ patients} \times 10 \text{ min/pt} \div 60 \text{ min/hr} = 11.8 \text{ hours.}$

Female Worker: 30% of sickness care, all maternal and well child care at 10 min/person.

Male Nurse: 10% of sickness care at 30 minutes/person.

One other individual service is regularly given at the BHC and that is food distribution. If one assumes that one-half of persons visiting the BHC for maternal care and child care would be eligible, then there would be 19 visits/day for food distribution. In a well-developed BHC this function would be filled by an administrative clerk. If it takes two hours/day to prepare the food distribution requirements and ten minutes/recipient the manpower need would be as follows:

Worker	Clients/day	Time required/day	Workers Required to Fulfill This Function
Clerk	19	5 hours	1

Public Health Programs in the Community

Community health programs are planned programs. In a well-developed BHC, each program must have sufficient personnel to do the job at some minimum level of performance. Therefore, it is important to analyze each program to see what the manpower requirements are.

The communicable disease and high risk surveillance program has as its objectives the visiting of each household in the community at least four times a year. The surveillance itself can be done by trained villagers. The number of villagers needed is determined by workload analysis. Assuming that each villager can visit eight households a day and that about 3675 households exist in the population (6.8 persons/household in Afghanistan), then one surveillance worker could visit 440 households in each quarter of the year (8 households per day x 55 working days in one quarter = 440

households). The number of workers needed then is $3675 \div 440 = 8-9$ workers. This is the number of workers needed to provide surveillance services to the community.

The community immunization program has as its objective the immunization of 75% of susceptibles in the community. Therefore, the workload is dependent on the number of susceptibles. Assuming that all persons are susceptible, then the workload is $75\% \times 25,000 = 18,500$. In a well-developed BHC, the worker should be able to visit about 16 households/day. If each household requires three visits to complete the immunization services then each worker can cover 1200 households/year. (16×5 days \times 15 weeks). Therefore, in the first year 3 vaccinators would be required. After the first year, all households should be visited once a year to find children born in the last year but whose mothers have not brought them to the well child program of the BHC (where they receive immunizations) and to find new families in the community. Then, one or two vaccinators would be sufficient.

The special care follow-up program would give special attention to high risk families. In Afghanistan, about 20% of the families would be high risk and thus the program would cover about 12 visits per year or about 8820 visits/year. One worker could visit about 6 households per day during the 250 working days of the year so six special care follow-up workers would be needed. These workers should be mid-level female health workers.

The family planning motivation program has as its objective quarterly visits to all households. This activity can be done by the surveillance workers as they make quarterly visits. However, interested families should receive follow up by other family planning workers, then 735 households should have a follow-up visit. If a mid-level family planning motivator visits 4 households per

day, then one mid-level family planning motivator is needed to supplement the surveillance workers.

The school health program offers vision and hearing tests to the school plus surveillance for selected infectious diseases (school health teaching is the responsibility of the teacher and not the BHC). Each school should be visited quarterly and each visit should take one day. In a population of 25,000, there will be about 6925 children in the 5-14 age group. If one half of them are in school, there will be about 3462 school children in 3-6 schools. Thus, the workload is 5 schools per quarter or one week of work per quarter requiring about 1/10th of one female worker's time.

The safe water program has an objective of 80% of households having safe water at the time of use. This would require safe sources of water plus safe storage and use of water. The number of households to be included would be 2940. If the entire population were densely crowded, perhaps a few water sources would be sufficient. More likely, in Afghanistan, for example, at least 150 safe sources would be needed (tube wells).

Each source would require construction but let us assume that a construction department did that work. Each source would require two kinds of maintenance: preventive maintenance and repairs of broken down sources. Data on repair rates is hard to find but, for the purpose of this analysis, let us assume that 5% of all tube wells need repair each month and that two wells can be repaired by one person in one day. In that case, about 8 wells would need to be repaired each month or 4 work days/month for one worker. In addition, a good safe water program would have preventive maintenance where all sources would receive monthly visits. If there are 150 sources and the worker can visit 10 each day, then 15 days/month are required to serve a community of 25,000 people.

However, for an effective safe water program, having safe sources is not enough. It is also necessary to have safe storage and safe use of the water. This requires a community health education program in which each household is investigated and those households not practicing water safety receive health education. In Afghanistan, one could assume that 75% of households don't practice water safety in storage and use. These households would require quarterly visits by safe water program personnel to have some reasonable effect. These habits are difficult to change and would require about one-half to one hour health education sessions. One worker could do about 6 of these in one day. Based on 75% of 3675 households, an effective safe water program would require 2 workers to give safe water education. The safe water program would then require three persons to do an adequate job.

A safe latrine and waste disposal program might have as its objectives 80% of households having safe latrines and safe waste disposal. This would require construction which would probably be a BHC function. Construction of safe pit latrines would require one day per household. Maintenance of latrine and waste disposal safety through inspection programs for those households in which latrines are not well maintained and wastes are poorly disposed of. If the construction program had an objective of helping install 25% of households per year with pit latrines, then 735 working days would be required. This would mean three permanent latrine construction advisors would be needed. The latrine maintenance program would be similar to the safe water education program and would require two workers. Therefore, the safe latrine and waste disposal program would require 5 workers in a well-developed BHC.

The public facilities inspection program has an objective of inspecting all restaurants, hotels, and selected public facilities quarterly. In a community of 25,000, the number will be variable but probably includes at least 20 facilities of varying sizes.

Each inspection could take one hour and therefore about six could be done in any one day. Thus, this activity would take about 3 days/quarter or 12 days/year. This would be about 5% of another worker's time.

The health education program has an objective of providing twice yearly health education to groups in the community with special emphasis on maternal health and childbearing. If each ten households were considered to be one group (15 women—about the maximum size of groups where discussion and question and answer periods are effective), then about 736 group sessions should be given in one year. A health educator could give about two of these in one day in the community and, thus, 368 working days would be required to fulfill this function. In addition, group health education should be given daily at the BHC as a full-time job. Thus, an effective health education program would require 2 1/2 - 3 workers.

When one adds up the staffing required to adequately provide each of the BHC functions—individual services and community public health programs—the following results are seen.

TABLE I

<u>Individual Services</u>		
	<u>Workers Type</u>	<u>Number Required</u>
	Doctor	2
	Female Worker	2
	Male Nurse	1
	Food Distribution clerk	1
<u>Community Public Health Programs</u>		
Surveillance	Trained villagers	9
Immunization	Vaccinator	2
Special care	Female health workers	6
Family planning	Female mid-level motivator	1
School health	Female Health Worker	1/10
Safe water	Well maintenance	1
	Well inspection and water education	2
Safe latrine	Latrine construction	3
	Inspection and education	2
Public facilities inspection	Inspector/health educator	1/20
Health education	Health educators	3
		35+
	Total workers for medical/ public health services...say	35

This analysis shows that about 35 workers would be necessary just to provide the medical/public health services to a community of 25,000 people. While this may seem excessive, one should consider how many such workers would exist to serve a community of 25,000 people in a developed country - probably over 280.¹

1. In the USA, there would be 17-20 doctors, 70-80 nurses, 70-80 other paramedical personnel and probably over 100 public health workers working in various areas including the water and sewer departments. The total is about 280 persons.

Medical/Public Health Skills Needed in a Well-Developed BHC to Adequately Carry out its Function

Having a sufficient number of service personnel is hardly adequate to effectively carry out the functions a well-developed BHC would have to perform. Each worker needs the proper skills to do his/her job. The following list shows what overall skills would be necessary in each worker to effectively do the job. Of importance is the fact that the BHC is a unit that offers outpatient individual services in a rural setting. It is not an urban hospital with bed patients. In the community public health areas, the same holds true. The BHC is a rural public health unit and workers need skills in working in public health programs in the rural environment--not in working in the capital city or other large urban areas.

Figure 2

WORKER TYPE	JOB	SKILLS NEEDED TO PERFORM EFFECTIVELY
Doctor	Sickness care	Outpatient medical diagnosis and treatment Outpatient minor surgical procedures Outpatient care for sprains, fractures, contusions, including the ability to put on a cast Outpatient gynecological care and referral care for complications of pregnancy Outpatient mental health care Emergency diagnosis and treatment for life-threatening conditions
Female workers (ANM or mid-wife)	Sickness care	Outpatient diagnosis and treatment for common minor medical conditions of women and young children

WORKER TYPE	JOB	SKILLS NEEDED TO PERFORM EFFECTIVELY
Female workers (continued)	Maternal care at the BHC	Outpatient care for routine pregnancies, diagnosis of high risk pregnancies, management of labor and delivery for normal pregnancies, routine postpartum care and care during lactation
	Child care at the BHC	Outpatient care for children who are not acutely sick including assessment of growth and development, assessment of the need for immunizations, and vision and hearing testing
	Special care follow-up in the community	Follow-up through home visiting of high risk pregnancies and high risk children, particularly malnourished children
Male Nurse	Sickness care at the BHC	Outpatient care for trauma and burns
Food distribution clerk	Food distribution at the BHC	Reading, writing, clerical recording and reporting, filing of records, preparation of WFP materials
Village surveillance workers	Surveillance program in the community	Reading of surveillance forms (may be non-literate forms), ability to walk in the community and talk to people, basic knowledge of diseases and conditions under surveillance, basic communications skills
Vaccinator	Vaccination at the BHC Community immunization program	Storage and care of vaccines, refrigerator maintenance, injection techniques, basic recording and filing

WORKER TYPE	JOB	SKILLS NEEDED TO PERFORM EFFECTIVELY
Family planning motivator	Motivation in the community for interested couples	Advanced motivational skills and communication skills
Well maintenance specialist	Safe water program	Repair of tube wells, ordering and storage of parts and lubricants, preventive maintenance of tube wells
Water safety educator	Safe water program	Advanced water safety education and communication skills
Latrine construction specialists	Safe latrine and waste disposal program	Construction of pit and water seal latrines, ordering, storing, and maintenance of equipment
Latrine and Waste disposal safety specialist	Safe latrine and waste disposal program	Advanced communication skills, advanced latrine and waste disposal maintenance skills
Health education specialists (MCH)	Community health education program	Advanced subject matter and communications skills, community organization and group dynamics skills

This list demonstrates advanced skills are needed by most workers to perform their jobs. Without these skills, workers are unlikely to be able to effectively work. When this happens, morale falls and the BHC doesn't do its job.

These skill needs demonstrate the importance of the training function. Workers must have specific training in the environment in which they will work and perform their jobs under the supervision of their

teachers until they can do the job without supervision. Each job must have a careful analysis of its component parts and the training organization must insure that the workers have all the skills necessary for each and every part of their jobs. Training in urban environments and hospital settings is inadequate preparation for work in a well-developed BHC.

C. MANAGEMENT/ADMINISTRATIVE FUNCTIONS OF WELL-DEVELOPED BHCs

Although the BHC is primarily a service delivery unit, it has many management/administrative functions as well. It has internal management functions to manage its own personnel. In a well-developed BHC, there would be about 35 service workers providing individual services at the BHC and working in 9 community public health programs. Since individual services at the BHC are given on demand to people who visit the BHC, the internal management of this function of the BHC is not too difficult. However, the community public health programs are planned activities and require sufficient personnel and skilled personnel if these programs are to have effective management/administrative support. The BHC also exists as part of a larger system and thus has various recording and reporting functions for higher level management units.

Figure 3 lists the major management/administrative support functions necessary to operate a well-developed BHC.

FIGURE 3
MANAGEMENT/ADMINISTRATIVE FUNCTIONS OF WELL-DEVELOPED BHCs

FUNCTION	NECESSARY COMPONENTS	ACTIVITIES NEEDING FUNCTION
PLANNING	Demonstration of need	The actual planning of BHC activities is the job of the Basic Health Services Department as part of its research and development functions. The activities needing planning include the individual services activities, all of the public health programs, (surveillance, immunization, special care, family planning, school health, safe water, safe latrine and waste disposal, public facilities inspection, and health education), and the reporting to higher management units
	Development of receptive environment	
	Design of the activities and how to do them	
	Design of the management support systems	
	Manning of the system	
	Field testing and revisions	
	Start-up planning	
OPERATIONS MANAGEMENT	Start-up management	Responsibility of BHS headquarters
	Scheduling of services and workers	Scheduling of individual services and workers
		Scheduling of community public health programs and workers
		Allocating work among workers
		Maintaining flow of patients through the BHC
	Managing use of supplies and equipment	Ordering, maintaining inventory control for drugs and equipment
	Controlling the quality of work	Supervising of work of individual services activities
	Supervising of work of community public health programs	
	Supervising of reporting to higher units	

FUNCTION	NECESSARY COMPONENTS	ACTIVITIES NEEDING FUNCTION
	Managing the support systems	Managing the local budget Managing holidays and personal leaves In-service training Maintaining relations with government officials and other decision makers
	Revising and updating the system as new information becomes available	Responsibility of BHS headquarters
EVALUATION	Assessing the results of the activities against the plan	Responsibility of the BHS headquarters

This list demonstrates the many management/administrative tasks in operations of the BHC and its programs, particularly the community public health programs. In a well-developed BHC, what would be the staffing patterns necessary to give adequate management/administrative support to BHC medical/public health services and programs?

Staffing Patterns for Management/Administrative Personnel in a Well-Developed BHC

Figure 4 lists the staffing needs of a well-developed BHC for management/administrative functions. For the support staff, only the administrator is shown although there would be clerks, drivers, sweepers, etc., in addition. The list shows that an additional eight management personnel would be needed including one community public health program manager and 5 supervisors for the community health programs with 3 or more personnel.

FIGURE 4

STAFFING NEEDS AT A WELL-DEVELOPED BHC
MANAGEMENT/ADMINISTRATIVE FUNCTIONS

FUNCTION	INDIVIDUAL SERVICES	COMMUNITY PUBLIC HEALTH PROGRAMS
Scheduling	Doctor	Community health program manager
Managing use of supplies and equipment	Pharmacists (drug) Logistics specialist (shared)	Logistics specialist (shared)
Controlling the quality of work	Doctor	Surveillance program supervisor Special care program supervisor Safe water program supervisor Safe latrine and waste disposal supervisor Health education supervisor
Managing the support systems	Administrator (for entire BHC)	

Management/administrative skills needed in a well-developed BHC

Figure 4 shows that the doctor and the pharmacist have management/administrative functions in addition to their medical/public health job (doctor) or their technical support job (pharmacist). The other eight jobs are purely management jobs. The skills needed for these jobs are shown in Figure 5 below:

FIGURE 5

MANAGEMENT/ADMINISTRATIVE JOBS
IN A WELL-DEVELOPED BASIC HEALTH CENTER

WORKER TYPE	JOBS	SKILLS NEEDED TO PERFORM EFFECTIVELY
Doctor	Scheduling Quality control for individual services programs	Planning individual services targets Planning hours of operation for individual services Allocating work among staff for individual services programs Performance evaluation skills for medical care activities, basic teaching and communications skills, motivational skills
Community Health program manager	Overall management of community public health programs	Public health subject matter, basic planning skills, advanced operations management skills (all aspects), evaluation skills
Logistics specialists	Managing use of supplies and equipment	Ordering and inventory control for medical and public health equipment
Program supervisors	Controlling the quality of work	Performance evaluation for public health activities, basic teaching and communication skills, motivational skills
Administrator	Managing the support systems	Personnel management, financial management, information system management, physical plant management

The management/administrative responsibilities of the doctor are limited if there is a community public health program manager to manage all public health activities. If the doctor remains in charge of this well-developed BHC, then the doctor must have necessary skills in public

health subject matter to give effective guidance to the community public health program.

In this approach to the management of a well-developed BHC, the doctor retains a primary focus on sickness care and the quality of maternal and child care in the BHC. As he has spent about 6-8 years preparing for this job, he should be able to perform this work effectively. The doctor would require specific training in performance evaluation, communications, on-the-job training, and motivational methods to supplement his usual medical education and he should have adequate training in medical school in public health conditions of his country.

The key to the success of the community health activities is the community health program manager. This person should be skilled in public health content and in basic management. Either a college degree program in public health management or a two year special course would provide such a worker with the critical management skills so lacking throughout the developing world.

Besides a community health program manager, mid-level supervisors are needed to supervise all aspects of the community health program. For effective programming, an adequate span of control and mid-level supervisory skills must be present so that both diagnostic and corrective action systems can be developed.

The administrator is another key element in operating effective BHCs. He maintains control over management support systems, particularly financial control, personnel management, and care of the BHC building and equipment.

If these personnel were present, adequately skilled, had adequate budgets, and were adequately supported by higher level units, the BHC could be an effective force in improving the mortality, morbidity, and disability for its community of 25,000.

D. MANAGEMENT/ADMINISTRATIVE FUNCTIONS OF A WELL-DEVELOPED BASIC HEALTH SERVICES HEADQUARTERS

A Basic Health Services Headquarters (BHS HQ) has 6 main jobs:

1. Management of existing basic health service units and their activities and programs
2. Research and development of new services and programs and research and development to improve existing services and programs.
3. Coordination with other units of government in areas pertaining to basic health services.
4. Training of personnel within the basic health services to maintain and enhance skills.
5. Evaluation of BHS activities/programs.
6. Management of BHS HQ itself and other intermediate management units.

Each of these jobs requires the application of the management process --planning, operations management, and evaluation. Figure 6 shows the activities needing these functions in the area of basic health services in a well-developed BHS HQ.

FIGURE 6
MANAGEMENT/ADMINISTRATIVE FUNCTIONS OF A
WELL-DEVELOPED BASIC HEALTH SERVICES HEADQUARTERS

FUNCTION	NECESSARY COMPONENTS	ACTIVITIES NEEDING FUNCTION
PLANNING	<u>Existing Programs</u>	
	Objectives	Individual services activities for BHCs
	Outputs	Community public health program activities of BHCs
	Quality standards	Coordination planning for logistics, personnel, finance, training
	Inputs	Training activities within BHS HQ

FUNCTION	NECESSARY COMPONENTS	ACTIVITIES NEEDING FUNCTION
PLANNING (cont'd)	<u>New Programs</u>	
	Demonstration of need	Research and development of new activities and programs for BHCs
	Development of receptive environment	Research and development of new or improved management/administrative systems
	Design of the services/programs	
	Design of the management support systems	
	Manning of the system	
	Fieldtesting and revisions	
	Start-up planning	
OPERATIONS MANAGEMENT	Start-up management	New activities or programs of BHCs
		New management/administrative systems within BHCs
	Scheduling of services	Within BHS management/administrative units
	Managing use of supplies and equipment	Training activities within BSHSQ Within BSHSQ
	Controlling the quality	Of BHC'S Of BSHSQ Of training within BSHSQ Of intermediate management units
	Managing the support systems	Within BSHSQ
	Revising and updating the system as new information becomes available	All BHS units
EVALUATION	Assuring the progress toward the objectives	BHC activities and programs Worker skills after training

Staffing Patterns Necessary to Effectively Manage a BHS System

Within the BHSQ, there should be smaller units to fulfill the major jobs of the BHSQ: management of BHCs; research and development of new activities/programs; coordination with other government units; training; evaluation; and headquarters administration. Each of these will be discussed in some detail.

BHC Management Unit: Management of existing activities and programs of BHCs is mainly done through supervision and statistical reports. Effective supervisory control requires a span of control of one supervisor for each 5-8 BHC'S. A well-developed BHSQ with 100 BHC's would have from 13-20 supervisory teams. Each team would have one member for supervision of the individual services programs, one member for supervision of each of the major community health programs, one to check supply and equipment maintenance, and one for supervising the support systems. In this situation, there would be 8 persons per supervisory team or from 104-160 supervisory personnel. To maintain an adequate span of control of the supervisory teams, 3-4 supervision managers would be necessary plus one person in charge of the entire supervisory program, 7-10 clerical staff would be necessary.

Management of the statistical reporting system would require about one clerk for each 20 BHCs and one manager for statistical reporting-- a total of 6 persons in our example.

Thus, management of existing BHCs would require about 140 personnel for effective management control exclusive of secretarial help.

Research and Development Unit: The research and development unit in a well-developed BHSQ would have one group concentrating on medical/

public health services and another group concentrating on management/administrative functions. Each group probably would have at least five research and development personnel. The total would be not less than 10 persons.

Coordination Unit: The main jobs for coordination within the ministry involve logistics, personnel, finance, and training. A well-developed BSHQ would have a management person in each of these areas plus clerical support. In our example, a coordination manager and four management specialists would be adequate plus clerical staff.

Training Unit: The training unit offers in-service training to BHC personnel in medical/public health skills and in basic management/administrative skills. If each worker is to receive in-service education twice per year for 3 days (once on medical/public health skills and once in management/administration--a minimal program) with a class size of 20-30 and there are 100 BHC's with 8 types of workers in each, then about 30-40 trainers would be needed. 6-8 trainer supervisors would be needed as well as a training coordinator. In addition, 4 curriculum developers would be needed and 2 testing specialists. This curriculum development and testing unit would require a manager. There would also be a training aids staff of 4-8 and a training materials administration staff of 10 or more. The whole training unit would require 2 senior training managers and would have 65 or more personnel plus clerical staff,

Evaluation Unit: The evaluation unit would evaluate the activities and programs of existing BHCs and of the training unit. It would have specialists for individual services evaluation and for each of the community public health program types. In addition, it would have personnel in management systems evaluation. To support these staff, research design and statistical personnel would be present

as well as an evaluation manager. Most likely, over 15 personnel plus clerical staff would work in such a unit in a system having 100 BHC's.

Headquarters Administration Unit: If the rest of the BSHQ unit had about 235 personnel plus clerical staff, a headquarters administrative unit would need 25 or more people to manage the personnel records, office supplies, pay records, etc., of such a large system.

This analysis shows that about 260 people plus clerical staff would be necessary to adequately manage a BHS system with 100 BHCs. These people could all be in a BSHQ--or a BSHQ plus intermediate management units as an organizational pattern.

Management/administrative skills needed in a well-developed BHS Management System

Figure 7 shows the management/administrative skills needed to optimally manage a well-developed BHS management system. Of importance is that some level of management skills--mostly mid-level and advanced level skills are needed to operate a large, decentralized health system effectively.

FIGURE 7
MANAGEMENT/ADMINISTRATIVE SKILLS IN A WELL-DEVELOPED
BASIC HEALTH SERVICES MANAGEMENT SYSTEM

BHC Management Unit

WORKER TYPE	JOBS	SKILLS NEEDED TO PERFORM EFFECTIVELY	OPTIMUM QUALIFICATIONS
Supervision program director	Overall management of supervisory program	Advanced management skills with special skills in performance evaluation, worker motivation, training, and communications Advanced medical/public health knowledge	MD/MPH/MBA
Supervision team managers	Direct supervision of 5-8 supervisory teams	Same as program director	Same as program director
Individual services supervisors	Supervision of sickness care, maternal care, child care	Mid-level management skills Advanced medical skills and some public health knowledge	MD with mid-level management training (certificate)
Surveillance program supervisor	Supervision of surveillance programs	Mid-level management skills Mid-level public health skills	Senior nurse with mid-level management training (certificate)
Safe water program supervisor	Supervision of safe water program	Mid-level management skills Training in water safety	Environmental engineer with mid-level management training (certificate)

WORKER TYPE	JOB	SKILLS NEEDED TO PERFORM EFFECTIVELY	OPTIMUM QUALIFICATIONS
Safe latrine and waste disposal program supervisor	Supervision of safe latrine and waste disposal program	Mid-level management skills Training in latrine and waste disposal problems	Environmental engineer with mid-level management training (certificate)
Health education program supervisor	Supervision of health education program	Mid-level management skills Training in health education	Health education (MPH) with mid-level management training (certificate)

E. PLANNING FOR THE FUTURE: The Nature of the Basic Health Center

Afghanistan is not alone in having unrealized expectations for the Basic Health Center. The generally accepted idea of the BHC, based on the work of John Grant in India in the 1930's and 1940's, has numerous conceptual flaws.

First of all, the BHC is the most peripheral unit of large governmental ministries. The BHCs are distributed widely in remote and difficult living environments. The abilities of developing countries to manage these remote, decentralized units is extremely limited. Poor roads, lack of telephone communications, and a poorly understood definition of operating procedures for BHCs contribute to ineffective management.

Secondly, the expected jobs of the BHC are too complex. The BHC is not a simple unit in most developing countries. It is first and foremost a medical unit for the care of sick people. That is its primary job because that is what the people want and expect. They want relief from fear, pain, and suffering when sick. In addition, in most developing countries, the BHC is supposed to be the public health department for its surrounding area. This function is almost never effective. Why is this?

One reason is that public health programs are planned activities that require a degree of management sophistication not commonly found in the personnel assigned to the BHC. Secondly, inadequate numbers of personnel are assigned to do the public health tasks at a minimum level of effectiveness. For a community of 25,000 people in the USA, there

would be about 150 persons involved in sickness care and over 100 involved in community public health including water and sewer department personnel. How the BHC in Afghanistan is expected to make improvements in community health for 25,000 people with three medical workers and three public health workers is difficult to imagine.

Thirdly, the training of workers is inadequate and inappropriate to their jobs at the BHCs. The doctor in particular is inappropriately trained. A job analysis of the doctor's job, as presently conceived, shows that up to 50% of his time should be spent in management-related activities. Yet doctors receive no management training and their technical training is urban-based and hospital specific. How they can be expected to be effective BHC managers is also difficult to imagine.

The issues of BHC management need to be faced. Should a doctor with seven years of technical training spend one half of his time in activities outside his field of training? Is he motivated? Is this the best use of his time? If the BHC is to fulfill community health functions, perhaps a BHC manager should be trained to relieve the doctor of the administrative tasks of the BHC. The doctor and the administrator should jointly plan community programs and the administrator should be responsible for their implementation. This administrator should have a college degree and specialized training in BHC management. However, as shown below, the BHC needs to be redefined.

Fourthly, the management of a Basic Health Center system, as presently conceived, is too complex a management task for most developing country ministries. A well-developed BHC

would have four or more medical care programs and up to nine community health programs. Each medical care program and each community health program have multiple sub-components each requiring management control. The amount of information needed to manage this number of functions correctly is extremely large. The conversion of this data into processed information in a form for management decision-making requires the analysis capabilities of the Basic Health Services Department to be at least moderately sophisticated. This situation is unlikely to be found in personnel working in health ministries. In fact, the design of such an information system is a complex task that might take 3 years of high level technical assistance to develop and field test before any management at all might occur.

In addition, the abilities of developing country health ministries to respond to performance deficiencies are limited. Most of the required management support systems to correct deficiencies are underdeveloped. These systems must be designed, field tested, and staff trained in such a way that all the systems begin to function well about the same time. This systems analysis and design capability is usually missing and the need for it poorly perceived in health ministries dominated by doctors trained in hospital medicine.

Fifthly, the financial constraints on poor countries limits the number of activities that they can successfully pursue. Afghanistan was spending 40¢ per capita on health. Only 12¢ went to basic health services. To achieve anything with 12¢ per capita takes careful planning and cost-benefit types of analyses. These analyses are rarely done so that ambitious programs are underfinanced and hence understaffed. Then each program functions at less than minimum standards for

possible effectiveness. As a result, morale plummets, cynicism sets in, personnel begin to look out for themselves and the system becomes corrupted.

What Should Be Done

The goal of the health system is to provide sick people with relief from fear, pain, and suffering and to improve the health status of the people. For this to be done, people must receive medical services upon demand in the closest possible areas to their homes. The majority of sickness problems are simple ones and, as this project has shown, can be successfully handled by trained villagers. The job of the BHC is to be the first referral point for problems villagers themselves can't solve. To do this job, the medical capabilities of the staff must be well developed through specific training for providing medical services in a BHC setting. They must have adequate supplies of emergency drugs at all times plus well-functioning emergency equipment. BHC workers must have emergency and minor surgical skills to be effective. The medical job should be the main job of a streamlined and simplified BHC. The job of the government is to develop as many of these low cost units as possible and distribute them widely among the population to support trained villagers giving primary care.

The community public health jobs are complex and require adequate manpower, skilled planners, and operations managers backed up by adequate management units with supervisory and evaluation capacity. In most developing country settings, the health of the people would be better served by separating the public health jobs from the BHC. In developed countries, with all the skills in higher levels, the public health departments are kept separate from the medical units. It is

unlikely that developing countries with lesser trained personnel can do what developed countries cannot. The BHC should not have public health jobs in the community. Other units should be developed that can refer community health problems requiring sickness care to the BHC, but which can take care of other community health problems themselves. In the financially deficient developing country situation, each community health activity should be carefully studied for manageability and cost-benefit and only one or two activities should be implemented in the beginning. If this occurs, the managers will be able to grow in skills at the same rate the jobs require and the personnel for each program will be sufficient to achieve minimum effectiveness.

Recommendations for BHCs and Public Health in Rural Developing Countries

The following recommendations are certainly applicable for the least developed countries. Countries moderately to well-developed should consider adding other jobs to the BHC only if their management systems are adequately staffed and developed.

Recommendations

1. Simplify the BHC. Limit the number of services that the BHC performs to medical care at the BHC. Planned activities requiring community involvement should be limited to deliveries on request and tuberculosis defaulter follow-up.

2. Determine the numbers of personnel needed by an analysis of demand. The types of personnel should be doctor(s) if enough exist in the country or mid-level paramedical workers plus female health workers and perhaps another person such as a male nurse to assist with dressings and to do the tuberculosis follow-up.
3. Determine the standard drug lists for this unit and assure adequate supplies and a resupply capacity. Determine the cost of this system to be effective, the manpower needs and skills, the transport requirements and develop an effective system. Don't scrimp money on this system. Budget it fully and do it right.
4. Develop a standard medical equipment list for this simplified unit with equipment for emergency care and minor surgery. The BHC can't just be a pill dispensing operation.
5. Design and field test management control systems to monitor the quality of medical care rendered by the BHC. Medical care standards must be developed and performance compared with the standards. The analysis capability of the management units must be developed so that the data can be converted into tabular and graphical displays of processed information that compare performance with standards and compare trends over time. The complexity of this simplified information system will tax the capability of most developing country ministries.

6. Make sure the ministry can take corrective actions for deficiencies found. Insure that adequate positive and negative incentives exist to reward good work and punish poor work caused by lack of motivation. Have an adequate training capacity to remedy poor performance caused by lack of skills.
7. The training capacity of the management units for BHCs must be planned to be able to react to deficiencies found, but also to have standardized practical training to prevent skill decay and to give new skills. New skill development is not the primary function of a continuing education unit. Basic skills must be developed in the basic training programs: medicine, nursing, and paramedical schools. Make sure that the budgets and manpower needs are met.
8. Conduct a careful cost-benefit analysis for community public health programs. Determine the minimum budgets, manpower requirements (services and management control personnel), transport requirements, and supply requirements for each program. Make a priority list of programs based on expected benefit, costs, and complexity of management. Determine, based on the budgets available, how many of these programs should be developed correctly. Do those and don't do the others until more budgets become available. An ineffective program isn't worth doing.
9. Have an entirely separate services structure and management structure for the community public health programs. Don't have the same managers attempt to manage the BHC and the community public health programs. The nature of the jobs is very different.

10. Train public health workers in management techniques as well as the content of public health practice. Stress applied learning in the field. Carefully analyze overseas training programs to try and get programs with a primary management focus which uses public health knowledge to do things.
11. The final result will be numerous simplified BHCs spread throughout the country. They will provide medical backup to trained villagers who give the primary care in the villages. In addition, perhaps at different levels of population, there will exist public health departments, separately managed, which will carry out one or more public health programs based on the priority list and budget available. The public health departments will be managed best by a non-physician college graduate with special training in public health management.

Recommendations for Donor Planning and Phasing of Projects in Rural Health

The following recommendations for donor planning and project phasing in rural health should increase both the effectiveness and efficiency of rural health projects.

Recommendations

1. Consider carefully the recommendations made for the nature of the BHC and for management of the BHC.
2. Consider carefully the recommendations made for analysis and development of public health programs, particularly the needs for each program to be adequately budgeted and staffed to perform at some predetermined minimum standard.

3. Think of projects in phases. Phase I should take from one to two years and the following activities should occur.
 - 3.1 Send as many developing country managers or potential managers abroad for basic management training related to medical care and public health in developing countries. These courses would be one-two years length.
 - 3.2 Send as many developing country trainers or potential trainers abroad for training in technical areas of training: job analysis, training objectives development, development of learning activities, course sequencing and planning, pedagogy (how to teach), and student evaluation and testing. These programs will take one-two years to complete.
 - 3.3 While workers are abroad receiving management and educational science training, have technical experts assist the government with a thorough analysis of the BHC's jobs, its personnel requirements, its management requirements, and its evaluation requirements. Develop predetermined minimum standards for all necessary management-influenced activities.
 - 3.4 Study the curricula of the basic training institutions for appropriateness to the needs of the country and recommend changes.
 - 3.5 Conduct a thorough cost-benefit analysis, using technical experts, that will try to determine expected benefits to mortality, morbidity, and disability from different public health programs.

Determine the budget requirements and staffing requirements for each program to attain an acceptable minimum standard of effectiveness. Rank the programs and determine which should be attempted first. Design carefully the service packages and Management requirements for the planned programs and, if possible, pick leaders and begin staff development training.

4. Phase II activities are implementation-related. By this time, the overseas trainees should have returned. They should not be involved in time-consuming educational advancement during implementation. If further people are to go abroad, they should be people who will be involved in Phase III activities. Phase II will take 3-5 years and the following activities will be undertaken.
 - 4.1 Involve the managers in the development of the medical care management control systems and develop, based on a priority list, the first management control systems and plan for staff training and system start-up.
 - 4.2 Assist the basic training institutions in changing their programs to fit the needs of the country.
 - 4.3 Set up the continuing education training unit and develop curricula based on a survey of deficiencies in skills of BHC workers. Don't develop curricula for problems caused by poor motivation and management. Begin training.
 - 4.4 Do the detailed design for the public health programs that will be implemented. Consider the services

requirements, the management requirements, and the staff development requirements. Begin training of public health department managers who are college graduates if possible. Their training in public health management will take 9 months to a year. Begin implementation of top priority program in the second year of Phase II. Don't add new services to public health departments without careful analysis of the management control requirements for any new service.

5. Phase III activities include the further improvement of the medical care management control systems and, if budget is available, the design and implementation of second priority public health programs. In addition, an evaluation of progress so far should occur with particular emphasis on the improvements in the curricula of the basic training institutions and how their graduates, if any, are performing in the BHCs or the public health department activities.

These recommendations should achieve an orderly development of the rural health systems. Another requirement for the success of planned programs is political stability, but well-designed and implemented public health systems should survive changes of governments!

APPENDIX 2

TRAINING METHODS OF THE
NATIONAL TRADITIONAL MIDWIFE (DAI)
PROGRAM OF AFGHANISTAN

TRAINING METHODS

One of the reasons that the National Dai Training Program in Afghanistan has been successful has been that an illiterate village dai, after the Dai Basic Training Course, can demonstrate to health professionals that she can take a medical history on a woman or child, perform a satisfactory physical examination for important physical signs, make a correct assessment of the severity of the problem, advise appropriate treatment (including referral) and give health education. How can an illiterate woman demonstrate these things after only five weeks of training? The answer lies in the dai training methods.

The National Dai Training Program of Afghanistan uses a carefully organized approach to training based on an analysis of the jobs the dai must do in her environment. This organized approach has been called Training by Objectives or Criterion Referenced Instruction by educational experts. Besides being a carefully designed approach to training, this method of training gives detailed and specific information about how the program is doing - its weak points and its strong points. Thus, the training managers can be responsible for many training teams and know how students in each program are doing for any given subject area of the curriculum (for example, antenatal care) or for any given process area of the curriculum (for example, history-taking). This feedback information about student progress and performance allows immediate modifications to improve weak training areas, and the training programs steadily improve. Also, because the curriculum is carefully designed and easily evaluated, it is easy for trainers to use. It is easy to teach the trainers how to use the curriculum and it is easy to evaluate the trainers as well as the students.

The training methods will be described by their critical components as listed below. It is necessary that all these components be successfully addressed if high quality, relevant training is to be achieved.

CRITICAL TRAINING PROGRAM COMPONENTS

- . Job Analysis
- . Development of Training Objectives
- . Course Planning
- . Development of Learning Activities
- . Development of Teaching Materials
- . Development of Student Evaluation Methods
- . Teacher Training
- . Good Recruitment and Selection Methods
- . Good Training Environment

- . Support of the Graduate
- . Feedback System for Improvements

How the National Dai Training Program used this systematic approach in the training of village traditional midwives will be described in this section.

Job Analysis

Job analysis is the process of determining very specifically what the worker must do in a job. It compares the desired performance to the actual performance and, where discrepancies exist, develops task mastery lists which guide the training process.

The program strategy, based on analyses of the health situation, the demographic situation, and the current and projected status of the government health system led to the determination of the role and responsibilities of the dai in the overall plan for improving the health of the rural people of Afghanistan. The role of the dai is as follows:

Role

To provide primary health care to women and children under the age of five years in rural areas where access to the Basic Health Centers is difficult or where trained female health workers do not exist.

Responsibilities

To recognize normal and not seriously sick people, from high risk and seriously sick people; to refer high risk and seriously sick people to the Basic Health Center or Hospital and to offer treatment and health education to normal and not seriously sick people.

From this definition of the role and responsibilities of the dai in the overall health system of Afghanistan, a list of desired performance skills was developed as shown below.

MATERNITY CARE

I. Antenatal Care

- Recognition of a normal from an abnormal or high risk pregnancy
- Referral of the abnormal or high risk pregnancy
- Nutritional treatment of a normal pregnancy
- Health and nutritional education for the normal pregnancy.

2. Labor and Delivery

- Recognition of the normal from the abnormal labor
- Techniques of safe delivery of the vertex (head) presentation
- Techniques for safe delivery of the placenta
- Recognition of problems of the newly born baby
- Techniques of care of the newly born baby
- Referral of women with abnormal labor and/or delivery
- Referral of newly born babies with problems

3. Postpartum Care for Mothers

- Recognition of the postpartum woman with complications
- Referral of the postpartum woman with complications
- Education of the postpartum woman about breast care, nutrition while lactating, and hygiene

4. Postpartum Care for Children up to One Month of Age

- Recognition of the normal infant from the sick infant
- Referral of the sick infant
- Education of the mother about care of the infant in the first month of life

5. Family Planning Education

- Reasons for family planning
- Methods of family planning
- Education of the mother about family planning

CHILD CARE FOR THE UNDER FIVE CHILD

1. Recognition of the normal, seriously sick, and not seriously sick child
2. Tentative diagnoses for 17 common conditions of childhood, including malnutrition*

<u>* Not Seriously Sick</u>	<u>Seriously Sick</u>
Malnutrition without infection	Fever without other findings
Eye infection	Fever with malnutrition
Mild sore throat	Fever with rash
Mild cough	Fever with swelling
Mild diarrhea without dehydration	Fever with a full soft spot or stiff neck
Non-dangerous skin infections	Fever with earache
Worms	Fever with pus in the throat
	Fever with difficult, rapid, wet breathing or cough with sputum
	Fever with painful or hard abdomen
	Dehydration

3. Treatment for 5 common conditions using non-prescription drugs and nutritional therapy and referral of other conditions
4. Education of mothers of children about general care of the under five child; nutrition and feeding; prevention, recognition, and treatment of the child with diarrhea (including the preparation and use of oral rehydration materials); and prevention, recognition and treatment of eye problems, skin problems and worms.

From studies concerning the dai in rural Afghanistan, the following facts were known:

- . The average dai was about 50 years old
- . The clientele of the dai are generally from the same neighborhood
- . Dais learned skills from other dais (usually family members) and from observing and assisting many deliveries
- . Dais had some correct practices, helpful or harmful, and many poor practices, especially related to the mechanics of delivery
- . Dais give much child advice in the village.

Thus, while the dai had much knowledge and experience, her skills were based on indigenous systems and were of uneven quality. There were also many gaps in her knowledge, attitudes, and practices. For this reason, the list shown on the previous pages was adopted as the Task Mastery List from which the basic curriculum would be derived.

After three or four training classes had been conducted, it was decided to add some other tasks to the Task Mastery List of the basic course. These tasks were to develop interpersonal and health education skills and are as follows:

Health Education Skills

- Why people do things in certain ways
- Why change takes a long time
- How to find out problems
- How to introduce new ideas

Thus, the job analysis, based on the roles and responsibilities of the dai in the overall health system of Afghanistan, the actual performance of the dai in the rural areas at the time the program began, and early experiences in training of dai, led to the Task Mastery Lists from which the curriculum was derived.

Development of Training Objectives

The development of clear, concise behavioral objectives that specify the actions workers must do in their work, the conditions under which the actions are to be accomplished, and the minimum standard competencies for each task form the basis of the CRI approach to training. The training objectives are the roadmap that guides the teacher and student through the training process so that skills on the Task Mastery List are transferred to the student at predetermined levels of quality.

The development of the training objectives is a difficult task for the training program designer. If the training objectives are clear and concise, if each training objective builds on the successful mastery of the previous ones, and if gaps in fact or logic are avoided, the student can smoothly progress through the training course. If the objectives are not clear, carefully sequenced, and factually and logically consistent, the student becomes confused. That is why good design is critical to successful training.

If the training objectives satisfy the above conditions, the evaluation of student progress is easy as the evaluation derives directly from the training objectives and teaching points.

The curriculum of the National Dai Training Program uses this approach to provide the high quality instruction necessary to train people with little or no formal education who work independently of better trained health workers. How the dai curriculum was derived will be demonstrated in the following sections of this report.

An example: If the reader looks again at the Task Mastery List, the first task to be mastered is "Recognition of the normal from an abnormal or high risk pregnancy". The job of the curriculum designer is to develop training objectives that, once mastered, will fulfill this task.

The National Dai Training Program curriculum divides this task of problem recognition into three topical areas. These are: History-taking, Physical Examination, and Diagnosis. Through the use of the data-collection techniques of history-taking and physical examination and using specified criteria for the diagnosis, the dai arrives at the correct answer. Thus, for the example of "Recognition of the normal from the abnormal or high risk pregnancy", three training objectives were developed that describe the behaviors necessary to accomplish this task. These are as follows:

TASK: Recognition of the normal from an abnormal or high risk pregnancy.

TOPIC	TRAINING OBJECTIVE
History-taking	1. Recite the 7 questions to ask every pregnant woman
Physical Exam	2. Demonstrate the 5 abnormal signs to look for in every pregnant woman
Diagnosis	3. Recite the 11 points about how to recognize a high risk or abnormal pregnancy

In other words, by asking specified questions and examining the pregnant woman for specified abnormal signs, the dai can collect the critical information. Once the information is collected, the dai, using the 11 criteria for recognition of the high risk or abnormal pregnancy makes the diagnosis of normal pregnancy, abnormal pregnancy, or high risk pregnancy.

For each objective, there are a series of teaching points. The teaching points for the first two training objectives in antenatal care are shown below.

TASK: Recognition of the normal from the abnormal or high risk pregnancy.

TOPIC	TRAINING OBJECTIVE
History-taking	1. Recite the 7 questions to ask every pregnant woman <u>TEACHING POINTS</u> 1. How old are you? 2. How many pregnancies have you had? 3. Have you had bleeding? 4. Have you had difficult deliveries? 5. Are the rings on your hands too tight? 6. Are you having frequent, bad headaches? 7. Have you had a cough for more than two weeks, or a cough with blood?

TOPIC	TRAINING OBJECTIVE
Physical Exam	<p data-bbox="751 301 1393 395">2. Demonstrate the five abnormal signs to look for in every pregnant woman</p> <p data-bbox="751 432 1040 460"><u>TEACHING POINTS</u></p> <ol data-bbox="751 497 1490 853" style="list-style-type: none">1. Observe the eyes, gums and fingernails for paleness.2. Feel the abdomen to determine if the baby is sideways in the womb.3. Squeeze the hips together to determine if there is pain.4. Observe the face and hands for swelling5. Measure the height by using reference mark to determine if the height is under 145 cm.

The teaching points tell the dai exactly what to do. They are derived from the state of medical knowledge about normal, abnormal, and high risk conditions and the epidemiological situation of rural Afghanistan.

Once the dai knows the history questions and can do the physical exam, the third training objective gives the criteria for abnormal or high risk women.

TOPIC	TRAINING OBJECTIVE
Diagnosis	<p data-bbox="751 1356 1455 1450">3. Recite the 11 points about how to recognize an abnormal or high risk pregnancy.</p> <p data-bbox="751 1487 1040 1515"><u>TEACHING POINTS</u></p> <ol data-bbox="751 1552 1435 1945" style="list-style-type: none">1. Age over 40 or under 162. More than 5 pregnancies3. Bleeding from vagina4. History of difficult deliveries5. Swelling of hands so rings are tight6. Frequent severe headaches7. Very pale eyes8. Baby sideways in the womb9. Painful hips10. Shorter height than 145 cm.11. Cough for more than two weeks

The reader can see the clarity, conciseness, careful sequencing, and factual and logical consistency of the training objectives. It is not difficult for the dai to make the diagnosis of normal, abnormal, or high risk pregnancy once trained in this manner. Not only that, the training objectives are focused on the sequence of events the dai must perform to make the diagnosis: that is, ask questions and examine patients.

This approach works because of the epidemiology of maternal health problems. It is known that more than 80% of women will have normal pregnancies. The abnormal and high risk group contributes almost all of the deaths and complications due to pregnancy. Thus, using this approach, the dai can care for over 80% of cases and refer the abnormal or high risk group to better trained workers in, hopefully, better equipped facilities.

Once the dai has made the diagnosis, she has two main categories of tasks to perform - give treatment (including referral) and give health education. For the abnormal or high risk woman, the treatment is referral. For the normal pregnancy, the antenatal care treatment is health education. Most of the training time is spent in health education. The remaining training objectives for antenatal care are shown below.

TOPIC	TRAINING OBJECTIVES
Treatment	4. Recite one point about treatment of the abnormal or high risk woman.
Education	5. Recite 6 teaching points about self-care during pregnancy 6. Recite 4 teaching points about what the pregnant woman should eat every day 7. Recite 5 points to tell the mother about danger signs of pregnancy 8. Recite 5 teaching points about protection of the pregnant woman and her family from tuberculosis 9. Recite 5 items to tell the mother to prepare for delivery.

Thus, the training objectives for the dai curriculum are divided into five topical areas as shown below:

- . History-taking
- . Physical Examination
- . Diagnosis
- . Treatment
- . Health Education

Each subject area of the curriculum uses this topical categorization. This repeating format makes learning easy for the dai as it is based on the sequence of events she must use with each patient. It is also critically important for evaluation as will be shown later in the report.

Course Planning

Once the training objectives are determined, the course designer must plan the organization of the course. This includes the development and sequencing of teaching units, the development of learning activities, and certain other considerations.

Development and Sequencing of Teaching Units: The dai training objectives fell into natural training units based on the job analysis and natural sequences of pregnancy and child care. The units are the following:

Pregnancy Care

- Antenatal Care
- Labor and Delivery
- Postpartum Care for Mothers
- Postpartum Care for Babies

Family Planning Education

How to Give Health Education

Medical Care for the "Under Five" Child

- Nutrition/Malnutrition
- Diarrhea
- Eye Problems
- Skin Problems
- Throat and Respiratory Problems
- Worms
- Wound Care
- Other Selected Problems

Other Considerations in Course Planning: There were certain considerations in the course planning process. These were as follows:

- . Training units should start with familiar areas and go to non-familiar areas.
- . The training units should be based on the learning process.
- . The training should be related to prevailing expectations.
- . The training should help build the training group.
- . The training should incorporate unifying themes.
- . The training units should be consistent.

Familiar to non-familiar: With persons who are not used to formal training, it is important to begin with familiar topics. Thus, the training program began with pregnancy care.

Based on learning process: The training units followed the natural course of pregnancy over time. Within each training unit, the natural process of investigating the problems of sick people was followed (History-taking, Physical Exam, etc.). Learning theory was followed by beginning with tasks involving simple recall (History-taking) followed by more complex psychomotor tasks (Physical Exam) and then followed by the highest form of learning, synthesis (Diagnosis). These natural sequences maximize the learning process.

Based on prevailing expectations: The training units did what the dais thought they would do - trained them in how to do their work in better ways. Theory was not prominent, nor was there unnecessary anatomical and physiological detail.

Building the training group: It is important to build cohesiveness within the student group and between the teachers and the student group. This was accomplished by the dai living together (some dais lived nearby to the course and didn't stay overnight but ate lunch at the class site), the teachers living with the dai, having Dai Training Teams capable of teaching in two different languages and an emphasis on group work during the training sessions.

Incorporating unifying themes: The unifying themes of the dai training course were the importance of health education, the importance of referral of serious or high risk cases, and service to the community.

Consistency of training units: Considerable effort and many revisions were required to make each part of the dai curriculum internally consistent and mutually reinforcing to every other part. This technical work is critically important in guaranteeing clear understanding of course material - particularly for health education, so that each dai gives similar messages on the subject matter.

Development of Learning Experiences

Learning experiences are experiences in which the student will either experience the future work task under supervision or, in cases where direct experiences are difficult, will experience the task through simulation. The learning experiences are developed after the training objectives, and each set of learning is based on a training objective.

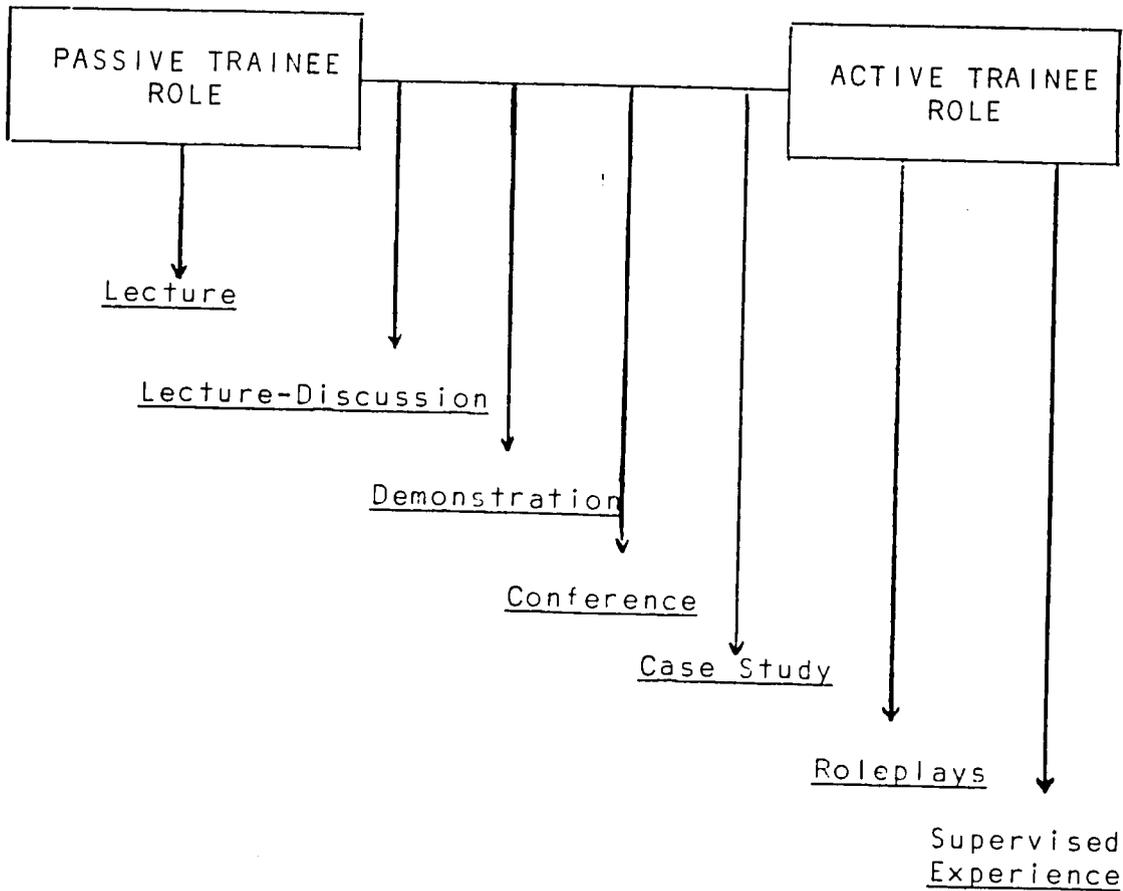
Characteristics of good learning experiences are as follows:

- . Involves the student in the learning process - that is, the student actively participates in the learning task.
- . Breaks tasks into small steps and lets student experience each step at a rate where successes are maximized
- . Uses practical, everyday examples to clarify teaching points
- . Draws on student's backgrounds and own experiences to relate to subject matter
- . Gives student a chance to ask questions during experience
- . Gives student a chance to follow experience with reflection and discussions
- . Repeats tasks with increasing responsibilities
- . Uses simulations effectively and maximizes active participation
- . Encourages value formation as well as skill development.

Examples of how the dai program followed these principles are shown below.

Involves students in the learning process: The teaching methods determine the extent of student involvement. The following chart shows the differences in teaching methods from passive trainee role to active trainee role.

TEACHING METHODS & TRAINEE PARTICIPATION



From this chart it can be seen that lectures are the worst form of instruction and that direct supervised experience is the best. The examples from the dai curriculum shown below illustrate the principles of active learning. In the dai curriculum, learning experiences in the teacher's guide are called "How to Teach This".

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
1.0 History Taking	<p>1.1 Recite the 7 questions to ask every pregnant woman.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. How old are you? 2. How many pregnancies have you had? 3. Have you had bleeding? 4. Have you had hard deliveries? 5. Are your rings too tight? 6. Are you having frequent bad headaches? 7. Have you had a cough for more than 2 weeks or a cough with blood? 	<ol style="list-style-type: none"> 1. Discuss why it is important to know about high risk conditions. 2. Have the dais practice asking the 7 questions of each other. 3. Have the dais practice asking the questions of pregnant mothers. 4. Have the dais memorize the 7 history question
2.0 Physical Exam	<p>2.1 To examine pregnant woman for 5 abnormal signs.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Observe eyes, gums and skin for paleness. 2. Feel abdomen to determine if baby is sideways in womb. 3. Squeeze hips together to determine if there is pain. 4. Observe face and hands for swelling. 5. Measure height by using reference mark on dai (145 cm) to determine if height is under 145 cm. 	<ol style="list-style-type: none"> 1. Discuss the 5 physical signs of high risk and the dai's experience. 2. Have dais perform exams on each other and on instructors. 3. Perform exam on pregnant patients including height of patient.

It can be seen that discussions and supervised practice are the predominant learning modes. Role-playing was often used to act out the learning experience. This was a favorite learning experience of the dais who loved to pretend they were in the village. One dai would often be the patient and another the dai as they demonstrated how they handled problems. Dais actually used clothes and even turbans to make role-playing more realistic. Dais didn't mind pretending to be men. The example below illustrates the use of stories and case studies.

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
3.0 Diagnosis	<p>3.1 Recite 11 points about how to recognize a high risk pregnancy.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Age over 40 or under 16. 2. More than 5 pregnancies. 3. Bleeding from vagina. 4. Difficult deliveries. 5. Swelling of hands so rings are tight. 6. Frequent severe headaches. 7. Very pale eyes. 8. Baby sideways in womb. 9. Painful hips. 10. Shorter height than mark on dai. 11. Cough over two weeks or cough with blood. 	<ol style="list-style-type: none"> 1. Tell stories or case stud about pregnant women and have dais decide whether pregnancy is normal or high risk. 2. Have dais diagnose high risk pregnancy by asking history questions and by exams. 3. Have dais tell stories of their experiences.
4.0 Treat- ment	<p>4.1 Recite one point about treatment of the high risk pregnant woman.</p> <p><u>TEACHING POINT</u></p> <ol style="list-style-type: none"> 1. Refer high risk women to the health center or hospital. 	<ol style="list-style-type: none"> 1. Discuss patients and creat stories of pregnant women who are high risk or norma 2. Discuss traditional treatments and discourage harmful ones.

It is also important to have repetition of critical steps in the learning process. Overlearning and constant repetition under supervision are important in the training of persons with little or no prior education. The examples above demonstrate the use of repetition of previous steps.

Breaks tasks into small steps: The progression of the teaching objectives and learning experiences is sequential with each task building on the previous skill. In the examples above, the progression from history-taking to physical exam to diagnosis to treatment is shown. The next section finishes this particular sequence.

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
5.0 Education	<p>5.1 Recite 5 teaching points about selfcare during pregnancy.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Don't wear tight clothes. 2. Bathe at least 2 times a week. 3. Rest frequently by lying down with feet up. 4. Smoke less. 5. From 7 months of pregnancy, massage breasts with vaseline each night and wash breasts each morning (mainly primapara). 	<ol style="list-style-type: none"> 1. Ask dais what they do. 2. Encourage good points. 3. Teach 5 points about selfcare. 4. Have dais practice on each other (roleplaying) 5. Have dais practice on patients. 6. Demonstrate vaseline application. 7. Practice recitation for memorization.
	<p>5.2 Recite 4 teaching points about protection of mother and family from T.B.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Cover mouth when coughing because TB is spread through the air. 2. Clean clothes of a TB patient separately from the rest of the family. 3. Don't cough in baby's face when breastfeeding. 4. A person with active TB must sleep and eat apart from the family. The person should not kiss babies or children. 	<ol style="list-style-type: none"> 1. Ask the dais what they do in their practice. 2. Encourage good practices 3. Teach the 4 points about protection. 4. Have dais practice on each other (roleplaying) 5. Have dais practice on patients. 6. Practice reciting the teaching points for memorization. 7. Explain that TB is transmitted by air most of the time.

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
5.0 (cont.)	<p>5.3 Recite 4 teaching points about what the pregnant woman should eat every day.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Eat yoghurt or drink milk. 2. Eat vegetables and fruits. 3. Eat meat, liver, eggs or WFP rations. 4. Eat bread or cereal. 	<ol style="list-style-type: none"> 1. Discuss why foods are important: body building, energy, protective. 2. Discuss costs for their patients and what women eat and why. 3. Have dais shop for food and fix a balanced diet meal. 4. Emphasize importance of gaining weight. 5. Demonstrate use of WFP rations.
	<p>5.4 Recite 5 items to tell the mother to prepare for delivery.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Clean, sun-dried cloth and plastic cloth. 2. Small cloth for wrapping baby. 3. One new razor blade. 4. One large basin for bathing the baby. 5. Prepare thread and gauze. 	<ol style="list-style-type: none"> 1. Demonstrate how to clean the cloth, dry cloth, cut cloth and store it for each type of use: <ol style="list-style-type: none"> a) for cord b) for under mother at delivery c) for baby d) for baby's eyes e) for perineal pads 2. Demonstrate how to pack a cord kit: <ol style="list-style-type: none"> a) razorblade b) thin cloth for cord 3. Practice for each dai at least two times.

Uses practical, everyday examples to clarify teaching points: The use of role-playing and story-telling allows the teachers to let the dais learn using their own experiences. The learning experiences from the diagnosis and treatment sections demonstrate this point.

Draws on student's background and own experiences: The use of role-playing and story-telling also demonstrate the use of the student's own experiences.

Gives student a chance to ask questions during experience: The discussion sessions are interactive; that is, the student and the teachers interact together. The discussions in the dai

program encourage questions and the use of another trained dai as a teacher reduces the shyness of students in asking questions.

Gives students a chance to follow experience with reflection and discussions: The training environment of the dai program is designed to use the evenings for reflection and discussions. The students and teachers live together, eat together, and relax together in the evening where talk often turns to problems of pregnancy and children, and where students consider their learning experiences and discuss their day with fellow students. It often seems that as much learning occurs in the evening as during the day, and the evening sessions can contribute greatly to value formation and feelings of positive self-worth.

Repeats tasks with increasing responsibility: Since the training is sequentially developed, the students practice each prior step while learning the new one. The students also begin practicing on themselves, then on plastic pelvic models or babies, as needed, and then on people at the BHC or local hospital. As training progresses, the experiences are repeated with less instructor supervision so that by graduation, independent assessment, treatment and education are being done.

Uses simulation effectively and maximizes active participation: Certain training objectives cannot be met by supervised experience. Then simulations should involve the student in active learning also. The following section from the dai curriculum illustrates effective use of simulation.

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
4.0 Treat- ment	<p>4.2 Tell and demonstrate the two things the dai should do during delivery.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. In head presentation, place one hand on baby's head to guide the birth and prevent tears. 2. Check for cord around the neck. 3. If loose, pull cord over head. If tight, complete delivery. 	<ol style="list-style-type: none"> 1. Demonstrate with pelvic model. 2. Trip to hospital to observe delivery.

TOPIC	OBJECTIVES AND TEACHING POINTS	HOW TO TEACH THIS
4.0 (cont.)	<p>4.3 Tell and demonstrate the two things the dai should do immediately after delivery of the baby before cutting the cord.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Turn baby upside down to allow fluids to drain out. 2. See if baby is breathing normally. 	<ol style="list-style-type: none"> 1. Have each dai practice action in sequence with model.
	<p>4.4 Tell and demonstrate the four steps the dai should use when cutting the cord before delivery of the placenta.</p> <p><u>TEACHING POINTS</u></p> <ol style="list-style-type: none"> 1. Tie the cord 1 finger away from the baby. 2. Clamp the cord on the side closest to the mother. 3. Cut the cord between the tie and the clamp. 4. Cover with a clean cloth. 	<ol style="list-style-type: none"> 1. Practice with model.

Encourages value formation: The use of story-telling, case studies, and reflection and discussion contribute to value formation. By graduation, dais feel themselves to be an important health resource to their village.

Development of Teaching Materials

The development of teaching materials is important to illustrate points where supervised practical experiences are difficult. The instructor must plan ahead so that she has the required materials at the time of teaching. The example below demonstrates how teaching materials are incorporated into the teacher's guide.

HOW TO TEACH THIS	TEACHING MATERIALS
<ol style="list-style-type: none"> 1. Discuss why foods are important - body building, energy, protective 2. Discuss costs for their patients and what women eat and why 3. Have dais shop for food and fix a balanced meal 4. Emphasize importance of gaining weight 5. Demonstrate use of WFP rations. 	<ol style="list-style-type: none"> 1. Examples of each kind of food, have a free lunch with a balanced meal for a pregnant woman. Dais should buy the food. 2. WFP rations 3. Cooking utensils 4. Money
<ol style="list-style-type: none"> 1. Demonstrate how to clean the cloth, dry cloth, cut cloth and store it for each type of use. <ol style="list-style-type: none"> a) for cord b) for under mother at delivery c) for baby d) for baby's eyes e) for perineal pads 2. Demonstrate how to pack a cord kit: <ol style="list-style-type: none"> a) razor blade b) thin cloth for cord 3. Practice for each dai at least two times 	<ol style="list-style-type: none"> 1. Soap from bazaar 2. Basin 3. Cloth 4. Scissors from midwifery kit 5. Razor blade

Development of Student Evaluation Methods

The evaluation of health worker training is important, particularly for village-based workers. There must be conclusive evidence that the worker has skills to implement acceptable quality primary care in the village. The dai program has a strong evaluation system - both in individual performance evaluation and in analysis of group performance data to modify the teaching program. The following types of skill evaluation of dais were done:

- . Technical Skills
- . Interpersonal Skills

Technical Skills: The evaluation of technical skills involves evaluation of knowledge skills (recall, discrimination, synthesis) and manipulative skills (how to do things with one's hands). The dai program uses both test measurement instruments and non-test evaluation instruments to evaluate technical skills.

The program uses an oral pre and post-test instrument to evaluate student progress in knowledge skills over the course of the program. The example on the following page is from the evaluation of antenatal care. It can be seen how this carefully follows the training objectives. In fact, the knowledge evaluation is limited to the training objectives and teaching points as these stress practical application of knowledge needed to deal with patients. The evaluation is given orally, thus allowing both pre and post-tests to be on the same page.

DAI EVALUATION - PERINATAL CARE 1

PRETEST DATE _____				QUESTIONS	POST TEST DATE _____			
Results		Criteria For Passing	Check Box if Answer is correct		Check Box if Answer is correct	Criteria for Passing	Results	
Pass	Fail						Pass	Fail
<input type="checkbox"/>	<input type="checkbox"/>	5 of 7 Answers Correct	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1. What 7 questions should you ask every pregnant woman? Answers: 1. How 1. How old are you? 2. How many pregnancies have you had? 3. Have you had bleeding? 4. Have you had hard deliveries? 5. Are your rings too tight? 6. Are you having frequent bad headaches? 7. Have you had a cough for more than 2 weeks or a cough with blood?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	5 of 7 Answers Correct	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4 of 5 Answers Correct	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2. When you examine a pregnant woman, what are 5 abnormal signs you should check for? Answers: 1. Observe eyes, gums, and skin for paleness. 2. Feel abdomen to determine if baby is sideways in womb. 3. Squeeze hips together to determine if there is pain. 4. Observe face and hands for swelling. 5. Measure height by using reference mark on dai (145 cm) to determine if height is under 145 cm.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4 of 5 Answers Correct	<input type="checkbox"/>	<input type="checkbox"/>

69

The principle of Criterion Referenced Instruction is illustrated in the evaluation form. Each test question has the criteria for passing. Thus each student receives a pass or fail on each question, and the number of questions answered correctly (criteria satisfied) becomes the score of the student. As will be demonstrated later, the group analysis using this format gives extremely good information about the aggregated data - that is, the whole class. So the evaluation is useful for individual scoring and for group analysis.

The program also uses three non-test measurement instruments. These are listed below:

- . The anecdotal record
- . The checklist
- . The rating scale

The anecdotal record is a factual report of a significant incident in a student's performance.

For example:

The dai, Gul Bibi, was observed by me at the Basic Health Center during her 5th week of training. She was examining a pregnant woman who came for a check-up. While talking with the woman, she found that the woman had been coughing for three months. The nurse said not to worry about it, but Gul Bibi was worried and called the doctor who found tuberculosis. Gul Bibi's performance was excellent in both diagnosis and in being concerned enough about her patient to ask the doctor, even though the nurse said not to worry.

Signed

Nurse Gulgotai
Supervisor

The usefulness of the anecdotal record depends on the skill of the observer. Single anecdotes are seldom valuable, but anecdotes by many different observers are very valuable in assessing performance.

The checklist is a list of words, sentences, phrases, or paragraphs describing specific aspects of behavior to be evaluated during observation of a student at work.

For example:

Form OBV-CC-1		DAI TRAINING-CHILD CARE SECTION		Dai Name <u>Maria</u>	
OBSERVATION ON PATIENTS					
RECOGNITION OF ABNORMAL SIGNS					
Abnormal Signs	FIRST WEEK		SECOND WEEK		Comments
	Recognized	Not Recognized	Recognized	Not Recognized	
Very Sick Child					
Fever					
Rash					
Swelling					
Full Soft Spot					
Stiff Neck					
Red Eyes					
Red throat With pus					

The checklist must contain the critical skills to be evaluated. When constructing a checklist, think of the skills mentioned earlier:

- . Recall
- . Discrimination
- . Synthesis
- . Manipulation
- . Speech
- . Non-verbal communication

The rating scale is a checklist with judgments added.

For example:

<u>Medical History-Taking Skills</u>	Unsatis- factory	Poor	Average	Good	Excellent
Obtaining information from the patient	----- ----- ----- ----- -----			✓	
Obtaining information from other sources	----- ----- ----- ----- -----	✓			
Showing consideration for patient's condition or feelings	----- ----- ----- ----- -----				✓

The advantages of the rating scale are that it gives more information than the checklist.

The disadvantages of the rating scale are that judgments vary among observers. Four types of judges may be picked:

- . Experts (e.g. teachers)
- . Peers (e.g. students)
- . Clients (e.g. people upon whom the service is performed)
- . Self (e.g. the student himself)

Ratings tend to vary within judging groups and between judging groups, but the best use of rating scales involves judges of all four types.

Interpersonal Skills: The dai program has also used interpersonal evaluation which is evaluation of communications skills (speech and non-verbal communication). The dais were sensitized to the importance of communications through health education training with emphasis on communications processes. The dai actually discussed how people change their ideas and practiced communications methods on themselves and on patients. Examples of interpersonal evaluation indicators are shown on the following page.

Interpersonal process evaluation can be done with a checklist. The following example gives illustrations of some dimensions of interpersonal processes that can be evaluated.

Effectiveness of Dai-Patient Relationship

A. Showing Concern and Consideration

Component Skill Categories

1. Showing personal interest and concern
2. Acting in a discreet, tactful and professional manner
3. Avoiding needless discomfort, alarm or embarrassment
4. Speaking honestly to patient and family

B. Relieving Patient or Family Tensions

Component Skill Categories

1. Reassuring or calming
2. Explaining condition, treatment or prognosis

C. Improving Patient Cooperation

Component Skill Categories

1. Persuading patient to undertake needed care
2. Insisting or remaining firm about needed care

Responsibility as a Trained Dai

A. Accepting Responsibility for Welfare of Patient

Component Skill Categories

1. Heeding the call for help
2. Devoting necessary time and effort
3. Meeting commitments
4. Insisting on primacy of patient welfare
5. Delegating responsibility wisely

B. Recognizing Professional Capabilities and Limitations

Component Skill Categories

1. Doing only what experience permits
2. Asking for help, advice or consultation
3. Following instructions and advice
4. Showing conviction and decisiveness
5. Accepting responsibility for own error

C. Relating Effectively to Other Health Persons

Component Skill Categories

1. Supporting the actions of other health workers
2. Maintaining open and honest communication
3. Helping other health workers
4. Relating in discreet, tactful manner
5. Respecting the physician's responsibility to his patient.

Interpersonal skills evaluation is extremely important in knowing that the trained dai interacts with patients in such a way as to increase her effectiveness and her number of clients.

Group Evaluation: The dai curriculum and its testing methods were designed for easy group evaluation. Group evaluation is important for the following reasons:

- . Assessing strengths and weaknesses of particular classes
- . Assessing the performance of different training teams
- . Assessing the strengths and weaknesses in the curriculum which require modification

One group evaluation form is shown on the following page. It can be used to analyze both pre-tests and post-tests and also the basic course or continuing education (where all dais undergo thorough retesting to check their skills about one year after the basic course).

Of importance is that the curriculum can be evaluated by content areas or by process areas. This is illustrated below.

PREGNANCY CARE CONTENT
EVALUATION AREAS

1. Antenatal Care (ANC)
2. Labor and Delivery (L&D)
3. Post Partum Care for the Child (PP-C)
4. Post Partum Care for the Mother (PP-M)

PROCESS EVALUATION AREAS

1. History-taking
2. Physical Examination
3. Diagnosis
4. Treatment
5. Health Education

Average scores for this class evaluated during continuing education for both content analysis and process analysis are shown on the form. It can be seen that the dai were weakest in Family Planning and in History-taking before continuing education, but were above after continuing education. This information is compared with other classes. If the weak trends hold, the curriculum is analyzed in these areas, revised, and field-tested until improvements occur.

Basic Course

BASIC EVALUATION FORM

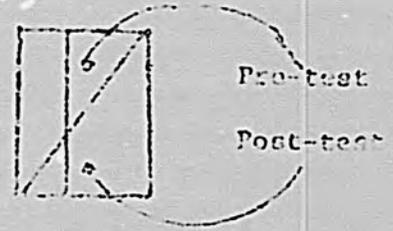
Continuing Education

Presidency of Basic Education
Basic Training Curriculum (Pregnancy/Health Ed)

Basic Course Evaluation Form (Pregnancy/Health Ed)

% Students Passing Basic Training Post-Test

	ANC	EDU	PHS	HTS		
	76	86	67	90		80
History	100	100	100	--		98
Physical Examination	85	71	76	95		82
	100	100	100	--		99
Diagnosis	100	100	100	90		98
	--	--	--	--		98
Treatment	100	100	100	100		100
	--	--	--	--		100
Health Education	100		76	100	48	81
	--		100	--	97	99
Average	92	89	84	95	62	97
	100	100	100	95	97	



85 Minimum Standard

75

Class Batch 1
 Location Balkh
 Date of Training July 1976
 Evaluator Raza

Comments on Pregnancy/Health Ed Section
 This class had no manual or cassette or any other way to review. The basic course was ill conceived. Considering no review materials, they did well.

Traditional Midwife Training Program
 Presidency of Basic Health Services
 Ministry of Public Health
 Democratic Republic of Afghanistan

As a matter of interest, this particular continuing education evaluation (along with the child care evaluation not shown) pointed up the need for dais to have some reference material to study during the interim periods when they were in practice. Based on this data, a manual was developed that could be read by a literate member of the dai's family so she could refresh her memory.

As the dai program expands, supervision of the teachers becomes a critical factor in the rate of expansion. Quality must be maintained if decentralized training is to exist on a large scale. This evaluation method allows program managers to compare training teams. For example, if Nazaneen's team over five classes has an average post-test score of 86 while Nasima's has 96, then the program management staff should investigate why Nazaneen's performance is lower. Supervisory personnel can observe her team's teaching until scores improve.

Thus the curriculum and the evaluation systems are synergistically designed so that analysis is easy and modifications in the training or supervisory process can result in constant program improvement.

Teacher Training

Teacher training or staff development was discussed in a previous section.

Good Recruitment and Selection Methods

Dai recruitment is based on securing approval of government representatives and village leaders before attempting to influence the dai herself. The Dai Recruitment Team first visits the important officials (such as the Provincial Governor or the Woleswal) in the small town where training usually takes place. If the local official agrees to participate in recruitment, he then sends out a message to the important village leaders in his region. After the village leaders have assembled (in the governor's or woleswal's office), the Dai Recruitment Team explains the program to them and answers their questions. The village leaders are then asked to return to their villages and help choose Dais for the program. The exact starting date and place for the Dai Course are also explained to the leaders so that the Dais will know where and when to go for the Course. In addition, the Dai Recruitment Teams visit those large villages located too far away from the training site for the village leaders to have attended the meeting. When the Dais come to the training site to begin the course, each is interviewed by the Dai Recruitment Team.

If the woman has not had extensive experience delivering babies, if she is too old or senile, or if she is sick, she is rejected for the course.

The experience to date in recruiting over 540 Dais can be summarized as follows:

- . Despite great concern at the program's outset that Afghan village traditional birth attendants (Dais) would be difficult to recruit, this has not turned out to be the case. Although Afghan village men are highly protective towards their women, recruitment targets thus far have always been met. There are several possible explanations for this. Most Dais are older, so that village men may not be as concerned about protecting them as they would be about younger women, although, as the program has become well known, the age is dropping and women in their early 30's are common. Another explanation is that the village men are reassured that the women will be very safe living (in most cases) in a rented house surrounded by a protective wall, with every attention paid to their safety and comfort.
- . The most serious difficulties in recruiting Dais have been political, particularly in 1979. Because of a long-standing, traditional mistrust that exists between rural and tribal Afghans on the one hand and the central Afghan government on the other, many villagers are afraid that a government-sponsored program for training Dais has some other, more sinister, purpose. This problem has not been insoluble, and repeated visits to a village by an obviously sincere recruitment team tend to soften local suspicions.
- . Perhaps the key factor in gaining village acceptance was gaining the trust and confidence of village men. Although Afghanistan has many ethnic groups, rural villagers share fairly common views about the role of women. The predominant view is that females should be secluded once they reach puberty and should not spend time with adult males outside of their family structure. This is expressed in varying degrees in different parts of the country, but the effect is that women usually remain within their housing compounds unless working with their husbands in the field, washing clothes, bringing water, or doing other domestic activities. In fact, it is difficult for women to go to the Basic Health Center, even if accompanied by their husband. The five week training course required many dai to leave their homes for the first time! Men were "won over" in the following ways:

- . Older women were recruited (30-60 years old) in early classes.
- . The dai were transported from their village (or near their village) to the training site which was within the general region of their homes (mobile training sites).
- . The training site was in a walled compound and men, other than the training staff, were not allowed in (including husbands who could only come to the door of the compound!!).
- . When the women left the compound, they were usually in a vehicle and remained in chadri.
- . Women only left the compound to go to the hospital, basic health center or family guidance clinic.
- . The dais were trained separately from any male village workers.
- . After training, the dais were transported back to their village.
- . Another lesson learned during Dai recruitment efforts has been that local Afghan officials should not attempt recruiting of Dais. Rather, a well-trained Dai Recruitment Team (based in Kabul or at a Regional Training Center) should have that responsibility. In one province where the Governor and other officials took responsibility for Dai recruitment, many of the women selected turned out to have had no experience delivering babies and were found to be relatives of the officials doing the recruitment.

Good Training Environment

A good training environment is necessary to maximize learning. The Dai Basic Training Courses were extremely careful to develop and maintain a protective, supportive environment during five week training courses.

Many Dai had never lived away from their families. Many had never travelled even the relatively short distances to the training sites which, using mobile training teams, were always located in rural BHCs or small towns that served a surrounding rural community. Most dais were in chadri, a piece of clothing that completely covered the village woman in public, including her face and head. They were extremely shy about public travel.

The dai trainers usually rented a house in the rural area or in a small town. The house had a surrounding wall and the teachers and students lived together. The basic didactic training, using the active learning techniques discussed earlier, took place in the rented house, or outside the house but inside the protective wall. The dais were thus relieved of having to study in public. The dais were never trained with male students, although male supervisors could visit without difficulty.

For patient-related training, the dai travelled by vehicle to the Basic Health Center or small hospital where the patients were. During Maternal and Child Health days at BHCs or small hospitals, there were usually a large number of women and children. In that public environment dais were comfortable as other women were present. Based on these methods, the dais were comfortable in their training environment.

One innovation of the program has been to also use trained dais as trainers. They are able to relate to fellow villagers and to bridge any communication gaps between the other dai trainers and the students. Their value as role models can not be over-emphasized as they demonstrate the government's acceptance of well-trained dais. They also demonstrate that intelligent village women, even if illiterate, can make important contributions to their country.

Living together for five weeks encouraged an intense socialization process among the dais and trainers. These social bonds helped each dai be more comfortable with learning, particularly emotionally-laden material such as discussions on sexual issues and family planning. This socialization process prevented the more urban nurse-midwife trainers from stressing the student role too much.

The training environment also fostered reflection and discussions, as discussed earlier. While relaxed in the evenings, dais could discuss their experiences with other dais, reflect on their new skills, and interact with teachers who share cooking and clean-up duties. The importance of this group interaction was very important to the success of the program.

Support of the Graduate

The newly graduated dai must readjust to her home environment after training teams. The drivers first took them to the Basic Health Center nearest their home to meet the doctor. The doctor had often participated in their recruitment, but it was important to know that he understood that a successful graduate had returned.

Within one year after training, the dai returned to a training site for one week of continuing education. The support program would have been improved by twice yearly continuing education, but manpower and financial constraints prohibited this. During the continuing education week, a detailed plan is followed.

CONTINUING EDUCATION WEEK ACTIVITIES

- Day 1: Give the post-test from the basic course; Spend 1/2 day on discussions of problems faced by the dais in their work.
- Day 2: Review of entire basic course
- Day 3: In-depth review of weak areas as found by the post-test; Interview each dai individually about her problems and successes.
- Day 4: New skills development using continuing education modules
- Day 5: Final discussions about what it's like to be a dai working in the village.

The objectives of continuing education week were threefold: first, to assess skill decay and reteach areas where it has occurred; secondly, to support the work and emotional life of the dai working in her village; and thirdly, to conduct interviews about dai practices, utilization, and feelings about her work. Taped interviews have been done to assess the dai's feelings about the following areas:

TAPED INTERVIEWS TO ASSESS FEELINGS

- . What happened to you when you returned to the village? (six questions)
- . How do people feel about you now? (eight questions)
- . What is the best way to introduce you to the village? (one question)
- . What are your biggest problems in your work? (one question)
- . What is the best part of your work in the village? (one question?)
- . Are you happy with the amount of money you receive from your work? (one question)

- . What is your relationship with the BHC staff?
(seven questions)
- . How could we improve the Dai Training Program?
(eight questions)
- . How do you feel about yourself? (five questions)

In this way, the program hopes to understand the dai and her problems in daily living and work. From this data, the training can be made more realistic and more supportive.

Feedback System for Improvements

The dai field evaluation system is still in the research stage. Certain methods have been used and other areas are in the design phase. Field evaluation is used to evaluate the practices of trained dais in their village and to assess the dai herself - her type of practice and her feelings toward her work. Development of the field evaluation program is the primary developmental effort of the National Dai Program Staff during 1979. It has been hampered so far by lack of security in the rural areas.

Two instruments have been tested and used so far. One is the Dai Utilization Survey. In this survey, assessments were made of the type of practice the dais had and also how busy they are. Early data showed the following:

WHAT DAI DO IN THE VILLAGE

In a two week period, the following will occur:

87% of dai will see one or more sick children
(95% of the time in the child's home)

67% of dai will see one or more pregnant women
(87% of the time in the woman's home)

52% of dai will find at least one high risk
child that they refer to the BHC

48% of dai will advise at least one woman
about family planning

33% of dai will do at least one delivery.

In a one year period, dai do the following:

	<u>BUSY DAI*</u>	<u>AVERAGE DAI</u>
Visits related to pregnancy	203	125
Visits related to child care	156	135
Visits related to family planning	152	78
Referrals of high risk children to the BHC or hospital	52	20 (86% went)
Deliveries	31	17
Referrals of high risk mothers to the BHC or hospital	3.8	2.1 (74% went)

In a one year period, the activities of the dai are as follows:

	<u>BUSY DAI</u>	<u>AVERAGE DAI</u>
Pregnancy related activities	40%	37%
Child care related activities	30%	40%
Family Planning activities	<u>30%</u>	<u>23%</u>
	100%	100%

This preliminary information will be collected on larger samples of dais. Group profiles would be developed similar to the student evaluation methods. In addition, consultant help is underway to evaluate the villagers' feelings about the dais and how dais practice in the field. Anthropological and evaluation experts are assisting in this and results should be available in about a year if the rural security situation improves.

The objective of all field evaluation activities is to insure a happy, busy, trained dai doing high quality work for her fellow villagers.

Summary on Training Methods Section

The National Dai Training Program of Afghanistan has used a systematic approach to training and evaluation of its students that has produced a qualified primary worker of proven skills after five weeks of training. The careful development of the curriculum maximizes the amount of learning so that adult women with no prior schooling can progress rapidly but in a series of small steps. The evaluation methods insure skills and give information for improvement of the training process.

* Busiest 1/3 of Class.

In the summer of 1978, an United Nations Expert Team did an evaluation of the program. The training specialist had these words to say:

"In general, the programme is sophisticated and well-structured, very complete in terms of technical/medical content. The training plan and other related materials are the most impressive the writer has ever seen."

The National Dai Training Program of Afghanistan has been an unqualified success in demonstrating that villagers can learn and have much to contribute. Afghan leaders have realized that the strength of the country is in its people, and the National Dai Training Program has contributed to this goal.

SUMMARY

The development and stabilization of the National Dai Training Program has been dependent on the creation of a sound organization capable of securing and maintaining authority and resources. The development of program leadership, clear organizational objectives, sound technical training methods, consistent with the needs of society, and a well-defined and functional organizational structure have contributed to the success of the program thus far.

After two years, the program is fairly stable. The MOPH constituency remains supportive even though the government has changed. As of now, organizational leadership of the program is stable under the new government. Power battles over program control may continue, but the organizational structure of the program seems likely to remain intact. Other training organizations have not been sanctioned. The donor community remains pleased with the program and has supported expansion as requested by the government. Some donors are interested in having dai programs in other countries, based on experiences in Afghanistan. The village constituency, even with political turbulence, has continued to accept this program as a beneficial one.

Program stabilization has been greatly enhanced by international recognition. Visits to Afghanistan have been numerous by "experts" in health. Senior officials from WHO, UNDP, UNFPA, UNICEF, World Bank, USAID, and other agencies have visited the dai program and have enthusiastically endorsed it. Two publications about Afghan dais have appeared in international journals and the program was discussed at the WHO/UNICEF World Conference on Primary Health Care held at Alma Alta, U.S.S.R.

The National Dai Training Program has contributed toward the specified needs of society in these ways. First, it improves health in the village, Secondly, it upgrades an indigenous resource of the village. Thirdly, it contributes toward a specialization of labor within the village, a necessary prerequisite to development. Fourthly, it contributes toward changing the role and status of women, another necessary prerequisite for modernization. Fifthly, it provides role models for young girls in the village.

The National Dai Training Program also has contributed to changing the image of the villager as a tradition-bound unteachable person. The dais have, overall, been intelligent, eager to learn, and eager to adopt new ideas which make sense to them. Some dai have been trained as teachers and can now

use modern teaching techniques to assist other dai to learn. The National Dai Training Program has helped Afghan decision-makers to realize that the strength of the country lies in its citizens and that minimal investment costs give high benefits when applied to rural people of Afghanistan.

Problems will always occur, but the National Dai Training Program seems likely to continue as an integral part of an improved rural health care system for Afghanistan. So far, over 500,000 rural people have benefitted, and millions more are likely to do so.

JWL:gc
6/5/79

APPENDIX 3

Excerpts from

"A HEALTH SURVEY OF
THREE PROVINCES OF AFGHANISTAN:
A Tool for the Planning of Health Services"

(MSH 1977)

1. Introduction - The Management Process in Health Programs

Two main components of the management process are the analysis of the nature of the problem and a description of the resources available to meet that problem. Each requires a different type of information. The broad outline of the nature of health problems in rural Afghanistan has been known for some time. (1-4) Infant and maternal mortality, childhood illness, and infectious diseases have high prevalence in rural areas. The exact nature and cause of these problems, however, have been less well studied and appreciated. How often does a household have an illness requiring some form of treatment? What are the most common diseases and health problems, and which are more frequently associated with death? What are the patterns of illness by age, sex, or location? Which illnesses are perceived as being the most serious by villagers themselves? What are the underlying causes of the problem, including such factors as sanitation, nutrition, childrearing practices and lack of basic understanding of the cause and prevention of disease? The health survey of three (3) provinces of Afghanistan was specifically designed to obtain information on the nature of rural health problems in a form that would be useful to the Ministry of Public Health in the planning and management of rural health services.

Likewise, only limited information has been available concerning the second component of the management process - the resources available to meet the problem. For instance, the MOPH has long been aware that a disproportionately large percentage of its annual budget has in past years been allocated to support health services which have grown up within the cities. Even a casual analysis of the distribution of health personnel in the country vividly demonstrates the urban-rural imbalances. Large segments of the rural population, estimated to be 85-90% of the total population, are known to be beyond the convenient reach of existing government health services. Considerably less is known, however, about the actual pathways that a villager follows in the event of an illness. Where does he go? How does he decide on the "best" alternative? How much does he pay? How far must he travel? How satisfied is he with the care that he receives?

In addition, little is known about a villager's attitudes toward the provision of a new type of health service - the village health worker (VHW). Would he be willing to support new programs to make basic health information and services available at the local level, such as the training of a VHW? If so, how should such a person be selected and trained? Would the person have to be paid? By whom? How? One objective of this survey was to gather information on the health resources, both traditional and modern, which are now available to and used by rural people and to determine the feasibility of introducing innovative health programs at the village level.

The method used by the Ministry to obtain the information needed for its planning was a direct one. It asked the villagers themselves. Persons living in 17 villages of three different provinces, Ghazni, Helmand, and Baghlan (See Figure 1) were interviewed to obtain information about the health of their household and about the steps that they take when a member of that household is sick. The findings of this survey are divided into three sections in this report. The first provides a description of the characteristics of the populations studied. The second section analyzes the nature of the health problems confronted in the Afghan village. The last section describes the health behavior of rural populations, examining health resources presently used by villagers, as well as others with potential for use in a village health scheme.

It must be appreciated that the step of the management process which is carried out after the information has been collected and studied - the linking of known resources to known health needs - is often the most difficult one. It is a step, however, which the Ministry of Public Health has already begun. Over the past five years, the Ministry has established more than 100 basic health centers in rural settings. These are designed to provide the necessary infrastructure for rural health initiatives. In addition, the Ministry has designed a village health worker program, laid the groundwork to obtain village understanding and cooperation, and has trained two experimental groups of village health workers to deliver primary health care and health education in two pilot districts, Jaghori and Sarobi. An intensive evaluation of this program will be carried out during the first year. After the Ministry has developed successful training and managerial methods, the program will be expanded to other rural areas. The goal of the Ministry is 1500 VHWs for 1000 villages within five years. (5) Beyond these efforts, other new approaches to reaching remote locations with health services include an experimental program for the training of Dais - traditional birth attendants - and initial planning for a village drinking water program to capitalize on villagers' interest in this health problem.

Finally, it should be emphasized that management is a continuing process; last year's answers may not be adequate for this year's problems. A solution which has proven adequate may be made even better. Seldom are solutions final. Thus, the manager's need for information is continual. It is hoped that this report will demonstrate the role that village surveys can play in providing the needed information, and that it will pave the way for additional such studies to be used in managerial decision making.

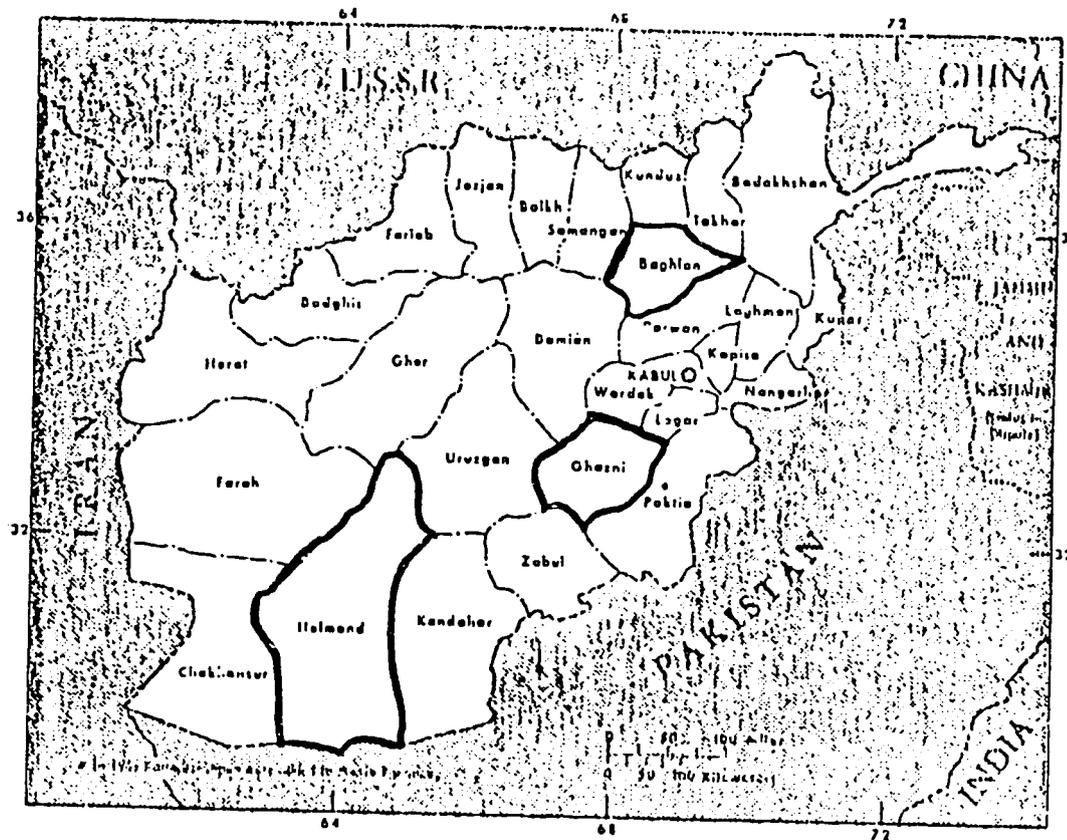


Figure 1
Map of Afghanistan with Sample Provinces

SUMMARY

Implications of Survey Findings for Rural Health Programs

Management is described as the process of using existing resources in the most efficient and effective way in order to solve a specific problem. This village health survey was conducted as a means of obtaining the information on health needs and health resources required to carry out the process of managing a rural health program. The most important findings of the survey and their implications for the planning of village level health programs in Afghanistan are summarized below.

Health Problems

1. Finding - Infants, young children and women share a disproportionately large burden of sickness and death in rural Afghanistan; more than one-half of all deaths occur to those under five; women aged 30-45 years have a rate of reported illness almost twice as great as men of the same age group.

Implication - Any village level health program should give special emphasis to the health problems of children and women. (Such programs might be carried out most effectively in rural Afghanistan through the training of women as health workers.)

2. Finding - A relatively small number of illnesses account for the major portion of illness and death in rural Afghanistan; three causes - respiratory illnesses, diarrhea/dysentery and jinns - account for over 50% of recent deaths and 60% of all recalled child deaths.

Implication - A health worker trained in the prevention and treatment of a few of the most common illnesses encountered could have a large impact on the overall health of a village.

3. Finding - With one important exception, namely malnutrition, the health problems as perceived by villagers themselves as being "most serious" are those which account for the greatest proportion of illness and death as determined by this survey; 56% of respondents named respiratory illnesses and gastrointestinal illness as the most severe problems they face.

Implication - Any village health program aimed specifically at the prevention and cure of the most serious health problems should receive a high degree of cooperation and support from villagers. Programs aimed at the very serious problem

of improving child nutrition may receive less initial support as malnutrition was not recognized as a severe problem by respondents.

4. Finding - Malnutrition is a severe health problem of young children in rural Afghanistan; fewer than 60% of children in any age group are classifiable as well-nourished according to arm circumference measurements; malnourished children had a reported rate of illness almost three times that of well-nourished children.

Implication - As malnutrition is an underlying factor in much of the childhood morbidity and mortality, it must be addressed both at the local level, through the development of village level programs aimed at improving child nutrition, and at the national level, possibly by the establishment of a National Nutritional Council to further investigate the prevalence of the problem, its causes, and alternative means of combating it.

5. Finding - Childrearing practices are one of the contributing factors in childhood malnutrition; eggs, meats and other high protein foods are reported as not being introduced into the child's diet until almost two years of age; children with illnesses such as diarrhea are frequently reported as being denied the foods they require.

Implication - A special priority should be given to the education of mothers in the feeding habits that will be conducive to the health and nutrition of their children.

6. Finding - While the actual and desired family size of rural Afghans is extremely large, the vast majority of villagers, 69% of males and 91.6% of females, are interested in learning about ways to increase the amount of time between births.

Implication - Given the interaction between intervals between births and the health of children as well as mothers, and the expressed desire of villagers for information on spacing their children, it is essential that any program whose objective is improved health have as a component increased information on family spacing methods.

7. Finding - Environmental conditions in the village also contribute to the prevalence of illness and are perceived by many villagers as being unsatisfactory; 80% of male respondents reported a readiness to contribute their labor to work with a government expert to improve village sanitation.

Implication - Programs to improve the village environment can be expected to receive high levels of community support

if adequate technical expertise is made available to guarantee the success of projects.

8. Finding - Those of lower socio-economic status tend to have higher prevalence of disease, infant mortality, and fertility.

Implication - The needs of a specific subsection of a village - the very poor - must be recognized, and programs that will include means of reaching the whole socio-economic spectrum of the population must be developed.

Rural Health Resources

1. Finding - The services currently utilized by rural Afghans are many and varied; in the year prior to the survey, households made an average of 17.5 visits to all sources of treatment, with an average of 3.63 different sources being consulted; both modern and traditional services were used, 60% having used a pharmacy, 50% a mullah, and 25% having visited a shrine.

Implication - There are currently many different sources that a villager can turn to when sick. In designing a village level health program, it is important to know the alternatives available and to work as cooperatively as possible with those who are already providing important health services to the village.

2. Finding - The amount of money now being spent by rural Afghans on health care is by both absolute and relative terms very large; the median annual reported expenditure is 1000 Afs. (50 Afghani = \$1.00); 7.4% of the estimated household income is spent on health.

Implication - As villagers are already spending large amounts of money for health services, they should be capable of supporting local health programs, such as a village health worker, provided that the programs have a demonstrated value to the village.

3. Finding - Medicines represent the single most expensive item in the villagers' health budget; 37.0% of the annual health expenditure is spent at the pharmacy, with an average per-visit cost of 248 Afs.

Implication - One of the greatest savings in the cost of health care to villagers could be made by increasing access to low cost, high quality medicines through programs carried out through existing pharmacies, BHCs, village shops or village health workers.

4. Finding - Villagers' satisfaction with the services currently available to them varies; 64.3% are satisfied with the BHC, but only 31% felt that the dokhan was an adequate source of medicines; one-third felt that the BHC was the best source of treatment outside of the household for an illness, while only .9% named the local private doctor; the most frequently mentioned health improvement needed was access to medicines.

Implication - The respondents report being quite satisfied with the services available through the basic health center except in its role in distributing medicines. The expressed desire of villagers for increased availability of medicines provides an indication that any program aimed at improving access to drugs would meet with a high level of village support.

5. Finding - Villagers are strongly supportive of the concept of a village health worker; 78% of males and 95% of females felt that a VHW was feasible for their village; a significant number of individuals were able to name a person, in many cases a woman, who they felt would make a good VHW.

Implication - Attempts to institute a VHW program can expect to be favorably received by villagers.

6. Finding - Informants agreed that VHWs should be paid but were divided on how he/she should be paid, 43% stating that the village should pay, and slightly more stating that the government should pay.

Implication - More evaluation based on actual experience will be required to determine whether villagers are able to support a health worker and to determine the best means for collecting the money in the village.

7. Finding - A relatively large percent (27%) of males stated that they would allow their wife or daughter to be trained as a VHW; 34% felt that it would be possible to find a woman from the village who would be able to leave the village for some duration for training.

Implication - In most villages it may be possible to recruit and train a woman as a VHW for the crucial role of working with mothers on the improvement of child nutrition and health.

8. Finding - Mobility of women is severely limited by the restrictions placed upon their travel; however 44% report being able to visit a BHC unescorted by a male. Almost half of the women listen to the radio at least once a week.

Implication - While the channels for the diffusion of information into the Afghan village are currently quite narrow, especially for the women, the potential exists for the use of innovative mass media radio techniques to improve maternal knowledge and child-rearing practices. The BHC exists as a legitimate object of travel for many women and can serve as an important educational center as well as a location for women to communicate with one another.

9. Finding - The opportunities that a household has for the care of its sick members, as well as its attitudes concerning what is appropriate treatment, are affected by its socioeconomic status. Likewise, opportunities for these households to receive information which would assist them in improving and maintaining their health appear to be more restricted than for wealthier households.

Implication - Plans for the improvement of village health conditions must take the heterogeneity of the village population into consideration; specifically, provision must be made to include access for the poor to health services in any program that is designed to make use of available village resources.

Conclusion

No research is useful unless its results are helpful to managers in making decisions that affect their programs. As such, the results of a study or survey must be relevant, understandable, and - of great importance - timely. The following table summarizes some of the immediate applications that the findings of this report have had, since the time that a preliminary report was available, for the planning of a village health worker program. As well, it presents in summary form some of the implications of the study for future Ministry of Public Health programs aimed at improving rural health.

The final test of the usefulness of the survey, however, will be found in whether or not it has served a role in accelerating the rate at which health standards in the Afghan village are improved.

TABLE 1

<u>CONCLUSIONS AND FINDINGS SUPPORTING CONCLUSIONS</u>		<u>PLANNING APPLICATIONS</u>	
<u>CONCLUSION</u>	<u>FINDINGS SUPPORTING CONCLUSION</u>	<u>IMMEDIATE APPLICATIONS TO VHW PROGRAM</u>	<u>PROBABLE/POSSIBLE FUTURE APPLICATIONS</u>
A. <u>The Health Problem</u>			
1. Infants, young children and women bear disproportionately large share of the burden of sickness and death.	Half of all deaths are under age 5 years, infant mortality rate 157; women aged 30-45 have incidence of illness twice men of same age group.	VHW training program designed to emphasize problems of children and of women. Commitment increased to recruit women whenever possible.	Infant Mortality Rate, Childhood and Maternal Morbidity Rates to be used in evaluation of the impact of village level health programs.
2. A relatively small number of illnesses, many preventable or treatable at village level, account for major portion of illness and death.	Respiratory illnesses, diarrhea/dysentery and jinns account of 50% of all recent deaths, and 60% of all recalled child death.	VHW trained to recognize and treat major health problems; treatment protocols & medical supplies standardized for specific therapy regimens.	Investigation into etiology of jinns; development of maternal tetanus immunization programs.
3. Health problems perceived by villages as most serious account for majority of illness; (except malnutrition and jinns which are not viewed as serious).	56% of respondents named respiratory illness and gastrointestinal problems as "most serious". Jinns and malnutrition not mentioned as health problem.	VHW trained in methods of obtaining village cooperation by eliciting felt needs and addressing answers to these; also taught importance of making villagers aware of unrecognized needs.	Role of VHW in village education; the BHC as a source of education for women.

CONCLUSION

FINDINGS SUPPORTING CONCLUSION

IMMEDIATE APPLICATIONS TO VHW PROGRAM

PROBABLE/POSSIBLE FUTURE APPLICATIONS

4. Malnutrition is a severe health problem among young children.

Less than 50% of children aged 12-60 months classifiable as well-nourished.

VHW training organized to stress the role of nutrition in illness and possible means of intervention.

More detailed nutritional survey to further define problem and underlying causes. Formation of a National Nutrition Planning Council.

5. Childbearing practices are major contribution to malnutrition.

Meats, eggs and high protein food reputed not to be introduced until 2 years; some children not fed during illnesses.

VHWs, especially women, taught food preparation, food values and methods of working with mothers to improve nutrition.

Radio programs designed to promote nutrition education; BHCs developed as nutrition training center for villagers.

6. Although desired family size remains large, men and women are both interested in learning about child spacing methods.

69% of men and 91.6% of women report being interested in learning about spacing.

VHW curriculum includes section on rationale and methods of family planning; male and female contraceptives included in VHW basic supply kit.

Female VHWs to promote contraception for maternal and child health objective.

7. Environmental conditions in village contribute to illnesses.

Many villagers perceive the sanitation facilities and drinking water supply to be inadequate; 80% men willing to contribute to improvement.

Basics of environmental sanitation taught to VHWs; technical backup provided to VHWs who begin village projects.

Specific environmental health programs of MOPH working directly with villagers.

96

<u>CONCLUSIONS</u>	<u>FINDINGS SUPPORTING CONCLUSION</u>	<u>IMMEDIATE APPLICATIONS TO VHW PROGRAM</u>	<u>PROBABLE/POSSIBLE FUTURE APPLICATIONS</u>
B. <u>Village Health Resources</u>			
1. Services currently utilized are many and varied, modern and traditional.	Households average 17.5 visits to sources of treatment a year; average of 3.63 different sources. 50% of household use pharmacy, BHC and mullah during year.	Selection process for VHWs includes review of those currently providing health services; VHW curriculum includes discussion of total resources available.	Retraining of traditional birth attendants; promotion of shops for sale of medicines.
2. Household health expenditure now very high in relative and absolute terms.	Median reported household health expenditure is 1000 Afs; 7.4% of the estimated household income.	VHW program will test feasibility of full village support; various payment schemes will be tried including fee-for-service and profit from sale of drugs.	Charge for services and medications provided at BHCs.
3. Medicines represent single most expensive item in health budget.	37% of annual health expenditure spent in Pharmacy; average 248 Afs. per visit.	Basic essential medicines to be provided to VHW at start; resupply through BHC at minimal cost; control over amount that can be charged set by village leaders or by MOPH.	Continued efforts to reduce cost of drugs through improved national purchase and production schemes.
4. Great variation in villager satisfaction with available services; improvement desirable in many services.	64% satisfied with BHC; only 31% with medications available through village shops.	Access to medicine to be one objective of VHW program; BHC referral and supervisory system for VHWs.	Use of shops for medicine distribution; government support for services now considered valuable, such as bone-setter.

<u>CONCLUSION</u>	<u>FINDINGS SUPPORTING CONCLUSION</u>	<u>IMMEDIATE APPLICATIONS TO VHW PROGRAM</u>	<u>PROBABLE/POSSIBLE FUTURE APPLICATIONS</u>
5. Village Health Worker concept seen as feasible by many.	78% of men and 95% of women felt VHW would be appropriate and feasible in their village.	Current program will evaluate those conditions that contribute to the success of VHW program.	Results of evaluation to be used in expansion of VHW program.
6. VHWs will have to be compensated; exact mechanism will depend on characteristic of village.	80% felt VHWs would have to be paid; 43% felt the village should pay; 47% felt that the government should support.	Current program to experiment with payment schemes.	Plan future VHW payment in accordance with evaluation of current program.
7. In most villages it should be possible to recruit and train women as VHWs.	27% of men would allow their wives or daughters to be VHWs; 34% felt it would be possible to find female VHWs in their village.	Background research being done to determine methods of recruiting women and obtaining village understanding of their roles. 6 women recruited from first 2 experimental sites.	Each village to have at least one female VHW.
8. Mobility and channels of communication for village women is severely limited. BHC is a potential legitimate meeting and education center. Radio has immense potential for diffusion of information.	50% of women reported listening to radio; only 3% of women claimed to be able to visit friends unescorted in their own village; 44% reported being able to visit BHC.	Female VHW role designed to emphasize the diffusion of information to village women.	Mass media education via radio. Use of BHC as center for education and communications.
9. The socio-economic status of household influences health standards and behavior.	The annual health expenditure of household has a range from 0 to 5000 Afs. Poorer households have higher rates of illness.	VHW remuneration schemes planned to take into consideration extreme poverty of many households.	Nutrition studies to determine roles of poverty and lack of education in malnutrition.

83

11. Methodology

The provinces selected for the study were determined by the Ministry of Health in accordance with its overall scheme for the expansion of rural health services. Within each of the provinces selected - Ghazni, Helmand and Baghlan - two established basic health centers (BHCs) were chosen as focal points for village selection. Selection of BHCs was based upon length of operation (and, thus, their potential historical impact upon the community), as well as upon the desire to achieve a representative variation of geographical, social and economic conditions within each province. Village selection was accomplished by preparing grid maps of areas adjacent to the selected BHCs and by random selection of villages at 1 km., 10 kms. and 15 kms. from the health center. Within each village, household selection was done systematically using prelists of households developed by a random start method. Depending upon the size of the village every second or third household on the prelist form was sampled. Within a household, an attempt was made to interview an adult male and an adult female, preferably, but not exclusively, a husband and a wife. Respondents were required to be adult (over 18), permanent members of the household, with preference being given to heads of household and their spouses. Only one wife was interviewed per polygamous marriage. The discrepancy between the number of female interviews conducted (486) and the number of male interviews (237) primarily reflects the fact that during the interview period - August to October - many men were engaged in agricultural activities at a distance from their village.

All interviews were carried out by trained male and female interviewers using separate interview forms for men and women which had been designed, pretested and revised before the start of the survey. Male and female questionnaires contained both overlapping and different questions. For example, only women were asked questions concerning child rearing behavior, while both men and women supplied information about illnesses, health expenditures, and attitudes towards health services. A team of two female interviewers met with each female, while a single male interviewer was used for the male interview. Each interview required between 40 and 50 minutes to complete, a length which did not appear to affect cooperation, as judged from respondents' compliance. No effort was made to coerce interviewee cooperation. For example, in one of the sample villages originally selected, suspicion and lack of cooperation made it necessary to seek an alternative sample site. Respondents were given no rewards for participation, and care was taken to explain to the village that participation in the survey did not imply a guarantee of any future government help.

Interviewers were trained over a two week period and received both classroom instruction, field practice and performance evaluation. During interviewing, quality control checks were carried out by the field team supervisor and by the training staff. The number of interviews completed during the three months of field work is shown in Table 2 below.

Province	Village	Female Interviews	Male Interviews	Total Interviews
Ghazni	Khonadai	32	27	59
	Khonsal Kosh	36	11	47
	Jabaar Khel	22	17	39
	Khanadara	21	9	30
	Bakhtyar	30	16	46
Total Ghazni Province		141	80	221
Baghlan	Tawashakh	26	12	38
	Khoja Khede	31	9	40
	Kona Qala	27	16	43
	Qashlak Qala	30	14	44
	Na Bahar	29	14	43
	Ghazmarq	27	10	37
Total Baghlan Province		170	75	245
Helmand	Loye Bagh	31	16	47
	Nawlicbad	30	14	44
	Saidabad	31	13	44
	Nowzad	27	10	37
	Konjak	32	11	43
	Kanghai	24	18	42
Total Helmand Province		175	82	257
Survey Total		486	237	723

TABLE 2 - Distribution of Interviews by Province and Village

Coding of questionnaires was done by Ministry of Public Health personnel with the supervision of the staff of the Management Team. Key punching and data preparation were performed by Afghan Business Machines in Kabul, and data analysis was done in Cambridge, Massachusetts by the staff of Management Sciences for Health, Inc. The use of partially processed questionnaires

and the cooperation of all those involved in the data processing made it possible to produce a preliminary report of survey findings within three months of completion of the survey, a "turn-around" time which allowed the results of the survey to be used in the planning of the village health worker program.

As one goal of the survey was to obtain information on the nutrition and growth of village children, all children aged one to four years in a household were weighed using hanging Salter scales. In addition, each child's height and midarm circumference was determined using standardized measuring instruments. (Appendix A discusses the use of arm circumference measurements in nutrition surveys.)

The exchange rate at the time of the survey was 50 Afghani (Afs) = \$1.

III. Findings of Survey

A. Demographic Profile of the Population Sampled

It is often useful to describe the characteristics of a population sampled, including age and sex distribution, the birth rate, death rate and size of household. A thorough description of a population makes it possible to compare the findings from surveys carried out at different times or different locations. For example, only if important characteristics of two populations were known to be very similar would it be legitimate to make comparisons of such basic measurements as birth or mortality rates. An analysis of demographic data also helps in identifying and understanding regional differences in population over time.

Additionally, demographic information assists in determining whether the population sampled was genuinely representative of the entire population. As an extreme example, any rural survey which included only maliks or large landholders as informants would immediately be suspect as not being representative, and its results would have to be interpreted in light of this potential bias.

1. Characteristics of the Population

The population surveyed included 3483 individuals living in 486 households. Of these, 51.2% were males. The mean age of household members was 21.0 years, with 49.4% of the population below the age of 15 years. Only 3.9% were over 65. The dependency ratio of the population - those under fifteen years of age or over 65 as a percentage of those 15-65 years of age - was 114. A breakdown of the population by age and sex (Figure 2) demonstrates the relative decrease in females over males in the age groups 35 years and over. This differential survival, which has been documented by the national demographic survey as well, (6) may possibly be attributable to the effects of continued childbirth on maternal health. Thirty-eight percent of all household members were married at the time of the survey and 2.5% were widowed. Among the 486 female respondents, 23.0% reported being a co-wife. The mean number of wives per husband was 1.24.

Educational levels and literacy of household members over 15 years of age was as follows:

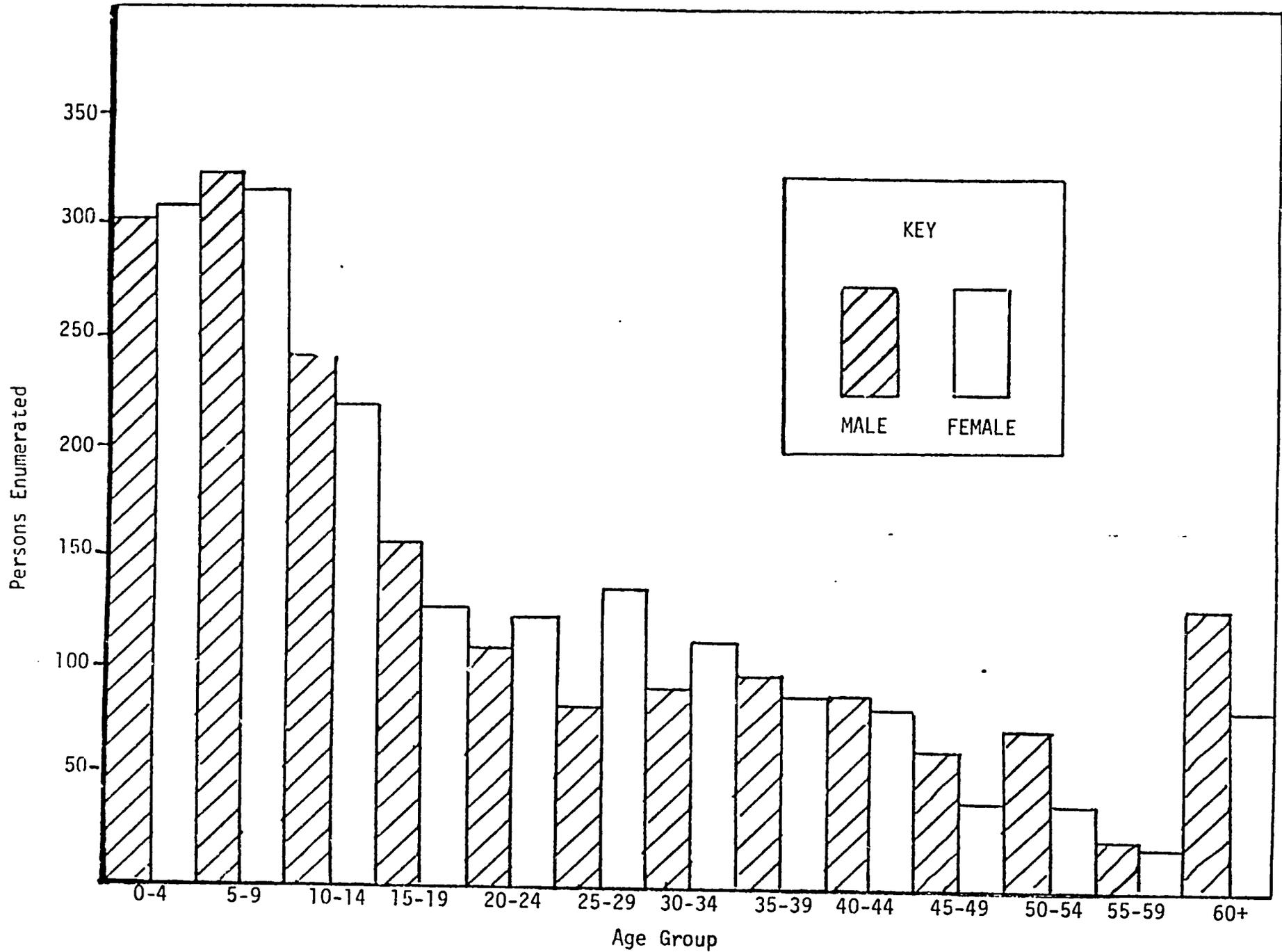


Figure 2 - Age and Sex Profile of Population Studied

	<u>Mean Years of School</u>	<u>% Having Attended School</u>
Male	1.99	26
Female	0.27	5

Thirty percent of the adult men and 3.5% of the adult women were reported as being literate.

The principal reported occupations of males over fifteen were:

Farmer	47.2%
No Occupation	12.6%
Student	6.3%
Laborer	5.7%
Shopkeeper	4.3%
Mullah	2.8%
Clerk	2.5%
All Others	18.6%

The mean age of male respondents to the questionnaire was 46.5 years, while that of female respondents was 35.1 years. Almost 90% of men interviewed were heads of households and 86% of the women were wives of heads of households. In 98% of the 237 households in which a male was interviewed, a female was also interviewed.

2. Household Characteristics

As mentioned earlier, there were 3483 individuals enumerated in the 486 households in the sample; thus, an average of 7.17 persons per household. The mean number of rooms per household was 2.25, with the distribution broken down as follows:

Number of Rooms	Percent of Households
1	38.9
2	31.1
3	14.8
4	7.3
5	1.8
6	3.8
7 or more	2.3

The average number of persons per room was 3.18, a figure which indicates extreme crowding.

As described in the methodology section, villages were selected at varying distances from basic health centers in order to allow for comparisons in health-seeking behavior. Distribution of villages by distance from the health center is:

<u>km</u>	<u>Percent</u>
1	40%
10	35%
15	25%

A number of previous surveys have demonstrated the difficulty in obtaining reliable information on the economic status of households in Afghanistan. Thus, in this survey no attempt was made to obtain information on the annual household income. However, due to the importance of socio-economic status as a determinant of illness and health behavior, two indicators were used. The first was the number of rooms in a household and the "crowding factor" - i.e., the number of persons per room. The second indicator was a subjective one. Female interviewers were asked at the completion of each interview, "How would you judge the economic standard of this household in relation to others in the village?"

Classification of Households as Perceived by Interviewers

Extremely poor	34.7%
Poorer than average	38.6%
Average	20.4%
Above average	4.8%
Extremely wealthy	1.5%

While a disproportionate number of households were rated as being poor by interviewers, the classification system does allow for the division of households into three very nearly equal categories: extremely poor, poorer than average, and average or above. A socio-economic standard (SES) was determined for each household using a formula which weighs both the "crowding factor" and the interviewer's evaluation of the household's economic standard. The SES with classifications of very poor, poor, and average or better, is the standard which has been used throughout this report to make socio-economic comparisons.

3. Fertility, Mortality and Growth Rates

Female respondents, mean age 35.1 years, had an average of 3.93 living children and 5.82 children ever born. The number of children living and ever born for women in five-year intervals is, however, a better indicator of overall fertility. This data is presented in Figure 3.

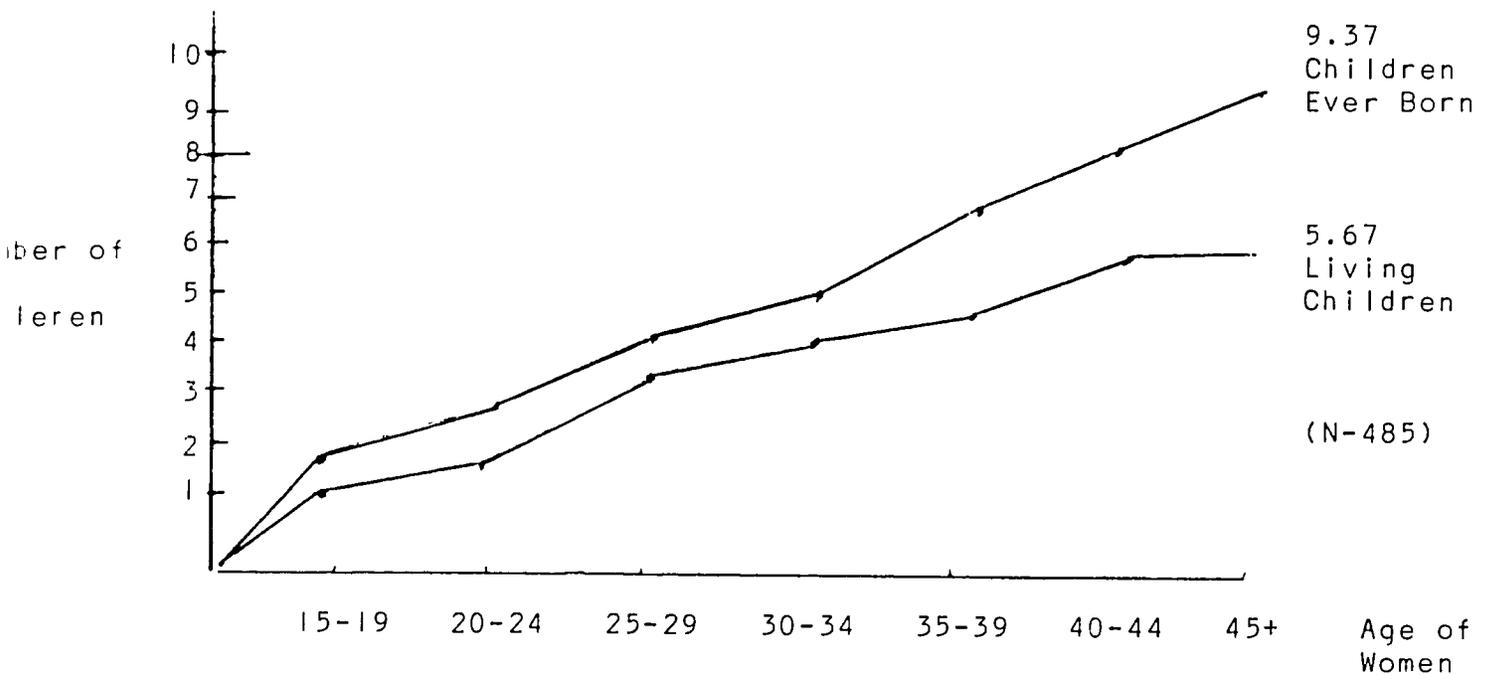


Figure 3 - Living Children and Children Ever Born for Female Respondents by 5 year Groups

As the foregoing table points out, women of completed reproductive age, i.e., over 45, report having had an average of 9.37 children ever born and 5.67 still living; 40% of their offspring were reported to have died.

Age-specific fertility rates for all women, and for married women alone are presented in Table 3.

Age Group	Percent of Women Married	Married Women Fertility per 1000 women/yr.	All Women Fertility per 1000 women/yr.
15-19	39.1	440	172
20-24	79.5	488	388
25-29	93.4	400	374
30-34	95.5	382	365
35-39	96.6	328	317
40-44	91.5	227	208
45-49	84.6	27	23

TABLE 3 - Age Specific Fertility Rates for Married Women and All Women

The total fertility rate, considered one of the best single cross-sectional measures of fertility, estimates the average number of children that a woman would bear if she went through her reproductive years exposed to the age specific fertility rate in effect at a particular time. The total fertility rate for the women interviewed is 9.23 - that is, a woman with completed fertility would have an average of 9.23 births if the rates in the table above remained unchanged throughout her reproductive years.

The crude birth rate is the number of births per 1000 total population per year. In the households interviewed, there had been a total of 169 births, or 48.5 births per 1000 in the period since the previous Jeshyn. When this rate is standardized to a single complete year, the crude birth rate is 41.3 per 1000 total population.

The number of deaths in the population during the same recall period was 98, giving a crude death rate of 24.2 per 1000 after adjustment for a single year. Current vital rates lead to a growth rate of 1.71% for the rural villages studied. This would lead to a doubling of the population within 36 years.

The infant mortality rate or the number of children under one year of age who die per 1000 live births in a year for the population studied was 157. Almost 60% of all deaths in the preceding year were to children under five years of age, with the breakdown by single year intervals as follows:

<u>Age of death (N=59)</u>	<u>Percent of All Deaths 0-5 Yrs.</u>
0-1	43.2
1-2	29.3
2-3	15.5
3-4	3.4
4-5	8.6

While the Three Province Survey was not designed as a demographic study, some comparison of its demographic findings with other surveys carried out in Afghanistan is noteworthy, as is a comparison of the vital data of rural Afghanistan with selected other countries. These comparisons are presented in Tables 4 and 5 respectively.

Parameter	Three Province Survey	National Demographic Survey ⁽⁶⁾	WHO/Infant Mortality Survey ⁽²⁾	Buck et. al. Four Village Survey ⁽¹⁾	CINAM Survey ⁽³⁾	Parwan/Kapisa Survey ⁽⁴⁾
Infant Mortality Rate	157	185	183	205	154	150-200
Crude Birth Rate	41.3	43.0	45.6	44.6	44.0	43.0
Crude Death Rate	24.2	21.0	--	--	20.0	20.0
Growth Rate	1.7%	2.2%	--	--	20.0	20.1
Maternal Mortality Rate	--	64.2/ 100,000	--	--	--	--
Women Age 45, Number Children Ever Born	9.3	7.7	--	--	--	7.7*
Women, Age 45, Number Children Died	3.6	3.4	--	--	--	2.6*
Persons Per Household	7.2	6.2	--	--	7.4	6.2

*Ages 35-39

Table 4 - A Comparison of Population Characteristics From the Three Province Survey with Other Afghan Surveys

	Afghanistan	Nepal	India	Iran	Iraq	Pakistan	Turkey
Crude Birth Rate	43	43	34	44	44	44	39
Crude Death Rate	21	20	13	16	11	15	12
Annual Growth Rate	2.2	2.3	2.1	2.8	3.2	2.9	2.7
Infant Mortality Rate	182	169	122	139	99	121	119
% Under 15 Years of Age	44	40	40	47	48	46	42
Life Expectancy	40	40	50	51	53	51	57

Table 5 - Comparison of Population Characteristics of Afghanistan with Neighboring Countries*

* Date Source: 1977 World Population Data Sheet, Population Reference Bureau, Inc. 1337 Connecticut Avenue, N.W., Washington, D.C. 20036

B. Rural Health Problems and Needs

Any attempt to improve health services should be planned with as thorough an understanding of the nature and cause of the specific health problems as is possible. In this section, findings of the Three Province Survey which increase understanding of rural health problems will be presented.

At the onset of discussion, it should be pointed out that the data on morbidity and mortality was based upon the recall of respondents. Numerous studies have demonstrated under-reporting of illnesses, especially common childhood ailments, in surveys relying on the recall of informants.⁽⁷⁾ Attempts were made to minimize inaccuracies by limiting the period of recall to the immediate two weeks before the interview. The survey was carried out from August through October, and therefore illnesses with higher incidences during these months may be over-represented, while illnesses associated with winter - such as pneumonia, typhus and common colds - may be under-reported. Ideally, morbidity surveys should be repeated in several different seasons, although the increased time and expense involved may outweigh the benefits to the planner.

Another approach to collecting morbidity data is the clinical survey in which the actual signs and symptoms are used as indicators of illness. The need for trained medical staff, the increased expense and higher levels of informant cooperation required decrease the practicality and usefulness of this approach. Also, the differences in results⁽⁸⁻⁹⁾ of the morbidity recall surveys and the clinical surveys, previously conducted in rural Afghanistan, are not significant, arguing for the lower-cost recall survey employed here.

I. Illness Prevalence

All female respondents were asked as part of their household interviews if each household member had been sick in the last two weeks, the nature of the illness, treatment sought and whether the individual was still sick at the time of the interview. Twenty-two percent of household members were reported as having been sick in the two weeks prior to the survey; 81.6% of those were still sick at interview time. Illnesses reported are summarized in Table 6.

<u>Illness Reported</u>	<u>Percent of Total (N=766)</u>	
<u>Respiratory</u>		
Colds	2.7	
Coughs	2.1	
Black Cough	0.5	
Pneumonia	3.7	
T.B.	3.2	
Sore Throat	0.8	
Other respiratory	5.0	
Subtotal		18.0
<u>Gastrointestinal</u>		
Vomiting	0.8	
Diarrhea	6.9	
Dysentery	4.5	
Cholera	0.4	
Stomach Pains	13.6	
Subtotal		26.2
<u>Fevers</u>		
Unspecified	8.8	
Malaria	5.0	
Other	0.8	
Subtotal		14.6
<u>Aches and Pains</u>		
Headache	4.5	
Joint Pains	3.7	
Arthritis	1.5	
Other pains	11.3	
Subtotal		21.0
Eye Problems		1.7
Women's Illnesses		3.8
All Other Illnesses		14.7
	total	100.0

Table 6 - Illnesses Reported for Household Members in Last Two Weeks

Three types of illnesses - respiratory ailments, gastrointestinal illnesses, and fevers - accounted for 57% of all illnesses mentioned. Two illnesses - measles and malnutrition - are notable by their absence. Measles, an illness frequently reputed as associated with childhood death, may be low due to the season, as measles is usually associated with the closer living conditions of the winter months. Malnutrition, which was mentioned in only 0.7% of cases, may be under-reported due to the fact that it is not perceived as a distinct illness by villagers, but rather as an end condition resulting from other health problems. The prevalence of malnutrition as determined by anthropometric measurement is very high, as will be discussed later.

The prevalence of illness, as reported by female respondents, differed by sex, 19.1% of males having been reported ill in the last two weeks as compared with 24.1% of females. While this difference may be attributed to the fact that informants were women, Figure 4 suggests another hypothesis - namely, that the increased prevalence of illness for females which begins at reproductive ages may in part be a function of the hardships of multiple childbirths.

Figure 4 also demonstrates that the very young and the old share a disproportionate burden of illness. Possible causes for the high prevalence of illness among the very young will be discussed in the section on Nutritional Status and Child Rearing Practices.

2. Illnesses Associated with Death

Informants were also asked to describe the illnesses which were associated with each death in the household in the last year. Their responses are included in the following table:

Illness	Percent of All Deaths (N = 98)
Pulmonary/Respiratory Problems	20.4
Dysentery/Diarrhea	17.3
Jinns	14.3
Fever	9.2
Swelling	6.1
Measles	3.1
Stomach Ache	3.1
Heart Disease	3.1
Other	23.4

TABLE 7 - Illnesses Associated with Deaths in the Last Year

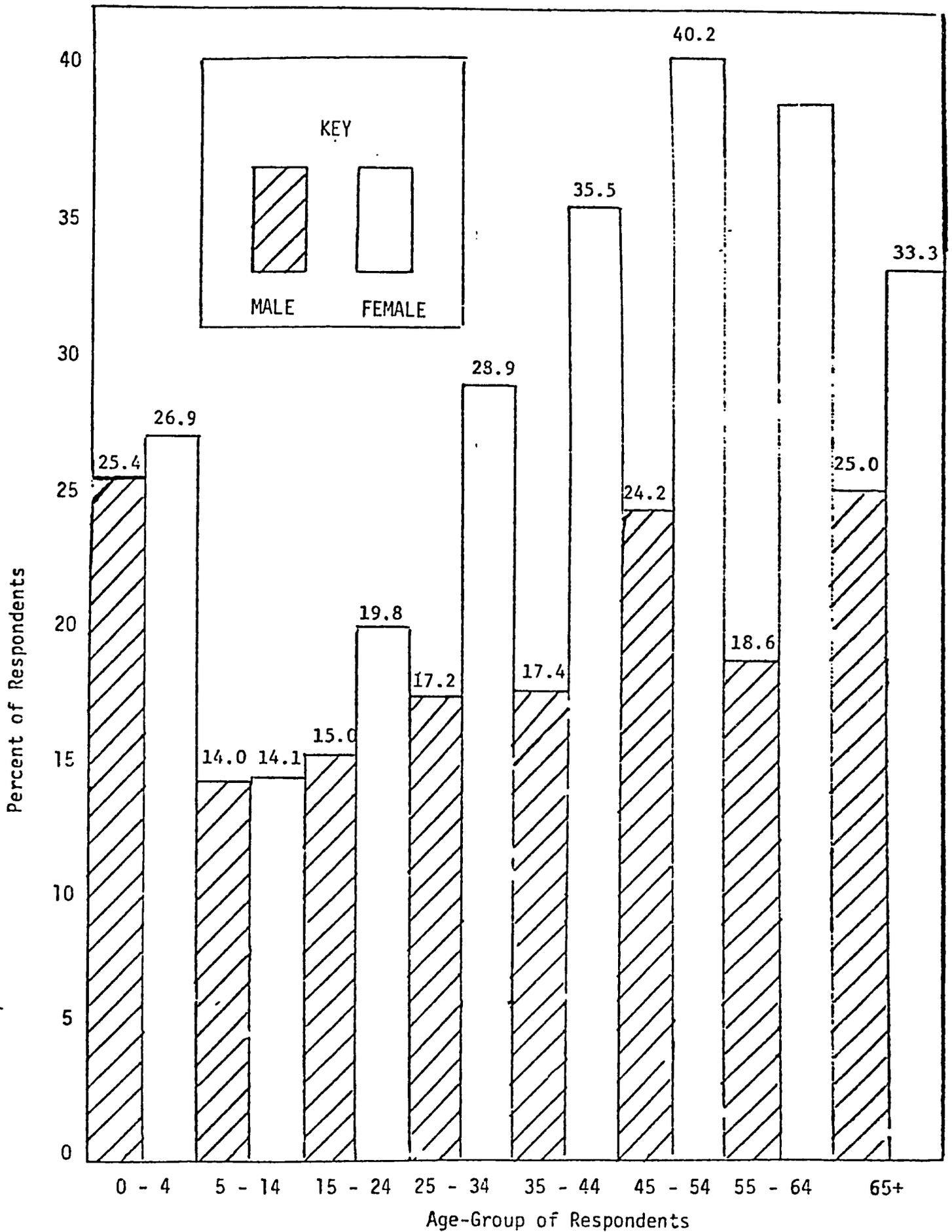


Figure 4 - Sickness in Last Two Weeks by Sex and Age

The reported causes of death for children from birth to five years is presented in the following table.

	<u>Age of Death</u>					Total	Percent of Total
	0-1	1-2	2-3	3-4	4-5		
Jinns	9	0	3	0	0	12	20.7
Diarrhea/ Dysentery	4	5	0	1	1	11	18.9
Pulmonary/ Respiratory	2	3	2	0	1	8	13.8
Fever	2	1	2	0	0	5	8.6
Swelling	0	4	1	0	0	5	8.6
Measles	0	1	1	1	0	3	5.2
Other	4	6	1	0	3	14	24.2
Total	21	20	10	2	5	58	
Percent of Total	36.2	34.5	17.2	3.5	8.6		100.0

TABLE 8 - Illnesses Associated with Death of Children Aged 0-5 in Last Year

Jinns is a folk classification for childhood deaths attributable to evil spirits with an attraction to the very young. It is difficult to make an exact translation of jinns into a specific disease classification, but on the basis of a description of its signs and symptoms and the specific age groups affected, it is tempting to equate jinns with neo-natal tetanus, especially since neo-natal tetanus does not receive any separate mention as a cause of childhood deaths. Jinns are often described as convulsions, with a rapid irreversible progression to death, a description compatible with the clinical signs of neo-natal tetanus. Surveys done in developing countries report extremely high infant mortality rates due to tetanus, ranging from 10% in Haiti (10) to 54% in India (11). Given the similarity of traditional umbilical cord severing and care techniques among rural populations, it would be unusual if tetanus were not also an important cause of childhood deaths in Afghanistan. Additionally, 55% of the 115 infant deaths reported in that survey and attributed to jinns, occurred within the first month;

this further supports the equation of jinns and neo-natal tetanus. It is extremely important to verify this association, given the extraordinary reduction in infant death which has been brought about in many countries through low cost maternal immunization programs.⁽¹²⁾ Similarly, the classification of "swelling" could easily be interpreted as a description of the edema which accompanies malnutrition, and further study should be carried out to determine the interpretation which should be given this classification.

Mothers were also asked to recall the cause of death for all their children who had ever died. TABLE 9 summarizes their answers:

Illness	<u>Number of Deaths by Age</u>					Total (N=701)	Percent of Total
	0-1	1-2	2-3	3-4	4-5		
Jinns	136	35	22	6	8	207	29.6
Pulmonary/ Respiratory	54	25	22	15	4	120	17.0
Diarrhea/ Dysentery	19	17	29	7	6	78	11.2
Measles	11	6	21	12	9	59	8.4
Fever	19	6	10	1	2	38	5.4
Smallpox	5	6	10	7	4	32	4.6
Malnutrition	15	0	3	0	0	18	2.6
Injury	6	0	3	1	2	12	1.6
Other	86	14	15	14	8	137	19.6
Total	351	109	135	63	43	701	
Percent of Total	50.1	15.5	19.3	9.0	6.1		100.0

TABLE 9 - Illnesses Associated with Total Child Deaths by Age

The large proportion of total child deaths attributed to jinns again emphasizes the importance of a further understanding of the exact classification of this illness category. The fact that smallpox appears in Table 9 but not in the listing of causes of death to children in the last year reflects the successful eradication of smallpox in the past five years in Afghanistan.

A look at causes of death by age group is instructive. For children aged 0-2 Jins is the most common cause mentioned. At ages 2-3 years, corresponding roughly to the reported age of weaning of Afghan children, diarrhea and dysentery become the leading causes of death.

3. Most Serious Illnesses as Perceived by Respondents

Both male and female respondents were asked, "In your opinion, what are the most serious illnesses which affect your household and others in your village?" Up to three responses per person were recorded. TABLE 10 presents the combined totals for all replies.

Illness	Percent of Total Mentions
<u>Respiratory Illnesses</u>	
Colds	4.8
Cough	1.1
Black Cough	7.2
Pneumonia	8.8
TB	8.2
Sore Throat	0.8
Other	0.2
Subtotal	31.1
<u>Gastrointestinal Illness</u>	
Vomiting	0.7
Diarrhea	8.6
Dysentery	11.8
Cholera	2.4
Subtotal	23.5
<u>Fevers</u>	
Fever Unspecific	8.3
Malaria	9.0
Other	3.3
Subtotal	20.6
<u>Aches and Pains</u>	
Stomach Ache	3.6
Headache	2.3
Other	2.3
Subtotal	8.2
<u>Measles</u>	7.5
<u>Eye Problems</u>	2.0
<u>All Others</u>	7.1
	100.0

TABLE 10 - Most Serious Illness, All Mentions (Males and Females)

Interestingly, no respondents reported jinns as being the most serious illness, although it was reported as being the single most important cause of child deaths. It may be speculated that while jinns kills children, it is not considered as an illness, but rather an action taken by powers beyond the control of medicines, and which in the villagers' minds somehow lies beyond the usual classification of illness.

With the exception of jinns, there is a strong congruence between those diseases perceived as "most serious" and those associated with death. For instance, 32% of child deaths in the last year were said to be due to gastrointestinal or respiratory problems, and 56% of respondents named these illnesses as being most serious. This has favorable implications for planning village level health programs, as it is usually easiest to obtain community cooperation and support for a program directed toward a problem that is given priority by the people themselves.

4. Nutritional Status and Child Rearing Practices

Ample evidence of high childhood morbidity and mortality existed in Afghanistan, especially in rural areas, before the design of this survey. One objective of this study was to examine the underlying causes for health problems among the very young, especially related to nutrition and child rearing practices. This section summarizes the information on the nutritional status of children aged 1-4 years as determined by measurement of weights, heights and arm circumferences. Also included is a summary of women's responses to a series of questions designed to obtain information on current child rearing practices in the villages studied.

The first important finding of the study is that there is extensive undernutrition among younger children. Figure 5 summarizes the results of arm circumference measurements for 358 children over one year and less than five years of age. "Well-nourished" has been defined as having an arm circumference in the "green", i.e., over 135 cms. measured at mid upper arm. All children with "red" or "yellow" readings, i.e., under 13.5 cms. were excluded from the "well-nourished" category.



Figure 5 - Percentage of Children Classifiable as "Well-Nourished"

* In this figure, and in TABLE 10, "1-2 yrs" means one year old but less than 2 years old, "2-3 yrs" means 2 years old but less than 3 years old, and similarly for all other age groups.

For each age group the small percentage of children classifiable as well-nourished is striking. For instance, less than 10% of children 1-3 years old were well-nourished, while of the oldest age group studied (over 4 but less than 5 years of age) less than 60% were judged well-nourished. TABLE 11 below presents the completed breakdown of arm circumference statistics by sex and age.

Age Group	Green (AC > 13.5 cm)		Yellow (12.5 cm ≤ AC ≤ 13.5 cm)		Red (AC < 12.5)	
	Male	Female	Male	Female	Male	Female
1-2 years	6.1	0.0	33.3	21.2	60.6	78.8
2-3 years	13.7	7.4	58.8	40.7	27.5	51.9
3-4 years	36.2	25.5	51.7	53.2	12.1	21.3
4-5 years	53.4	58.3	33.3	27.1	13.3	14.6

TABLE 11 - Arm Circumference (AC) by Age and Sex

Arm Circumference as Percent of Total at Each Age (N= 176 Boys, 182 Girls)

Figure 5 and TABLE 11 indicate that girls are less well-nourished than boys up until the age of four years, after which they do slightly better than boys. They also demonstrate an overall trend toward less undernutrition in older children than younger ones. This data must be

carefully interpreted, however, for it could be that the decrease is caused by poorly nourished children dying and therefore leaving the sample, as well as from children converting to a well-nourished status with the passage of time.

There can be little doubt about the serious nature of malnutrition in the population studied, and undoubtedly in rural Afghanistan in general, even though respondents seldom mention it as a serious health problem. The intersection of malnutrition and other manifestations of illness in Afghanistan can be seen in TABLE 12 which compares the prevalence of recent illnesses of children classifiable as well-nourished (green) with those definitely malnourished (red):

		Well-Nourished	Malnourished
Sick in Last Two Weeks	YES	16.7%	44.7%
	NO	83.3%	55.3%

TABLE 12 - Prevalence of Illness in Last Two Weeks by Nutritional Status of Children Over 1 and Under 5 Years of Age (N=286)

Malnourished children have a rate of illness almost three times that of children who are well-nourished. This finding does not prove that malnutrition causes illness, as it is also possible that it is the illness which causes the child to be malnourished. However, the evidence from this survey as well as numerous other studies⁽¹³⁾ is extremely suggestive that poor nutrition leads to increased illness. This has important implications in the design of programs with the objective of child health improvement.

In order to obtain some insight into the nutritional and child rearing behavior of rural women and perhaps into the cause of nutritional problems, each female respondent was asked a set of questions dealing with child care practices. When asked, "How long do you breast feed your babies?", the mean response of 486 mothers was two years, with no significant difference between boys and girls. The relatively long period of breast feeding should be a positive factor in child health; however, it should be remembered that responses were given in terms of ideal breast feeding lengths. If an event such as a pregnancy

occurs soon after a birth, it may prove impossible to accomplish the ideal. There was no significant difference in the nutritional status of children measured by arm circumference by the age of weaning reported by their mothers.

Mothers reported giving their children foods in addition to milk at an average age of 11.5 months. Not only is the introduction of solid foods rather late - most experts feel that a child benefits from being given well prepared solid foods as early as 5 months of age - but the foods currently being introduced are often of marginal value to the growing child. TABLE 13 summarizes responses to the question, "What are the best foods to begin feeding your baby?"

Food	Percent of Mentions
Rice	19.2
Bread	17.0
Powdered Milk	16.6
Bread and Tea	6.0
Vegetable Soup	4.4
Yogurt	4.2

TABLE 13 - Six Best Foods to Introduce to Babies (N=452)

More instructive than the type of food introduced is the mean age at which respondents reported first giving a particular food to their children, as seen in TABLE 14.

Food	Mean Age of Introduction (in Months)
Eggs	26.3
Soft Meats	20.2
Vegetables	18.8
Fruits	16.5
Tea	11.5
Bread	11.3

TABLE 14 - Age Reported for Introduction of Specific Foods (N=452)

TABLE 14 contains especially important information. Not only does it indicate one of the underlying causes of poor childhood nutrition - the extremely late reported introduction of high protein foods into the child's diet - but it also suggests an intervention at the village level with potentially profound implications for child health: improvement of mothers' knowledge of appropriate feeding patterns for small children and modification of current feeding practices. An intervention of this nature could be carried out at low cost, perhaps as part of a village health worker program, especially if female VHWs were available. Another approach to improving nutritional practice is through the use of mass media campaigns making use of the radio, an approach which will be discussed in more detail in a later section of this report.

Only 20% of mothers interviewed reported ever giving their children powdered milk, while over 70% reported giving animal milk. Frequencies of giving milk were:

	<u>Milk Powder</u>	<u>Animal Milk</u>
Never	79.9	28.8
About Once/Month	0.8	2.3
About Once/Week	6.5	20.5
Three-Four Times/Week	2.3	7.0
Every Day	10.5	41.4

Another factor affecting child nutrition is the prevailing belief about the proper feeding of a sick child. In many societies, food (either all foods, or specific foods) is withheld from the sick child. The most common example of this occurs with diarrhea. It is a common belief that solid food, and occasionally liquids as well, should not be given to a child with diarrhea. This frequently leads to under-nutrition, weakness and dehydration. Both men and women in the sample were asked, "Should you feed your child when he has diarrhea?" One-third of the men and one-quarter of the women stated that a child with diarrhea should not be given food. In addition, men were asked whether water should be given. Over 20% reported that it should not be. Among those stating that a child with diarrhea should be fed, soft rice was the food most frequently suggested.

There is much about the nutrition of children in the Afghan village that this survey was unable to learn. Questions such as: How much food is available to the household? What foods are actually given to small children? How are they fed? How often? How is food distributed among the household members?, are important questions, and ones

that could be answered only by more detailed nutritional surveys. They are questions that must be answered, however, if village level health programs are going to be designed to meet the most basic health problems facing rural people.

5. Attitudes Toward Family Size

Essential to learning about the feasibility of using child spacing as an element of a general rural health program is an understanding of the attitudes of couples toward the number of children they want, as well as their interest in learning about ways to increase the time between births.

Increased birth intervals allow a mother to give a child more of her time and attention, since she will not have several small children to care for simultaneously. The child will receive extended breast feeding. A greater space between children usually means fewer births during a woman's reproductive period, and thus family resources are divided among fewer persons. Most importantly, women's health will be improved with longer rest between children, and improved ability to care for the children they do have.

Both men and women were asked how many additional children they would like to have. Sixty-three percent of the men and 65% of the women said that they would like to have no more children. The mean number of additional children desired was 1.27, with boys being more desired than girls by a ratio of approximately 2:1. The number of additional children desired by women is shown in TABLE 15 below.

Number of Living Children	Mean Number of Additional Children Desired
0	2.45
1	3.20
2	2.92
3	1.53
4	.74
5	.64
6	.46
7	.17

TABLE 15 - Additional Children Desired by Number of Living Children of Female Respondents (N=333)

Not unexpectedly, the number of additional children desired decreases with the number of living children a woman already has. A single exception to this trend occurs among women with no living children who desire fewer "additional" children than women with 1-2 living children. This inconsistency is explained by the fact that one-half of the twenty women in the sample with no children were over 35 years old. These women most likely were incapable of producing any children and therefore would not express an anticipation of having any additional children. There was no association between the number of children who had died and the number of additional children that a woman desired.

The number of additional children also shows a direct inverse relationship to the age of female respondents, as shown in TABLE 16.

Age of Female	Mean Number of Additional Children Wanted (N=333)
15-19	3.91
20-24	2.96
25-29	2.47
30-34	1.53
35-39	0.98
40-44	0.64
45-49	0.50

TABLE 16 - Mean Number of Additional Children Wanted by Age of Female Respondent (N=333)

As noted earlier in the discussion of fertility, the number of children born to women in rural Afghanistan now and in the past is extremely high; women aged 15-19 years will have 9.2 children by the time they have completed their reproduction if current rates of fertility continue. The average desired family size, the number of living children plus additional children desired, is also high as might be expected.

Nonetheless, 69% of the males and 91.6% of the females interviewed stated that they would be "interested in learning about ways that would allow them to increase the amount of time between pregnancies." The number of women

expressing an interest in learning about spacing methods is especially noteworthy and carries implications for the services which could be productively provided by a village health worker.

6. The Village Environment

The environmental condition of a village is another factor in illness. Poor sanitation, crowding, lack of proper water supply, and inadequate housing all contribute to morbidity and mortality in the Afghan village.

As discussed earlier, the average rural household consists of slightly over 7 persons living in 2.25 rooms, or just over three persons per room. Such conditions lead to the rapid spread of infectious diseases, especially during winter seasons when families spend more time gathered together in the home. Sharing facilities with livestock also increases the risk of animal borne vector diseases.

All male respondents were also asked the source of the drinking water used by their household. Sources mentioned were:

Jui (open irrigation ditch)	37%	(N=198)
Well in Yard	23%	
Karez	19%	
Spring	13%	
River	5%	
Well in Village	2%	

Seventy-eight percent of men reported being satisfied with their source of drinking water; nonetheless, 86% said that they would be willing to contribute their labor to improve the drinking supply to their village if government specialists were available for technical assistance; 60% reported a willingness to contribute money to the same cause.

The primary sanitation facility used by the households sampled were:

Latrine in Yard	41.8%
No Facility	27.7%
Deep Hole Outside Yard	15.8%
Deep Hole in Yard	4.5%
Latrine in House	4.0%
Other Facilities	6.2%

Fewer men, only 55%, were satisfied with their sanitation facilities. Eighty-one percent of male respondents claimed a readiness to contribute labor to improve their sanitation

and almost 50% would contribute money for the purpose of improving village sanitation facilities.

There is an apparent need for improvement of the environmental conditions in rural villages. Some of these improvements, such as the wholesale improvement in housing, will prove extremely difficult. Others may be accomplished more easily, especially given the strong inclination of informants to help themselves if technical assistance were available from governmental sources.

7. Socio-economic Status of Households and Health Problems

The economic status of a household often affects the health of its members. For instance, in this survey 41.9% of children aged 1 to 4 years in households characterized as very poor, were classified as being malnourished, compared with 21.0% in households which were average or better; on the other hand, in the households classified as average or better, 38.7% of the children were classifiable as well-nourished compared to only 27.7% in very poor households.

Women in very poor households have both greater numbers of children who had died and a larger number of children living than do women in households with an SES of average or better, as seen below:

<u>SES</u>	<u>Living Children</u>	<u>Children Died</u>	<u>Desired Total Family Size</u>
Very Poor	4.3	1.92	6.9
Average or Better	3.7	1.85	5.9

Significantly, women in the lowest SES classification had a desired total family size, i.e., living children plus additional children wanted, which was one child larger than those in the highest SES category. While it is not possible in this report to analyze all data by SES, the findings above support the conclusion demonstrated by innumerable studies and surveys around the world: poverty is accompanied by increased risks of poor health, higher mortality, and an accompanying trend toward increased fertility rates. The implication of this is that any health program, to be effective, must be designed in such a way as to reach those in the greatest need, most frequently including the very poorest segment of the population.

C. Rural Health Resources

Every society evolves methods to promote and maintain the health of its members. To those concerned with the planning and management of health programs, an appreciation of the existing health resources is as important as an understanding of the nature of the health problems facing a community. In this section, the health-seeking behavior of rural villages will be described. As described in an earlier MOPH report, (14) the number of alternatives that the villager has available in the event of an illness, or to ward off sickness, are many. While the entire system of health services, both modern and traditional, is too complex to describe in this report, there are general statements that can be made:

The present network of health resources in rural Afghanistan is composed of many layers of belief, tradition and practice.

The villager is, above all, pragmatic in the way that he seeks care. Several different sources of expertise may be drawn upon for a single episode of illness, with little energy being extended in attributing cures to one specific source or another.

The new and the old in health care exist comfortably side by side in rural Afghanistan. Traditions of curing tend to be more accumulative than competitive. For the same reasons that an individual will seek advice from several different sources when sick, the advent of modern treatments has not eliminated the existence of more traditional practices and practitioners.

The household represents the first, and in many cases the primary, source of care for most rural Afghans when sick. Treatment is usually sought beyond the household only after knowledge and treatments available in the family home have proven inadequate for the problem.

The decision as to the type of treatment to be sought out after home treatment proves inadequate is a complex one involving numerous considerations such as the perceived cause and severity of the illness, age and sex of the individual, the amount of money available to the family, the availability of transport, and the household's past experience with similar illnesses.

The findings of the Three Province Survey provide extensive information on the behavior of rural households in pursuing health, as well as the amount of money expended. Figure 6 is a map of health resources which attempts to convey both the complexity of the network of services available as well as their spatial relationship to the household, which in this report serves as the focal point for the analysis of health needs and health behavior. Appendix B is a brief description of each of the sources of health care appearing in Figure 6.

1. Sources of Treatment

An analysis of the type of treatment sought for the 740 household members who were reported as having been sick in the last two weeks provides one measure of the health seeking behavior of the populations studied. Of those reported to have been sick, 496, or 67%, reported having used at least one specific treatment. The average number of treatments mentioned for those who did seek care was 1.55, with 15% having tried three or more different sources of treatment. The sources of treatment and the frequency with which they were used is presented in TABLE 17.

Treatment Used	Percent of Illness for Which Used
Home Treatment	58.8
Basic Health Center	25.4
Private Doctor - Local	12.9
Hospital - Regional	12.5
Private Doctor - Regional	9.6
Pharmacy	9.0
Bazaar	8.2
Private Doctor - Kabul	5.2
Mullah	4.8
Dokhan	3.8
Hospital - Kabul	2.4
Treatment Outside Country	1.2
Malaria Specialist	0.6
Hakimji	0.4
Cupper	0.2

TABLE 17 - Frequency of Use of Sources of Treatment For Illness in Last Two Weeks

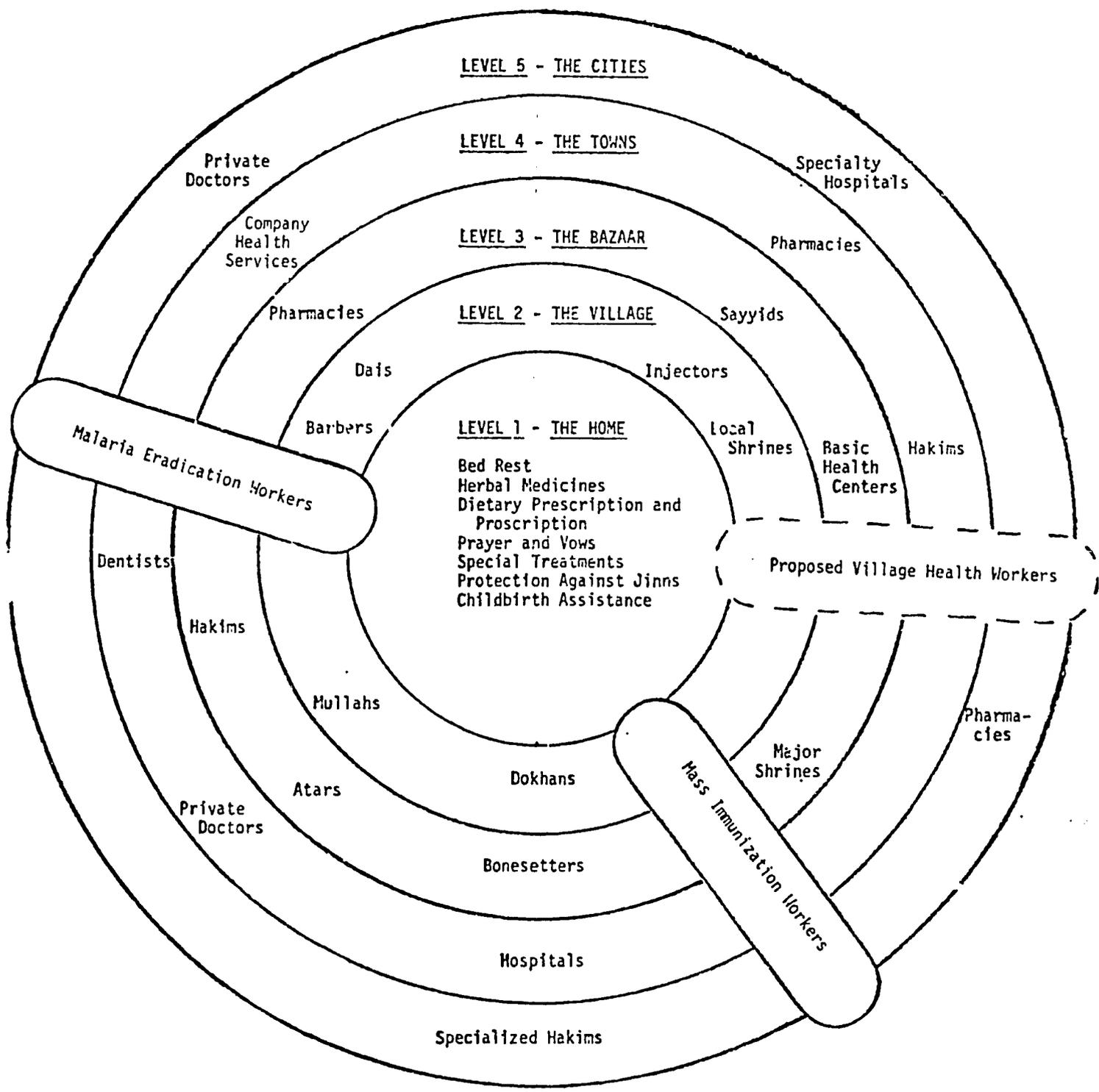


Figure 6 - Overview of Afghan Rural Health System

Table 17 affirms that the single most frequent source of treatment for illness is the household itself, primarily herbal remedies, food prescription and pro-scription, prayer and bed rest. Also important is that the Basic Health Center was reported to have been used in 25% of all illnesses and was the single most frequently consulted source of treatment outside the home. This is an indication of the important role now being played by the BHC; it also provides information on the potential of the BHC to perform an even larger role in the delivery of services. Other than for the mullah, reported use of traditional services was low, but under-reporting is a possibility, as interviewers were clearly perceived by villagers as being advocates of modern types of treatment - a bias impossible to avoid when highly literate interviewers are required.

The sources of treatment sought for all deaths in the last year provides information on the types of care which are sought in life threatening situations, rather than for the more common illnesses. Thirty-eight percent of those who died had received no treatment; 27% had consulted three or more different sources; an average of 1.9 sources were consulted per death. The sources consulted are summarized in TABLE 18.

Treatment Used	Percent of Deaths for Which Used (N=61)
Private Doctor - Regional	37.7
Home Treatment	32.8
Basic Health Center	26.2
Mullah	24.5
Hospital - Regional	19.6
Private Doctor - Local	14.7
Pharmacy	14.7
Private Doctor - Kabul	9.8
Hospital - Kabul	3.2
Dokhan	3.2

TABLE 18 - Frequency of Use of Sources of Treatment for Deaths in Last Year

Not surprisingly, the sources of treatment sought for household members who died shows an increased usage of sources of care more specialized, more expensive and at greater distance from the village. Treatment at the health center was sought for one-fourth of all persons who died, again showing the important role it plays.

In the year prior to the survey, households sampled made an average of 17.5 visits to all sources of medical care, with a mean of 3.63 different sources consulted per household. The following table summarizes the percent of households reporting to have used specific sources of treatment as well as the median number of visits for households which used the sources.

Source	Households Using	Median Number of Visits
Pharmacy	59.1	3.19
BHC	49.8	1.98
Mullah	48.5	3.28
Injectionist	28.7	5.40
Shrine	26.6	1.40
Doctor - Regional	26.2	2.35
Dokhan	23.6	7.50
Hospital - Regional	20.7	2.13
Atar	12.7	3.50
Doctor - Kabul	12.7	1.33
Dai (Midwife)	11.8	1.20
Doctor - Local	11.0	3.50
Hakimji	10.1	2.25
Barber	6.8	1.39
Bonesetter	5.9	1.14
Hospital - Kabul	5.5	1.15
Cupper	1.7	1.50

TABLE 19 - Percentage of Population Using Various Sources of Treatment/Median Number of Visits (N=200)

This table clearly demonstrates the wide variety of resources utilized by rural populations and supports the view that villages do not use one system of care, modern or traditional, to the exclusion of another. Almost 60% of respondents had used a pharmacy in the previous year; 50% visited a basic health center, but almost 50% also visited a mullah and 25% made a visit to a shrine for an illness. Several traditional sources, however, appear to be relied on only infrequently, particularly the cupper and the barber.

Both men and women were asked specifically whether anyone in their households had ever used a basic health center. Fifty-one percent of the men and 67% of the women reported having done so. There appear to be only slight differences in the use of the BHC by distance as shown:

<u>Distances from BHC to Village</u>	<u>Percent of Women Having Used BHC</u>
1 km	75
10 km	61
15 km	63 (N=476)

Those who had not used the BHC gave the following reasons:

<u>Reason</u>	<u>Male (N=98)</u>	<u>Female (N=143)</u>
No one Sick	46.9	27.5
Services in Town Better	7.1	10.5
No Medicines Available at BHC	6.1	7.7
Staff Require Money	16.3	7.7
Family Objection	0.0	7.0
Too Far Away	1.0	7.3
Go to Private Doctor	0.0	5.6
Heard Bad Things about BHC	4.1	0.0

TABLE 20 - Reasons for Not Using BHC - Male and Female Respondents

Very few respondents mentioned the distance to the BHC as a reason for not using its services, while the fact that money is required for services was mentioned often as a reason why men did not use the services. Approximately 25% of households reported using the village shop or dokhan as a source of medicine in the prior year. Their overall opinion of the quality of medicine they were able to obtain from the dokhan was not high, however; only 26.8% of respondents considered the medicines to be "good".

Male respondents were asked whether they get advice from anyone outside their household when a family member is sick. Only 15% of respondents answered that they did. The person who gave the advice was almost always reported as being another man, living in the same village. Only infrequently, less than 25% of cases, were these sources said to dispense medicines as well as advice. On the other hand, 58% of women and 37% of men knew of someone in their own village who could give them an injection if needed. In less than 15% of the cases was the injectionist described as a person who also dispensed medicines.

Pregnancy and childbirth are recognized in all societies as times of potential physical and emotional problems. Not surprisingly, a specialist source of care is common for this particular problem. Slightly less than 50% of female respondents reported using a traditional midwife or dai for their deliveries. Most dais used (89%) were

located in the same village as the respondent. Of those not using a dai, the vast majority (93%) relied on female relatives for delivery assistance. All women, regardless of the type of help they reported receiving for childbirth were asked whether they were satisfied with the services available. These responses were:

	<u>Percent</u>	
Very satisfied	6.6	
Satisfied	50.8	(N=470)
Intermediate	30.9	
Unsatisfied	8.9	
Very unsatisfied	2.8	

The fact that only 11% of women rated their childbirth assistance as "unsatisfactory" is evidence that the methods evolved for handling normal deliveries in the village meet the needs of most women.

2. Cost of Health Services

As important as the information on the types of services being utilized is the amount of money that rural householders pay for the services they receive. Household health expenditure data is useful in obtaining a better understanding of the "marketplace" for health care and to determine the financial capacity of villages to support new programs designed to improve their health.

It has been estimated that the per capita annual government health expenditures is approximately 20 Afs.⁽¹⁵⁾ It is obvious that even if the MOPH budget were spread equitably over the entire population of the country, there would be severe limitations on the services which could be provided to the country's 15 thousand villages if only Ministry resources were utilized. On the other hand, the median annual personal health expenditure, according to male informants, is 139 Afs, or almost seven times the government expenditure.

Data on household incomes in rural Afghanistan is scarce and of questionable accuracy. However, if the mean annual household income of 13,600 Afs which was obtained from a 1971 survey of 254 farmers in Parwan and Ghazni⁽¹⁶⁾ is considered representative of rural Afghanistan in general, health expenditures are 7.4% of the annual household income.

The following table summarizes how male informants reported allocating their household health budget of approximately 1000 Afs/year:

Source	Percent of Health Expenditure	Average Paid Per Visit (in Afs)*
Pharmacy	37.0	248
Hospital - Regional	12.1	327
Doctor - Regional	9.0	182
Doctor - Kabul	8.0	664
Basic Health Center	5.7	54
Dokhan	4.6	36
Hospital - Kabul	4.4	909
Mullah	4.0	33
Shrine	3.5	122
Other (Included care outside the country)	2.8	958
Injectionist	2.4	14
Hakimji	2.4	85
Doctor - Local	1.7	45
Atar	1.0	32
Dai	0.9	94
Bonesetter	0.2	47
Barber	0.2	30
Copper	0.1	39

* Includes transportation costs

50 Afs = \$1.00

TABLE 21 - Health Expenditure by Source and Average Cost of Services

This data presents a wealth of information on the health behavior of rural Afghans. For example, it vividly points out that the single highest expenditure is for the purchase of medicines at the pharmacy, 37% of the total health budget. It also demonstrates the extremely high cost of a pharmacy visit, average cost 248 Afs, relative to most other sources of treatment.

It also demonstrates that an illness requiring care in Kabul, either from a private physician or a hospital, is a major expense. This was underlined by a statement of one respondent when asked what people in his village do for an illness too serious to be treated at home. "Those who are lucky enough to have money go to Kabul for help. Those like many of us who have no money must stay in the village and either get better or die." TABLE 21 also confirms the wide variety of treatment sources employed. Note that even though visit payments for a traditional practitioner are considerably less than for a modern service, villagers spend almost 20% of their health budget on traditional treatments. Additionally, the data demonstrates that a visit to a basic health center often requires some expense, either for transportation or services.

In summary, the health expenditure data implies that as villagers are already spending large amounts of money for health services, in absolute as well as relative terms, any plan which calls for villagers themselves to contribute to the support of a local health program could be successful as long as villagers perceive the program as being beneficial and worthy of their support. This could have immediate implications for the planning of the new village health worker program. One additional factor should be kept in mind, however. While the median household health expenditure is very high, over 25% of the households spent less than 100 Afs for health care. In order to plan programs that will reach all of those in need, it would be essential to understand whether these households had no one in the household who was sick during the year, or whether they represent a segment of the population who simply did not have the money to spend.

3. Attitudes Towards Available Health Resources

Another important factor in planning health programs is the attitude of villagers toward the services presently available. Logically, there will be greater interest in and cooperation with a program designed to improve services considered unsatisfactory than for services which are currently satisfactorily meeting the needs of the village.

All female respondents were asked whether they were satisfied with the source of treatment for household members who had been sick in the last two weeks. TABLE 22 summarizes their responses:

Source	Percent Satisfied (N=468)
Private Doctor - Local	75.0
Hospital - Regional	71.0
Basic Health Center	64.7
Bazaar	57.9
Private Doctor - Kabul	57.1
Private Doctor - Regional	53.5
Pharmacy	52.4
Mullah	52.4
Home	49.6
Dokhan	31.6

TABLE 22 - Satisfaction by Source of Treatment
(Female Respondents)

All respondents were also asked where they felt they received the best treatment for an illness which cannot be treated at home. TABLE 23 summarizes their replies.

Best Treatment	Percent Response	
	Males (N=227)	Females (N=463)
Basic Health Center	34.8	33.3
Hospital - Kabul	29.1	3.0
Private Doctor - Regional	8.8	14.5
Private Doctor - Kabul	7.0	2.6
Regional Hospital	7.0	6.4
Mullah or shrine	5.3	25.0
Private Doctor - Local	3.1	8.8
Village	2.6	0
Pharmacy	.9	3.4

TABLE 23 - Most Frequently Named Best Source of Treatment Outside Home

Both men and women mentioned the basic health center most frequently as the best source of treatment. Other than for the BHC there was little agreement between men and women on the best source of treatment. Men tended to name sources in the cities as being best while women selected sources near to home. For instance, 29% of men, but only 3% of women thought hospitals in Kabul were best, while 25% of the women and only 5.3% of the men named the Mullah or shrine. This undoubtedly reflects the greater mobility of men, travel to the cities being a more realistic possibility for them than for women.

Those who reported having used the basic health center were asked their opinion on the quality of the medicine and services they received. Responses indicated a broad range of attitudes:

Quality of Medicines and Services at BHC	% of Males (140)	% of Females (29)
Very good	7.9	11.0
Good	50.0	48.5
Intermediate	17.8	16.5
Poor	23.6	23.7
Very Poor	0.7	0.3

The general feeling about the services provided by the BHC is a favorable one, even though almost one-fourth of respondents gave "poor" ratings. Similar distribution of

responses were given when the question was asked concerning the personal treatment received from BHC staff, with slightly fewer "poor" replies.

<u>Personal Treatment Received at BHC</u>	<u>% of Males (141)</u>	<u>% of Females (283)</u>
Very good	11.3	11.7
Good	58.9	53.3
Intermediate	14.9	17.7
Poor	9.9	17.7
Very Poor	5.0	0.0

Several questions were asked to determine whether respondents perceived any improvement in health conditions in the past few years. The first was: "Do you feel that children are healthier or less healthy than 5 years ago?" with responses:

	<u>Males (223)</u>	<u>Females (430)</u>
Healthier	63.7	38.6
Same	15.7	23.5
Less Healthy	20.6	37.9

Apparently women are less favorably impressed with present health conditions than men, the same percent saying that children are less healthy than in the past. The reasons the respondents gave for their responses were:

<u>Reasons Given for Poorer Child Health</u>	<u>Percent (N=33)</u>
More children now	39.3
More disease	30.3
Bad weather	9.0
Bad health services	9.0
Poverty	3.0
Bad water	3.0
Medicines not free	3.0
More malaria	3.0
Other	0.4

<u>Reasons Given for Improved Child Health</u>	<u>Percent (N=112)</u>
Medicine and doctor available	52.6
Less disease	12.5
God's help	8.5
Good weather	8.5
Better food	5.1
Hospital	4.1
Cleanliness improved	4.1
Transportation	2.8
Other	1.8

TABLE 24 - Reasons Given for Current Child Health Status by Male Respondents

Similarly women were somewhat less positive about improvements in child mortality in the last five years. When asked, "Do you think that more or fewer children die now than 5 years ago?" they responded:

	<u>Male Respondents (204)</u>	<u>Female Respondents (421)</u>
More die now	11.7	28.3
Same	21.6	14.5
Fewer die now	66.7	57.2

The final question was whether respondents felt that health services had improved in the last five years. Almost 3/4 of all respondents felt that health services were better now than they were five years ago. The overall attitude of respondents appears to be that general health conditions have improved in recent years. The implications of this for change in the attitudes of parents toward the number of children they desire is important. It has been hypothesized that parents will seek to control the number of children they have only if they have assurance that the children that they do have have an increased probability of survival. The survey, however, did not demonstrate any significant differences in fertility or desired family size by respondents' perceptions of improvements in health services or child "survivability."

However, among women who have had three or more children who have died, there is somewhat less interest in contraception than among women who have not lost any children, as shown on the next page.

	<u>Number of Children Died</u>	
	<u>0 (N=123)</u>	<u>3 or more (N=71)</u>
Interested in contraception	16%	5%
Not interested in contraception	84%	95%

It is premature to predict whether perceptions of villagers about child survivability are changing substantially enough to have a significant impact upon the number of children desired. In a situation such as in Afghanistan where 38% of women sampled have had more than 3 children die and several respondents had as many as 10 children die, there may be a considerable time lag before actual fertility patterns change in correspondence with feelings of the chances of a child surviving to adulthood. It is a subject requiring continuing study.

All respondents were asked what in their opinion was the most needed health improvement in their village. TABLE 25 compiles their most frequent responses.

<u>Most Needed Improvement</u>	<u>Percent of Mentions (N=1241)</u>
Medicines	30.5
Doctor	24.4
Hospital	10.5
Improved Sanitation	8.9
Better Food	7.5
Transportation and Roads	2.6

TABLE 25 - Most Needed Health Improvements
(Most Frequent Responses Only)

This information is useful because it shows that villagers are more concerned with having improved access to medicines than they are in better health facilities or physicians. This was also seen in TABLE 22 which showed fewer people satisfied with pharmacies and dokhans than most other health services available.

Access to medicines may be limited by costs as much as by the distances to pharmacies or the supply of medicines stocked. As shown earlier, medicines are the single most expensive item in the health budget of rural Afghans, both on an annual and a per visit basis. The priority given to having access to medicines may be a very favorable factor

in the success of any village level program whose objective is to increase the availability of essential, low cost medicines, whether it is through village health centers, village shops or pharmacies.

4. Attitudes of Villagers Toward the Feasibility of a VHW Program

One approach to the expansion of health services in rural areas is the village health worker, a concept which has been successfully introduced in a number of countries. One of the objectives of this survey was to determine the receptivity of rural Afghans to the idea of an individual from their village being recruited, trained and supervised to manage the most common health problems of the village.

In order to learn villagers' views on the feasibility of a village health worker program, all respondents were asked, "In some countries persons from villages have been trained to treat the most common health problems facing the people of their village. Do you feel that this type of thing could be possible for your village?" As can be seen below, reaction was strongly positive for the feasibility of such a program.

	<u>Males (235)</u>	<u>Females (483)</u>
Feasible	78.3%	95.3%
Not feasible	17.4%	3.7%
Don't know	4.3%	1.0%

Of those stating that such a program would not be feasible for their village, the most common reason given (60% of all replies) was that there was no one in their village qualified for the role. Questions designed to elicit information about which characteristics would be most important for a person who would serve as a village health worker produced the following responses:

	Percent Replies	
	Male (193)	Female (421)
<hr/>		
<u>Best Age for a VHW*</u>		
Young	30.0	42.3
Middle-Aged	26.3	24.9
Older	6.3	4.6
Don't Know	37.4	28.2
<u>Best Sex for VHWs</u>		
Male	13.7	11.6
Female	6.3	43.3
Both	80.0	45.1

* N=190 for men, 494 for women

(continued)

<u>Should Literacy be Required?</u>		
Yes	100.0	81.3
<u>Should VHW Have Experience Outside Village?</u>		
Yes	94.3	98.4
<u>What are Best Qualifications for VHWs? (Most Frequent Responses Only)</u>		
Good character and patience	40.4	54.4
Proper Manner	15.3	2.6
Humanitarian	10.4	4.5
Experience	8.2	1.0
Intelligence	6.6	26.0

TABLE 26 - BEST Characteristics for Village Health Workers

The table points out that both men and women felt that it would be important that women be trained as VHWs. It also shows that personal qualities such as good character and proper attitude are judged to be more important qualifications than experience or intellect, even though respondents share the common belief that candidates should be literate. (While literacy is rated highly and respondents felt that VHWs should have at least 10 years of education, whether or not such qualifications are either essential or useful for such a role is unclear, especially as studies (18) have shown that the most successful change agents at the village level are persons who share as many characteristics as possible with the people they serve. Persons of higher education may automatically be distinguished from the majority of villagers and may be less successful as change agents than persons less well educated. The important question is what is the minimal education which is required in order to perform the specific tasks.

Respondents were also asked how they felt VHWs should be selected. Replies were:

	Percent Replies	
	Males (N=182)	Females (N=438)
By the people	47.3	42.3
By the government	39.7	40.2
By village leaders	7.7	11.9
By the government and people	3.5	2.3
By leaders and people	1.2	1.6
From among the injectionists in the village	0.6	1.7

The most common belief was that the people of the village should themselves decide who should be their village health worker. However, large segments of the population also stated the opposing viewpoint that the government should make the selection, indicating that the best method may vary from village to village and may realistically depend upon the specific political structure encountered as much as upon the attitudes of the people. Interestingly, the question brought forth a suggestion from a small number of respondents which is worthy of consideration, namely that those in the village currently in roles where they provide a health service for the village, such as injectionists, be given first consideration for the VHW role. This may prove to be a suggestion worth pursuing.

Twenty-six percent of males and 18% of females could think of a specific person in their village who they felt would make a good VHW. In those cases in which an individual was nominated, their characteristics had the following profile:

	Males (N=59)	Females (N=79)
Mean Age	33.5 years	31.5 years
Sex: Male	91.4%	61.8%
Female	8.6%	38.2%
Education - Mean Years	9.2 years	7.9 years
Literacy	82.8%	72.0%
Experience Outside Village	63.8%	61.5%

TABLE 27 - Characteristics of Persons Nominated for VHW Role

One of the problems anticipated in establishing a VHW program has been the lack of qualified women. TABLE 27 is encouraging in that over one-third of females responding were able to nominate a woman from the village who they thought would make a good VHW. Also encouraging is that 27% of male respondents stated that they would allow their wives or daughters to be trained as village health workers.

Thirty percent of males, but only 10% of females, felt that it would be possible to find a woman from the village to be trained as a VHW if training were nearby and she could return home in the evenings. Somewhat surprisingly, slightly more (34% of males) answered affirmatively when the same question was asked, but training was described as being farther away, requiring women to spend an extended period away from the village. There was a slight drop in positive replies among women for these conditions.

Respondents were also asked why they nominated the person they did for the VHW role. Their replies were:

	% of Males (N=62)	% of Females (N=98)
People like him/her	35	27
Good education	19	14
Person is informed	15	7
Person is clever	13	35
Person is useful	13	5
Knows how to give injections	5	1
Relative of respondent	0	11

TABLE 28 - Reasons Given for Nomination of Individual as VHW

Again, the belief that a good character is a more desired characteristic than knowledge or experience in selecting a VHW appears to be supported, especially in responses of males.

Over 200 male respondents were asked whether VHWs would have to be paid. Eighty percent felt that they would. The following methods of payment were suggested:

	<u>% of Responses</u>	
People should provide salary	43	
Government should provide salary	27	
People could not provide salary	20	47% other than
People provide part of salary	10	villagers themselves

Men were obviously divided on whether or not the village would be able to support a VHW. The answer to the question of whether a village can or will support a VHW will come from actual experience and may well differ from area to area. The percentage of men that thought the village itself could pay for the health worker varied from 100% to 22% in villages studied. The method by which payment is collected may also make a difference. For instance, villagers may be reluctant to join an insurance scheme to help pay for the support of a VHW whether or not there is anyone in their household requiring his/her service, but they may be readily willing to pay for their help when they require it or may be willing to buy medicines from a VHW knowing that he/she will receive a small profit from each sale.

The method by which a VHW will be supported is a key question, especially since one major assumption of the Ministry of Public Health's planned program is that the village health worker would be nearly self-sufficient and operate with minimal government expenditures beyond those incurred for training and supervision.

5. Diffusion of Information in Rural Villages

As described earlier, many of the health problems in the rural populations studied, especially those of small children, arise from lack of information as much as from lack of available health services. The nutrition of children, treatment of the umbilicus of newborns leading to tetanus, and the treatment used for diarrhea are important examples of health problems caused or exacerbated by lack of knowledge.

One remedy is obvious - increased information. However, before beginning a program aimed at improving health education it is essential to have an understanding of channels by which villagers, especially women who are the prime targets, currently receive information. The question posed is an immense one and one which the Three Province Survey has only begun to investigate.

All women interviewed were asked whether they ever listen to the radio. Almost 50% reported that they did, and the following table records their reported frequency of listening:

Times per Week Listened	Percent of Responses (N=245)
Less than 1	13.5
1	4.1
2	11.0
3	5.7
4	1.2
5	0.4
6	1.6
7 or more	62.4

TABLE 29 - Frequency of Radio Listening - Women Who Listen

Two-thirds of women listeners reported having radios in their homes; most of the rest listened in the homes of friends or relatives. The most interesting programs as reported by women listeners were:

Music	62.1%
Family life	19.4%
News	9.7%
Farmers' program	3.7%
Stories	2.8%
Radio Doctor	2.3%

Men were asked a slightly different question, namely: how many days a week they listen to the radio. Their responses were:

Days Per Week Listened	Percent of Responses
0	61.2
1	5.1
2	2.1
3	2.5
4	.8
5	2.5
6	1.3
7	24.5

TABLE 30 - Frequency of Radio Listening - All Men
Mean = 2.1 days/week

Their favorite programs were reported to be:

News	32.7%
Farmers' program	27.1%
Music	19.6%
Radio doctor	7.5%
Family life	5.6%
Stories	1.9%

The radio is one of the major means by which new ideas come into the village. The information on the radio listening habits of men and women provides a wealth of information with broad implications for health education programs. The first fact is that the percentage of people in the village who have access to a radio is extremely high. Secondly, women report listening to the radio as frequently as men, if not more frequently. There are, however, distinct differences in favorite programs of men and women. Women rate music programs as their overwhelming favorite, while men report favoring the news and farmers' program. Neither men nor women rate the Radio Doctor program among their favorites.

There are several important implications in these findings. First, the radio would have the possibility to reach a very large percentage of the rural population with health education messages. The second implication is that these health messages would be most effective if sent via the most listened-to program, i.e., music for health education messages for women, and news or farmers' programs for messages for men. One of the most successful campaigns to improve nutrition of rural children has been carried out in Zambia, a country with geographic and language barriers similar to Afghanistan's. The approach used has relied heavily on the use of popular radio programs and nutrition messages incorporated into popular music. In fact, in most years the most popular song has been a message on nutrition or child rearing produced by the National Nutrition Commission. The potential for this type of health education program in rural Afghanistan is extremely favorable, given the radio listening habits of the rural population.

Another potential use of the radio which should be mentioned is in communicating with VHWs dispersed around the country to provide them with ongoing information, instructions and encouragement. One example of this approach is the Nigerian extension workers' "Radio Farmer". This is a program broadcast on national radio once a week, to which all extension workers listen to find out what other workers are doing and to upgrade their own knowledge. Such an approach might also work well for village health workers.

Another means by which information diffuses into the village is by villagers who travel to regional centers and to the cities. As was already shown for the source of treatment used by men and women, there is a great difference in mobility according to the sex of an individual. All of the men were asked whether they permit their wives to go to the following places alone:

<u>Place</u>	<u>%Permitting</u> (N=230)
Visiting female friends in village	41.8
Bazaar	7.8
Basic health center	12.9
Shrine in village	6.5

When women were asked whether they were allowed to travel outside the household alone they gave the following replies:

<u>Place</u>	<u>% Allowed (N=431)</u>
Visit female friend in village	3.3
Bazaar	6.7
Basic Health Center	44.3
Shrine in village	19.0

This information points out the severe limitations on women's movements outside the household. The small percentage of women reporting being allowed to visit female friends in the village points out the restrictions on the spread of information from woman to woman within the village.

The basic health center, however, appears to represent a force for change. The ability of greater percentages of women to travel to the health center than to other places makes it an advantageous site for the spread of information both from health center staff to those attending, and from woman to woman. Programs should be arranged at the BHC to take advantage of this opportunity.

The current channels of communication to the rural Afghan woman are quite narrow; the potential for their expansion, making use of innovative health education programs, is, however, great.

6. Socio-economic Status and Health Behavior

Just as the SES of a household can affect the health of its members, so too can socio-economics be an important determinant of both what a household does when one of its members is sick and the access which that family has to information. As discussed earlier, while the average amount a rural household pays for health care annually is quite high, there are many households in which expenditures are very low. Analysis shows that the health expenditure of very poor households is approximately one-half of that of households above average. Furthermore, attitudes as to the best treatment for illness appear to vary by socio-economic category as well. For instance, 34% of poor women feel that the mullah offers the best care when sick, while only 15% of the average or above average households mentioned this source. Likewise, 16% of average or above average women felt that a hospital was the best place to go when sick, compared with 3% of very poor women. Slightly fewer (24%) of average or above average women perceived the BHC as providing the best care as did very poor women (40%). There was no difference by SES for receptivity to the concept of a village health worker. Not surprisingly, poor

women have considerably less access to a radio and therefore could be expected to be reached less easily by that means than women in households which are wealthier and possess their own radios.

While not all differences between the rich and the poor are significant or important for the planning of health services, their specific needs and constraints must be taken into consideration in planning village health schemes.

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