BASELINE HEALTH SURVEY

Basic Health Services Project

391-0415

Pakistan

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I. INTRODUCTION

1.1 Background

Pakistan's National Basic Health Services Program was conceived as a way of bringing scientific, preventive and curative health services to this country's rural population as rapidly and effectively as possible. The original plan specified that training schools for Medical Technicians (M.T.s) would be operated at District Hospital level by paramedical training officers (P.T.Os), assisted by tutors. These mid-level health workers would then be posted to Integrated Rural Health Complexes (I.R.H.C.s), consisting of a Rural Health Center (R.H.C.) and four to six associated Basic Health Units (B.H.U.s). The medical technicians, in turn, would be responsible for recruiting, training and supervising volunteer Community Health Workers (C.H.W.s) in the villages served by the primary care facilities. (Ref: Project Paper, 1975.)

Within the first three years of the present scheme, the original plan required that a "Baseline Health Survey" be carried out. This document represents the fulfillment of that requirement.

1.2 Survey Objectives

As summarized in the project paper, the health survey was to be designed to measure two types of "indicators":

1.2.1 Goal Indicators

(a) prevalence of malnutrition in children 1-2 years of age, based on measurement of height (length) and weight;

(b) prevalence of diarrhea/dysentary with dehydration;

(c) "percent of contraceptive users"

(d) "percent of continuous users of contraceptives at a parity of two."

1.2.2. Purpose Indicators

(a) coverage:

(1) population coverage - percent of population within 10 km of a B.H.U.

(2) utilization - visits/person/year to a Government health unit

(b) quality: "The (National Basic Health Services) Cell will select 5-10 common curative conditions, set diagnostic and treatment standards and observe existing non-physician workers who deliver primary care. They will also pick 5 preventive program activities."

(c) management: Check on drugs and equipment in each rural unit, comparing findings to existing standard drug and equipment lists; and inquire into frequency of supervision of workers.

The suggested sampling plan specified that in each of 34 villages (14 in Punjab), 17% of the households were to be sampled. Half of the villages were to be in close proximity to functioning B.H.U.'s. The other half, labeled "control" were to be at a greater distance from the B.H.U., so that it would be unlikely that the B.H. Services would have any measurable influence on the health status of the village. The survey was to be carried out by seven 3-person teams from each school. Following an initial one week of training, there was to be approximately 7 days of data collection, at a total cost of (U.S.) $11,700.

1.3 The Present Health Survey Proposal

Following several months of negotiation, the National Basic Health Services Cell prepared a proposal for a "Health Survey of Six Villages in Punjab." The proposal was submitted to USAID on June 4, 1980, in fulfillment of the condition precedent for a Baseline Survey. It was subsequently

approved by USAID and Government of Pakistan.

The modifications which were found to be desirable have been summarized in Table 1, taken from the proposal. It will be noted that the sampling plan was reduced to six study villages, one in each of the six Districts where I.R.H.C.'s were located. The goal indicators were expanded to include some indication of diet and nutritional status of children under 5 years. In addition, a survey of under 5's skin disease was to be conducted. Finally, in collaboration with the Pakistan Medical Research Centre (P.M.R.C.), hematocrits and blood for malaria were to be obtained from the children of mothers willing to volunteer. The purpose indicators remained essentially unchanged.

TABLE 1. BASELINE HEALTH SURVEY: COMPARISON OF ORIGINAL TO MODIFIED SURVEY

Characteristic	Status	
	Original Survey	Modified Survey
Sampling Plan	a. All Four Provinces b. "treatment" and "control" villages	a. Punjab only b. One study village in each of the six Districts with I.R.H.C. complexes. Two training workshop village sites in Sahiwal for comparable data from unserviced villages
Goal Indicators	a. Nutritional Status, using height and weight	a. Nutritional Status, using upper arm circumference and dietary intake recall
	b. Limited to children 1-2 years old	b. Expanded to include children 0-5 years.
	c. No physical examination	c. Physical exam to survey for all skin lesions
	d. No blood drawing	d. Blood from children of mothers who volunteer, for malaria prevalence study
	e. Use of two fertility control indicators	e. Essentially unchanged
	f. Prevalence of diarrhea/dysentary with dehydration	f. Deleted.
Purpose Indicators	a. Utilization	a. Essentially unchanged
	b. Quality	b. Use of Discrepancy Model approach, with development of job analysis
	c. Management	c. Essentially unchanged

II. METHODS

2.1 Selection of Villages

The District Health Officers in each of the six Districts with planned I.R.H.C.'s were instructed to identify one village in close proximity to one of the B.H.U.'s within the complex. It should be noted that this "convenience" sample was not random or systematic and that the findings within the sampled villages cannot be generalised to some larger universe of villages.

2.2 Personnel

As the experience of undertaking this survey was considered potentially valuable to the medical technician students, it was determined that four of the best students from each of the six schools (two male and two female) would be selected by the P.T.O.'s. In addition, the PMRC agreed to provide technicians and supervision for the blood collection phase of the project.

Supervisory staff consisted of the University of Hawaii MEDEX advisors, a medical resident from the University of Maryland, a training officer (Dr. M. Afzal from Sahiwal), and a research physician from PMRC.

2.3 Training Workshop

A 6-day training workshop was scheduled for the RHC in Sahiwal District which had previously been utilized by the medical technician students at that school. The students were housed at the RHC and the training staff resided at nearby rest houses. Two villages, about 1-2 miles from the RHC, were selected for field work. The students were divided into two teams for work in the villages. They were trained in map making and in collection of census data. The male technicians practiced the collection of environmental health data and the female technicians practiced with the maternal-child health questionnaire. The teams practiced obtaining measurements on the

under five's. Dr. Porter provided instruction in identification of skin disorders and held several skin clinics during the week of training.

On the final day of the workshop, several hours were utilized for careful review of the environmental health and MCH forms, and the medical technician students recommended certain revisions, based on their experience during the week.

2.4. Survey Instruments

The survey instruments consisted of the following:

2.4.1. Census Form. The decision was made to carry out a 100% census of each study village, utilizing the census form. Although it had seemed feasible, earlier, to collect identical information to that planned for the national census in 1981, further consideration of the use to be made of the data led us to abandon this plan. Instead, the age, sex, education, and marital status of each member of the household was obtained. A household was defined as those individuals using a common kitchen. The relationship to the head of household was recorded in URDU by the medical technicians, in case PMRC subsequently required the data.

2.4.2. Evironmental Health Data Form. This form was modeled after the forms already printed in the mid-level health worker curriculum book. Besides several crude indices of socio-economic status (quality of house), the form provided space for recording the status of the water supply, excreta disposal facilities, and waste water drainage, in addition to the general cleanliness. These are items of direct concern to the Basic Health Services program.

2.4.3. Maternal-Child Health Practices Form. To be completed on at least 100 children under five in each village, this form provided data on a number of topics related to mother and child health and health practices. The original draft was prepared by the MEDEX advisor and was heavily revised on the advice of the National Basic Health Services staff. Further revisions occurred as a result of the workshop. (Appendix 1.)

2.5. Data Collection Phase

2.5.1. Phase One. The medical technicians were divided into two teams at the completion of the training workshop. One team, headed by Dr. Afzal, went south to Bahawalpur, D. G. Khan, and Jhang. The second team, supervised by Dr. Mack, went north to Sialkot, Gujrat, and Sheikupura. The schedule which appeared feasible called for approximately 3 days for a complete census and environmental health survey, and 3 days for collection of maternal-child health data. The seventh day was to be used for travel. This schedule was adhered to throughout the first phase of the survey.

2.5.2. Phase Two. Although it had initially been planned to combine the PMRC blood collection component of the survey with the phase one data collection, this turned out to be impossible because of delays in the arrival of the equipment and supplies required for the blood collection and analysis. Therefore, the blood collection phase commenced on the day following the completion of phase one. The PMRC team, consisting of approximately 8 blood collection technicians, five medical technician assistants, two research physicians, drivers, and team leaders, spent approximately 3 days in each study village. A clinic was operated and all individuals wishing to visit the clinic were encouraged to do so. In addition, a 20% sample (every 5th household) was approached and an attempt made to collect blood from all family members within the household. Finally, the under 5's sample was followed up. The hematocrits were determined on portable microcentrifuges, and malaria smears were made for later reading.

2.6. Quality Control Measures

2.6.1. Census Data. In the first village censused by the northern team, a 10% recensus was carried out in order to examine the repeatability of the instrument. Acceptable results were obtained. However, ages varied by as much as 2 - 3 years in the 5 - 15 year old age group and by larger amounts in the older age groups. Thus, only the crudest grouping of ages appears

justified in the analysis.

2.62 Environmental Health Data

On the last day of data collection in the first northern village, a 10% resurvey was carried out. Completely unacceptable levels of agreement were obtained on a number of items, such as quality of house, age of house and certain components of water pump safety. The coding rules were discussed and elaborated. As a result, the coding undertaken in the second and third villages proved to be quite repeatable. However, the first village was not resurveyed. In the three southern villages, because of the more uniform and lowly quality of housing, this problem did not occur.

2.63 Maternal-Child Health Practices Data

This was the most difficult form to complete and required close supervision and continued instruction of the female technicians. Careful quality control of the measurement data was carried out in the three northern villages, where all members of the team were involved in obtaining the measurements. In the southern team, only 2-3 technicians performed all measurements. A check on a sample of the children examined in those villages was carried out at the completion of the survey and an acceptable level of agreement was found. No systematic efforts to check the repeatability of much of the MCH were undertaken.

2.64 Diagnoses of Skin Disease

Dr. Michael Porter personally examined all children under 5 in villages 2, 3, and 4. In the remaining three villages, the skin diagnoses are based on medical technician assessment alone.

2.7 Data Coding and Analysis

Under the supervision of Dr. Mack, two medical technicians coded the data and transferred them to Fortran Code Sheets. These were key punched and analyzed in Islamabad.

2.8 Purpose Indicators

2.8.1 Utilization

Within the MCH questionnaire, questions were asked about the use of medical services. These are summarized in the results section.

2.8.2 Quality

A job description for the medical technician was developed, using the format developed by the East-West Center Communication Institute. A simplified observational instrument was field tested by one of the training officers at Chawinda. However, no systematic assessment of quality of care in the Basic Health Units adjacent to the study villages was carried out.

2.8.3 Management

An inventory of drugs and equipment was intended as a part of the Baseline Health Survey. However, it also was not completed.

III. RESULTS

3.1 Description of Study Villages

The villages chosen for the survey were as follows:

(1)	Sialkot District	Partenwalli	RHC:	Chawinda
(2)	Gujrat District	Kirenwalla	RHC:	Lala Musa
(3)	Sheikupura District	Chandikot	RHC:	Warburton
(4)	Bahawalpur District	Nandy Lal	RHC:	Uch Sharif
(5)	D.G. Khan District	Basti Fuji	RHC:	Choti Zerin
(6)	Jhang District	Ratta Matta	RHC:	Shah Jawana

Within each village, a 100% census was carried out to determine the age structure of the population, the marital and educational status, and the environmental health status of each household.

In Table 3.1, the percentage of the population, by sex and by village, is shown for children under 1, under 5,

under 15 and for the entire population. The proportion under 5 is fairly consistently in the 15-17% range except for Basti Fuji where it is nearly 20%. Likewise, the proportion under 15 years is highest in Basti Fuji. It is lowest in Kirenwalla.

From Table 3.2, it is clear that the males tend to marry slightly later than the females. However, marriage is nearly universal. The proportion of females who are widowed reaches quite significant levels of 40% or more by the 5th decade.

There are marked differences in the level of education of the population in these villages. As shown in Table 3.3, 55% of the males and 25% of the females in Kirenwalla have at least some education. In contrast, only 40% of the males and 5% of the females have had any education in Basti Fuji.

These differences in the proportion of children within the population, the dependent elderly, and the educational levels are all significant in determining the health status of the population.

TABLE 3.1 POPULATION STATISTICS FOR VILLAGES STUDIED

Village	Distribution of Population (%) Under 1 Yr	Under 5 Yrs	Under 15 yrs	Total Population
1. Partenwalli				
male	3.0%	15.0%	45.0%	1111
female	2.9%	16.5%	44.1%	991
total	2.8%	15.7%	44.5%	2102
2. Kirenwalla				
male	3.0%	15.4%	39.1%	514
female	3.6%	17.2%	37.4%	471
total	3.3%	16.2%	38.3%	985
3. Chandikot				
male	4.4%	17.6%	43.3%	522
female	3.5%	16.7%	42.2%	426
total	4.0%	17.2%	42.8%	948
4. Nandy Lal				
male	4.4%	17.6%	43.3%	522
female	3.5%	16.7%	42.2%	426
total	4.0%	17.2%	42.8%	948
5. Basti Fuji				
male	3.1%	18.7%	48.9%	652
female	5.6%	21.0%	45.8%	580
total	4.0%	19.6%	47.5%	1232
6. Ratta Matta				
male	3.5%	13.0%	38.5%	1024
female	2.6%	12.4%	40.4%	919
total	3.0%	12.7%	39.4%	1943

TABLE 3.2 MARITAL STATUS BY AGE AND VILLAGE

Village		Age Group 15-24	25-34	35-44	45-54	55+
1.	male	13%	84%	95%	97%	79%
	female	46%	92%	97%	83%	58%
2.	male	11%	76%	93%	93%	81%
	female	52%	89%	84%	79%	43%
3.	male	17%	84%	89%	93%	84%
	female	41%	68%	91%	77%	53%
4.	male	27%	70%	87%	94%	82%
	female	76%	89%	96%	87%	52%
5.	male	28%	90%	98%	96%	84%
	female	73%	94%	95%	79%	53%
6.	male	17%	61%	84%	91%	88%
	female	46%	87%	92%	83%	59%

TABLE 3.3 EDUCATIONAL STATUS OF ALL INDIVIDUALS OVER 15 YEARS OF AGE, BY VILLAGE AND SEX

A. MALES	NO EDUCATION	LESS THAN 6 YRS.	OVER 6 YRS	MATRIC OR MORE
Village				
1	58.8	14.6	14.7	11.9
2	45.0	20.9	14.5	19.6
3.	68.8	11.0	9.1	11.0
4.	88.4	7.2	3.1	1.4
5	61.9	22.5	11.1	4.5
6.	71.9	17.3	7.6	3.2
B. FEMALES				
Village				
1	81.0	13.9	2.7	2.3
2	74.2	20.3	3.7	1.7
3	87.3	6.2	2.3	4.2
4	99.6	.5	-	-
5	94.3	4.8	-	-
6	97.8	1.4	0.5	-

3.2 Environmental Health Survey

At the time of the census, the male medical technicians completed a brief environmental health survey of each house. The results are summarized in Tables 3.4 - 3.11.

a. Size of House

In Table 3.4 it will be noted that nearly 52% of the households had only one room. The survey form excluded kitchen, storage area, verandah and halls. The size of the houses varied somewhat from one village to another. For instance, over 65% of the homes in Partenwalli had more than one room; in contrast, only 20% of homes in Nandy Lal had more than one room.

b. House Construction

A very crude judgement on the quality of the home was made. Houses were considered pucha, semi-pucha or kucha, depending on the building materials used. In Table 3.5, note that although the overall percentage of pucha roofs was 9.1%, nearly 28% of the houses in Parenwalli had pucha roofs.

c. Water Supply

The source of water for each household was investigated and has been summarized in Table 3.6. Most villagers are provided with hand pumps, either within their own compound, or in a neighbor's compound. Wells were in use primarily in village 4, Nandy Lal. The quality of the water supply was investigated, using the protocols available in the Community Health module of the mid-level health worker curriculum. As seen in Table 3.7, most pumps were found to be working. However, many did not have a water-tight seal around the base or drains for carrying away the waste water. In yards where there was

significant water usage, some type of drainage is required to prevent backlogging of water within the compound. About 18% of the houses were without any type of drainage system, whereas over 30% were felt to have so little water usage in their compounds as to obviate the need for construction of any type of drain. This information is summarized in Table 3.8.

d. Animals in Compound

A major problem of hygiene in the villages grows out of the close proximity between man and animal. The presence or absence of buffalo, goats and sheep, cows, chickens and other animals was noted for each housing compound. These results are tabulated in Table 3.9. Less than 1% of the houses in Ratta Matta had buffalo, compared to 50% in Kiranwalla. In contrast, cows were most frequently found in Village 4. The type and number of animals undoubtedly represents an index of village wealth as well as a potential hygiene problem.

e. General Cleanliness

Although quite subjective, because it is based on the impression of multiple observers, the general cleanliness of the compound was judged and recorded. The data shown in Table 3.10 does appear to support the notion of differences in general cleanliness between villages. Only 5% of compounds were judged to be very dirty in Village 1, compared to over 50% in Villages 3 and 4.

f. Sources of Fuel and Light

In the environmental health survey questionnaire, the sources of fuel and of light were determined, and are presented in Table 3.11. Here we see that dung and wood, or a combination of the two, meet nearly the

entire need for cooking fuel. There is some variation from one village to another, with wood or wood and dung being used in the three southern villages more commonly than in the north.

Although electricity was present in Village 4, the people could not afford to use it. There were no power lines to Village 2. In the other villages, a varying number of houses had electric current.

TABLE 3.4 NUMBER OF ROOMS IN HOUSE*

No. of Rooms	Village 1	2	3	4	5	6	Total	Combined Percentage
1	82 (30%)	70 (44%)	132 (70.1%)	131 (78.4%)	103 (49.5%)	106 (33.9%)	624	51.8%
2	105 (39%)	68 (43%)	46 (24.6%)	33 (19.8%)	71 (34.1%)	148 (15.3%)	371	30.8%
3	54 (19.9%)	16 (10%)	5 (2.7%)	1	21 (10.1%)	46 (14.7%)	143	11.9%
4	19 (7%)	2	1	2	10	12 (3.8%)	46	3.8%
5	4	2	1	-	3	1	11	.9%
6-7	7	-	2	-	-	-	9	.7%
	271	158	187	167	208	313	1204	

*Excluded: store room, hall, verandah, kitchen, privey

TABLE 3.5 HOUSE CONSTRUCTION

Village No.	OUTER WALLS				ROOF			
	Pucha	Semi-Pucha	Kucha	Total	Pucha	Semi-Pucha	Kucha	Total
1	126 (46.7%)	75	69	270	76 (28%)	78	118	270
2	94 (59.5%)	40	24	158	16	77	64	158
3	11	3	173	187	-	5	182	187
4	5	9	152	166	8	13	145	166
5	8	58	142	208	16	15	176	207
6	5	25	283	313	2	6	307	313
TOTALS	493	210	843	1546	118	194	992	1301
PERCENTAGES	31.9%	13.6%	54.5%		9.1%	14.9%	76.2%	

TABLE 3.6 WATER SOURCES TO HOMES

	Village No.					
	1	2.	3	4	5	6
Piped - Inside Compound	1	1	-	1	1	-
Pump - Inside Compound	180	52	115	4	134	117
Well - Inside Compound	-	-	-	28	-	-
Piped - Outside Compound	-	-	-	-	-	-
Pump - Outside Compound	90	94	72	2	74	198
Well - Outside Compound	1	11	-	135	-	-

TABLE 3.7 QUALITY OF WATER SUPPLY

Village No.	1	2	3	4	5	6
A. PUMP						
Total	270	147	187	6	208	306
1. Pump Working	263	146	179	4	204	298
2. Slab Slopes						
3. Water Tight Seal	201	94	37	1	57	51
4. Drains Away Water	260	146	155	1	184	267
5. Greater than 36 feet from feces	254	146	166	-	147	296
B. WELL						
Total	2	11	-	-	-	-
1. Chlorine Added	-	-	-	-	-	-
2. Water Tight Seal	2	-	-	-	-	-
3. Greater than 36 feet from feces	1	11	-	-	-	-

TABLE 3.8 HOUSEHOLD DRAIN FACILITIES

Village No.	1	2	3	4	5	6	TOTAL	%
Drain to street	237	96	67	6	88	64	558	42.9%
Drain to soakage pit	5	1	32	4	16	34	94	7.2%
Drain to nothing	12	36	84	35	31	35	233	17.9%
Not applicable *	15	25	4	119	73	178	414	31.8%
TOTALS	269	158	187	164	208	311	1301	

*appeared to be so little water utilized in compound that no drainage required

TABLE 3.9 ANIMALS KEPT IN COMPOUNDS, BY VILLAGE AND TYPE OF ANIMAL

	Village No. 1	2	3	4	5	6	TOTAL
Buffalo	49 (18%)	80 (51%)	70 (37%)	28 (17%)	38 (18%)	19 (.3%)	284
Goats	41 (15%)	61 (39%)	47 (25%)	63 (38%)	48 (23%)	99 (32%)	359
Cows	3 (1%)	45 (28%)	37 (20%)	82 (50%)	69 (33%)	49 (16%)	313
Chickens	193 (72%)	139 (88%)	110 (59%)	61 (37%)	48 (29%)	51 (16%)	602

TABLE 3.10 GENERAL CLEANLINESS OF HOUSE COMPOUNDS

Village No.	Very Tidy and Neat		Moderately Neat		Very Dirty		Total
	No.	%	No.	%	No.	%	
1	60	22.8	191	72.6	12	4.5	263
2	61	38.6	73	46.2	24	15.2	158
3	25	13.4	59	31.5	103	55.1	187
4	8	5.1	69	43.7	81	51.3	158
5	26	12.5	120	57.7	62	29.8	208
6	52	16.8	203	65.7	54	17.5	309

TABLE 3.11 FUEL AND LIGHT SOURCES

A. FUEL						B. LIGHT SOURCES	
Village No.	Kerosene	Dung	Wood	Dung & Wood	Other	Electricity	Kerosene
1	3	125	1	121	20	145	124
2	1	76	-	70	8	-	158
3	-	48	17	116	6	23	162
4	1	-	102	62	-	3	160
5	1	1	89	116	1	88	118
6	-	1	103	208	-	146	148

3.3 Results of Maternal-Child Health Questionnaire Analysis

The MCH Questionnaire was designed to elicit information about current maternal and child health practices, recent pregnancy experience and health behavior related to the index child. The following paragraphs summarize briefly the major findings as set forth in the accompanying tables.

3.3.1. Maternal Data

a. Maternal Ages. The inverviewers queried the mothers about their ages at the time of the original census. No other estimate of maternal age was obtained at the time of the MCH interview. In Table 4.1 the maternal ages are grouped by 5 year intervals and by village. Note that less than 5% of mothers give a stated age of under 20 years. In the cumulative percentages row it will be noted that less than 45% of the mothers claim ages below thirty years, indicating the high proportion of child-bearing activity through the 30's and into the 40's.

b. Family Size. The interviewers attempted to obtain a record of all pregnancies, exclusive of abortions. This information is notoriously inaccurate. Because it was not considered fruitful to probe the mothers for pregnancy experience within the last 6 or 12 months, there are no estimates of birth rates which can be made.

In Table 4.2, the number of mothers with living children, by village and number of living children in the home, are displayed. Of 636 mothers of index children, 20% had no other living children. At the other extreme, 35% of the mothers had five or more living children. Thus, if mothers with at least 2 living children are the recipients of family planning attention, fully 60% of the child-rearing population are of concern to the health services program in relationship to family planning programming.

c. Child Survival Experience. The only potentially useful estimate of overall infant mortality is presented in Table 4.3. Here, the number of 'everborn' and the number of 'living' children are displayed by village and by the stated

number of 'everborn' obtained by the MCH interviewers. From these data, there appear to be a high degree of uniformity between villages which is independant of the number of everborn. Excluding the mothers with one living child, the infant survival ranges from 90% for families with two 'everborn' to a low of 67 - 72% for mothers who claim to have had 9 - 10 'everborn' infants. The mean across all families is 80%.

In this tabulation, no allowance is made for the age at death of the infants. Included are stillborns as well as children up to any age.

d. Pregnancy. The mothers were asked whom they saw during their pregnancies. In Table 4.4 it will be noted that nearly 70% of the mothers indicated that they saw no one during their pregnancy. An additional 20% saw a local dai. Less than 1% were seen by a medical assistant, and less than 3% by an LHV. There were significant differences between villages, with the villages in the three northern Districts using the dai in a much higher proportion of cases than in the three southern District villages.

The mothers were asked if they had had any problem during their pregnancy, and if so, from whom they sought advice. In Table 4.5, the column labeled 'unknown' represents mothers who did not seek advice. Of those who did, the largest proportion were self-advised, with help from a variety of other sources. Government health services appear to play a negligible role.

Given the high incidence of anemia in pregnancy, it is important to provide iron supplements, as well as vitamins, during this period. The mothers were queried about their taking of pills during pregnancy and the reasons for pill consumption. In Table 4.6, it will be noted that only about 30% of mothers took pills. However, only 63 of 631 respondents took pills for 'weakness'or 'anemia'. Fully 80% of the group of mothers took no precautions during their pregnancy (Table 4.7), and the main advice taken was to avoid heavy lifting.

Of more importance is the finding that little dietary advice is offered (Table 4.8), with 2% of mothers being offered dietary advice by dai or midwife, and an additional 3% by doctor. The mothers were asked specifically if they consumed extra amounts of milk, meat and eggs, fruit, vegetables or energy foods (chapatti, rice) during pregnancy. The results of the analysis of this question are shown in Table 4.9. Although nearly one quarter of the group indicated that they consumed extra milk, an insignificant proportion of the mothers claimed to consume extra amounts of the other items and nearly 7% claimed to actually avoid meat and/or eggs during pregnancy.

e. Birth Intervals

With the heavy reliance on breast feeding within the population, it would be expected that the maximum birth interval to which lactation might contribute would be observed. The age of the next older sibling was sought in each instance and the difference in age between the index child and the next older sibling provides the best available data on pregnancy intervals. Intervening pregnancies were excluded together with the mothers having them. The results are shown in Table 4.10. Ninety percent of the birth intervals within this cohort of infants were greater than 18 months. Two thirds were over two years.

f. Family Planning

Within the MCH questionnaire, several questions on family planning were introduced following the eliciting of obstetrical history. The structure of the questionnaire is shown in Table 4.11. Mothers desiring no more children were queried as to whether they intended to take any action to prevent more. Those wanting more children were asked about spacing.

In the analysis shown in Table 4.12, the family planning patterns of mothers with 2 or more living children are shown. It is of importance to note that, overall, nearly 50% of these

mothers stated that they did not want more children. However, as shown in row 3, only 7% of the mothers are doing anything about that desire. A slightly higher percentage indicated actions to prevent more children in villages 1 and 2 (16-19%). Row 5 represents the mothers not wanting more children who are not using a family planning method at present. The majority do not appear to be intending to use a method in the future, either. This is based on their response to the question "Why do you feel that no precautions are necessary" to prevent further pregnancies? Many gave responses which were categorized as fear, disapproval, fatalism, or a feeling that contraception was immoral.

The mothers wanting more children were asked how many they desired. In Table 4.13, it will be noted that 43% of the mothers indicated a desire for only one more child. When asked if they planned to space the children, it was found (Table) that 17% were already pregnant and 47% were interested in spacing. However, a majority of these mothers had no method for spacing.

Table 4.1 DISTRIBUTION OF MOTHERS BY AGE AND VILLAGE

AGES

Village No.	<20	20-24	25-29	30-34	35-39	40-44	45+	Unknown	Total
1	3	10	13	15	12	3	3	2	61
2	4	14	17	14	22	8	7	-	86
3	6	17	21	26	17	9	2	1	99
4	7	20	24	13	13	14	5	2	98
5	3	27	31	36	13	14	7	3	134
6	5	24	37	37	21	16	14	2	156
Totals	28	112	143	141	98	64	38	10	634
Percentage	4.4%	17.7%	22.5%	22.2%	15.5%	10.1%	5.9%	1.6%	100%
Cum Percentage	4.4%	22.1%	44.6%	66.8%	82.3%	92.4%	98.4%	100%	

Table 4.2 NUMBER OF MOTHERS WITH LIVING CHILDREN BY SIZE OF FAMILY

NUMBER OF CHILDREN

Village No.	1	2	3	4	5	6	7	8	9	10+	11+	Total
1	8	8	12	13	9	5	4	2	-	1		62
2	16	20	17	7	13	8	4	1	2	-		88
3	21	19	12	14	11	15	8	6	1	1	-	98
4	26	18	15	7	14	8	6	2	-	1	-	98
5	20	28	27	18	14	7	8	5	4	1	1	134
6	42	24	19	21	21	11	9	4	3	2	-	156
Total	133	107	102	80	82	54	39	20	10	6	2	636
Percentage	20.9%	16.8%	16.1%	12.6%	12.6%	8.5%	6.1%	3.1%	1.5%	1%	4%	100%

Table 4.3 NUMBER OF LIVING CHILDREN AND NUMBER OF EVERBORN BY NUMBER OF EVERBORN AND VILLAGE

	No. Everborn	1	2	3	4	5	6	7	8	9	10+	Total	Mothers
Village No.	No. Living	6	9	27	25	56	22	22	31	17	14	229	61
1	No. Everborn	6	10	30	30	70	24	28	40	27	20	294	
	% Survival	100%										71.8%	
	No. Living	13	28	44	26	46	33	50	17	13	17	287	88
2	No. Everborn	13	30	51	32	50	42	63	24	27	20	352	
	% Survival	100%										81.5%	
	No. Living	14	12	31	39	44	54	71	30	35	69	399	98
3	No. Everborn	14	16	39	48	50	60	84	40	45	96	492	
	% Survival	100%										81%	
	No. Living	15	30	28	23	48	48	39	18	33	42	324	99
4	No. Everborn	15	36	36	32	65	66	42	32	45	65	434	
	% Survival	100%										74.6%	
	No. Living	16	38	56	51	45	59	50	64	45	72	496	134
5	No. Everborn	16	40	63	68	55	78	70	80	63	97	630	
	% Survival	100%										79%	
	No. Living	29	37	56	50	84	56	51	59	45	77	544	156
6	No. Everborn	29	48	66	56	95	72	63	72	72	102	675	
	% Survival	100%										80.1%	
Total	No. Living	93	163	242	214	323	272	283	219	188	291	2288	
	No. Everborn	93	180	285	266	385	342	350	288	279	400	2868	
	% Survival		90.5%	84.9%	80.4%	83.9%	79.5%	80.9%	76%	67%	72.7%	79.8%	

Table 4.4 WHOM SEEN DURING PREGNANCY

Var. No. 5

Village No.	No One	Dai	LHV	Doctor	Medical Assistant	Other	Unknown	Total
1	25	22	1	9	2	3	-	62
2	39	29	7	10	1	1	1	88
3	58	22	3	9	-	6	-	98
4	70	14	3	5	-	4	1	97
5	110	15	-	4	-	4	-	133
6	105	19	4	10	2	14	1	155
Total	432	121	18	47	5	32	3	633
%	68.2%	19.1%	2.8%	7.4%	0.8%	5.1%	0.3%	100%

Table 4.5 ADVICE DURING PREGNANCY - SOURCES (EXCLUDES DIETARY ADVICE)

Village No.	No Advice	Mother-in Law	Self-Advised	Dai/ Midwife	Doctor	Other	Unknown	Total
1	2	3	9	1	3	5	39	62
2	-	2	11	2	6	9	57	87
3	-	1	16	2	3	2	74	98
4	-	1	1	-	-	10	85	97
5	1	2	-	-	-	9	121	133
6	1	-	1	-	-	24	128	154
Total	4	9	38	5	12	59	504	631
%	0.6%	1.4%	6.0%	0.6%	1.9%	9.3%	79.7%	100%

Table 4.6 FREQUENCY WITH WHICH MOTHERS RECALL TAKING PILLS DURING PREGNANCY, WITH INDICATIONS FOR USE.

Village No.	No.	Pills Taken		Reasons: Malaria		Illness		Weakness Anemia		Not Applicable*	
		No.	%	No.	%	No.	%	No.	%		
1	62	22	35.5	1		18		3		40	
2	88	32	36.4	3		20		9		56	
3	97	28	31.8	2		12		11		70	
4	97	21	21.6	3		10		8		76	
5	133	12	9.0	1		9		2		121	
6	154	53	34.4	1		21		30		101	
Total	631	168	26.6	11	4.2	90	14.3	63	10.0	464	73.4%

* DID NOT TAKE PILLS

Table 4.7 PRECAUTIONS TAKEN DURING PREGNANCY

Village No.	None	Avoid Heavy Lifting	All Other	Total
1	39	17	6	62
2	57	23	8	88
3	74	17	7	98
4	85	1	11	97
5	121	4	8	133
6	128	2	24	154
Totals	504	64	64	632
Percentages	79.8%	10.1%	10.1%	

Table 4.8 DIET IN PREGNANCY - SOURCES OF ADVICE

Village No.	No Advice	Mother-in Law	Self-Advised	Dai/ Midwife	Doctor	Other	Unknown	Total
1	2	1	28	4	2	2	23	62
2	2	1	44	1	7	3	27	85
3	4	3	26	3	5	3	49	90
4	2	6	5	3	3	5	73	97
5	1	6	6	1	1	2	116	133
6	1	3	6	-	-	25	117	152
Total	12	20	115	12	18	40	405	619
Percentages	1.9%	3.2%	18.6%	1.9%	3.2%	6.5%	65.5%	100%

Table 4.9 DIET IN PREGNANCY

FREQUENCY WITH WHICH GRAVIDA CONSUMED EXTRA AMOUNT OR AVOIDED SPECIFIED DIETARY ITEMS DURING PREGNANCY

Village No.	Milk/Curds		Meat/Eggs		Fruit/Vegetables		Calories		Mud/Clay Consumed	Total
	Extra	Avoided	Extra	Avoided	Extra	Avoided	Extra	Avoided		
1	27	1	2	4	11	0	3	3	6	62
2	42	1	4	7	25	3	4	1	7	88
3	33	2	7	5	15	-	3	1	4	98
4	19	-	3	3	1	-	3	-	-	97
5	13	-	-	2	1	3	-	1	-	133
6	9	2	2	21	1	-	6	-	1	154
Total	143	6	18	42	54	6	19	6	18	632
Percentage	22.6%	1%	2.8%	6.6%	8.5%	1%	3%	1%	2.8%	100%

Table 4.10 BIRTH INTERVALS

Village No.	2 - 12 Mo.	12 - 15 Mo.	16 - 18 Mo.	19 - 21 Mo.	22 - 24 Mo.	25 - 30 Mo.	31 - 36 Mo.	37 - 48 Mo.	49+ Mo.	Total
1	1	1	7	3	8	7	7	10	2	46
2	4	5	2	4	7	14	10	8	8	62
3	0	4	3	5	11	16	7	12	4	62
4	0	1	1	3	7	9	20	7	4	52
5	0	1	3	4	18	26	16	16	10	94
6	1	4	2	4	18	11	19	14	16	89
Total	6	16	18	23	69	83	79	67	44	405
Percentage	1.5%	4.0%	4.4%	5.7%	17.0%	20.5%	19.5%	16.5%	10.9%	100%
Cumulative Percentage	1.5%	5.5%	10.1%	15.8%	32.8%	53.3%	72.8%	89.3%	100%	

Table 4.11 STRUCTURE OF FAMILY PLANNING QUESTION

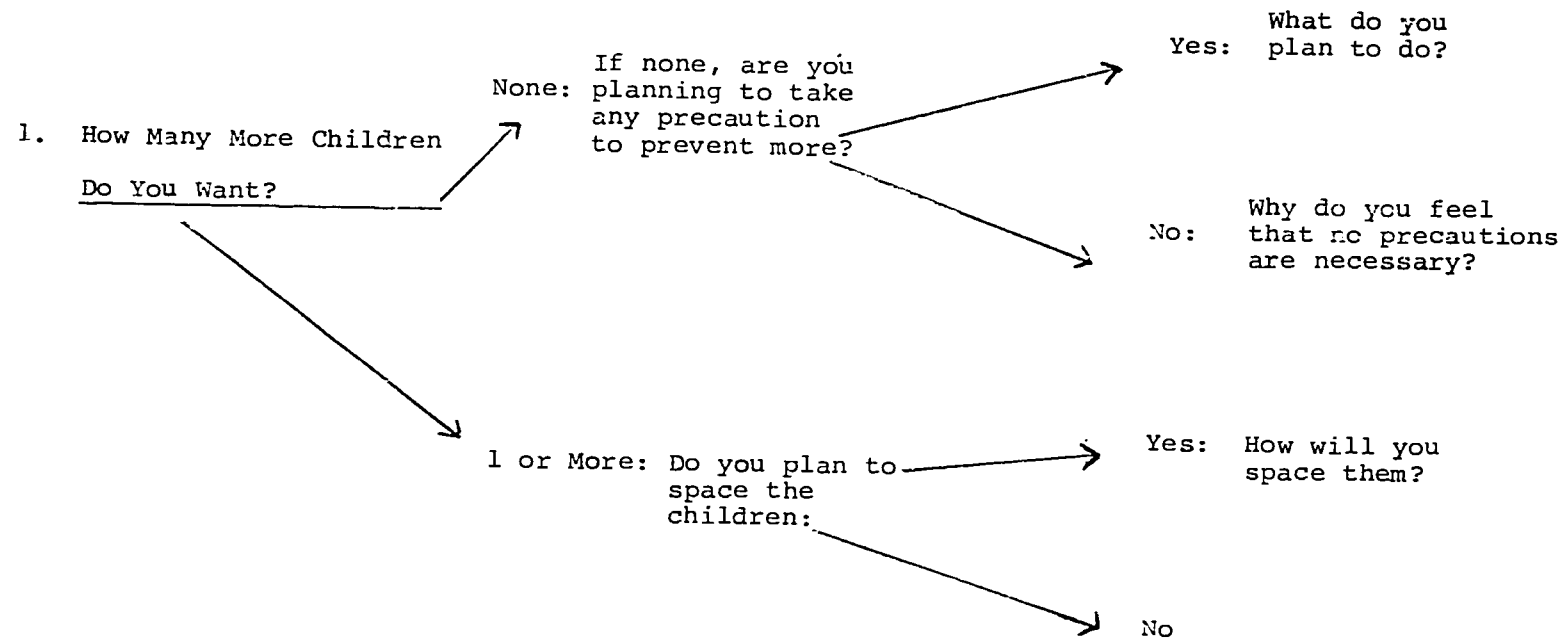

Table 4.12 FAMILY PLANNING PATTERNS OF MOTHERS WITH 2 OR MORE LIVING CHILDREN

	Village No.		1	2	3	4	5	6	Combined Totals
1.	No. of Mothers Wanting More Children	No.	22	36	34	35	69	48	244
		%	41%	50%	45%	49%	60%	42%	48.8%
2.	No. of Mothers NOT Wanting More Children	No.	31	36	41	37	45	66	256
		%	58%	50%	55%	51%	39%	58%	51.2%
3.	No of Mothers Not Wanting More Children Who Indicate They are taking Precautions	No.	10	12	6	4	2	3	37
		%	19%	16%	8%	6%	2%	3%	7.4%
4.	Methods Used Permanent F.P.	No.	3	1	0	1	-	1	6
		%	6%	1%	0%	1%	-	1%	1.2%
	Temporary P.P.	No.	7	10	6	3	2	2	30
		%	13%	14%	8%	4%	2%	2%	6%
5.	No Precautions Now	No.	21	24	35	33	43	63	219
		%	40%	33%	47%	46%	38%	55%	43.8%
	A Will In Future	No.	7	18	12	9	7	19	72
		%	13%	25%	16%	12%	6%	17%	14.4%
	Probably Will Not In Future	No.	14	6	23	24	36	44	147
		%	26%	8%	31%	33%	32%	39%	29.4%

Table 4.13 NUMBER OF ADDITIONAL CHILDREN DESIRED BY SAMPLE MOTHERS

Village No.	No More	1 More	2 More	3 More	4 More	5 More	6 - 7	Total
1	34	6	7	8	6	1	-	62
2	36	11	19	6	6	-		88
3	40	7	18	15	16	1		97
4	45	6	17	5	22	1		99
5	46	11	20	18	36			133
6	71	8	15	10	49	1	-	155
Total	272	49	96	62	135	4	3	634
Percentages	42.9%	7.7%	15.1%	9.8%	21.3%	.6%	.5%	100%

TABLE 4.14 PLANS TO SPACE CHILDREN - WOMEN DESIRING MORE CHILDREN

Village No.	Pregnant Already	No Plans	Planning To Space	TOTAL
1	5	3	20	28
2	12	4	36	52
3	10	11	30	51
4	11	19	27	57
5	11	52	22	85
6	11	40	30	81
TOTALS	60	129	165	354
PER-CENTAGES	16.9%	36.4%	46.6%	100%

METHOD USED FOR SPACING

Husband Away	Abstinence	None	Other Method	Unknown	TOTAL
7	3	10	2	1	23
5	11	15	6	-	37
2	5	14	8	-	29
-	-	17	10	-	27
-	-	15	9	-	24
-	-	27	3	-	30
14	19	98	38	1	170
8.2%	11.2%	57.6%	22.3%		100%

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3.3.2 Child-Rearing Practices

a. Early Infant Feeding.

Each mother was asked the age of the infant when breast feeding was started. Less than 20% of the mothers began to nurse their infants within 24 hours, and only one third of the sample were nursing by 48 hours (Table 4.15). It was discovered that few mothers give their children the first milk, which is generally considered harmful. Rather, arak or other milk is usually offered first. (Table 4.16). An attempt was made to separate the offering of this early fluid from the commencement of non-human milk feedings. Thus, in Table 4.17 it appears that nearly 40% of the mothers deny giving their children any milk besides their own. On examining the age of introduction of other milk into the diet (Table 4.18), it appears that 66% of infants over 12 months of age are offered cow or buffalo milk. No attempt was made to quantify this item of their diet. The duration of breast feeding was estimated by determining whether each of the index children were currently receiving breast milk, and if not, at what age their breast milk feedings had been discontinued. These results, shown in Table 4.19, revealed that 97% of the infants in the 7 - 9 month old group were still receiving breast milk. That was down to 91% by 10 - 15 months, 73% by 16 - 21 months and 28% by 22 - 27 months. The majority of mothers continue breast feeding for 1 1/2 to 2 years.

Introduction of appropriate weaning foods at an early age represents a major health education goal of the Basic Health Services. Thus, it is important to note that less than 6% of infants are offered solid foods below 6 months, while 60% have been offered solid foods by 7 - 9 months (Table 4.20). Each mother was asked what she had offered her infant as the first weaning food. The results of this query are set forth in Table 4.21. Over 80% of the infants were offered the traditional stable of chapattis as the first weaning food. Fifty percent were given rice. Particularly unsuitable, in the view of the mothers, was the use of a gruel such as kitcheri as an early weaning

food. This is of interest in that early introduction of nutritious and palatable infant foods is a major goal of the Basic Health Services in relationship to infant nutrition.

For each infant, a 24 hour dietary recall was carried out. Then the mothers were queried specifically about certain dietary items (milk, meat, eggs, fruit, green vegetables and pulses) to determine wher they were last consumed. The results of this question are set out in Table 4.22. It will be seen that milk had been consumed by 47 - 71% of the group of children. Likewise, fruit (usually banana) and some type of green vegetable had been consumed within the previous 48 hours by roughly half of the children. The other groups of foods were consumed by a far smaller proportion of the children.

b. Illness Experience.

In order to determine how these mothers managed two specific and common disorders, questions were asked about diarrhea and skin disease. First, the most recent episode of diarrheas in the index child was sought. The results, shown in Table 4.23, indicate that 14% of the population of index children were currently ill with diarrhea, and 40% had been sick within the month. Although 60% indicated that their child had had diarrhea in the more distant past or not at all, illness prevalence from recall surveys beyond 2 - 4 weeks are noted for their underreporting. Mothers who indicated that their children had had diarrhea were asked about their management of it. They were specifically queried about whether they gave or withheld water. About 30% indicated that extra water was offered. The majority of respondents appeared to be unaware of the importance of extra water in the presence of diarrhea. (Table 4.24).

The last episode of skin trouble was asked about and approximately 8% of the children were considered by their mothers to have a skin problem at the present time. (Table 4.25). An additional 9% had had a skin problem within the previous month. There is only a rough agreement between this prevalence of skin

disease, village by village, and the proportion of children found to have a skin lesion of an infectious nature by the interviewers (Table 4.26). Although each mother was asked how she managed the skin lesion, only the use of water and/or soap in the treatment was coded and analyzed. As shown in Table 4.27 only 10% of mothers actually mentioned water and/or soap in the management of their child's skin lesions, although the vast majority of the skin lesions were Pyoderma.

TABLE 4.15 INITIATION OF BREAST FEEDING

Village No.	0-11 hrs.	12-24 hrs.	24-48 hrs.	48-72 hrs.	Later	No B.F.	TOTAL
1	2	3	10	42	4	1	62
2	1	4	28	45	10	-	88
3	1	-	4	87	5	1	98
4	17	9	18	50	1	2	97
5	23	11	29	69	1	-	133
6	1	1	57	95	-	1	154
TOTALS	45	28	146	388	21	5	633
CUMULATIVE PERCENTAGES	7%	18.6%	34.6%	96%	99%	100%	

TABLE 4.16 FIRST FLUID OFFERED TO INFANT

	A. MATERNAL MILK (COLOSTRUM) GIVEN				B. OTHER FLUIDS				
Village No.	Yes	No	Unknown	TOTAL	None	Milk	Arak	Combination	TOTAL
1	7	54	1	62	-	-	50	12	62
2	1	85	2	88	3	1	65	19	88
3	3	94	1	98	2	1	84	11	98
4	1	94	2	97	3	46	15	32	97
5	1	129	3	133	2	10	29	92	133
6	-	145	9	154	-	4	57	94	154
TOTAL	13	601	18	632	10	62	300	260	632
PERCENTAGE	2%	95%	3%	100%	1.7%	9.8%	47.5%	41.0%	100%

TABLE 4.17 OTHER MILK OFFERED TO INFANT

Village No.	No	Buffalo	Other Milk	TOTAL
1	32	26	4	62
2	20	55	13	88
3	38	49	11	98
4	36	21	40	97
5	64	37	31	132
6	54	69	31	154
TOTAL	244	257	130	631
PERCENTAGE	38.7%	40.7%	20.6%	100%

TABLE 4.18 PATTERN OF INTRODUCTION OF COW/BUFFALO MILK

	Village No.		1	2	3	4	5	6	COMBINED
1.	Under 12 month Sample Cow/buffalo milk begun		7(20)	22(31)	14(30)	20(35)	18(47)	30(53)	111/216
	% of under 1 yr. sample given cow/buffalo milk		35%	71%	45%	57%	38%	57%	51%
2.	12-24 month old Sample milk begun 0-11 months	#	13(32)	17(28)	13(36)	22(42)	20(48)	26(50)	111/236
		%	41%	61%	36%	52%	42%	52%	
	milk begun 12+ months	#	4	4	9	3	8	6	
	cumulative percentage		53%	75%	61%	59%	59%	64%	47%
3.	25+ month old sample milk begun 0-11 months	#	4(9)	13(29)	15(30)	14(22)	14(36)	19(51)	111/177
		%	44%	45%	48%	64%	39%	37%	
	milk begun 12+ months	#	2	12	8	2	7	19	
	cumulative percentage		67%	86%	74%	73%	58%	74%	63%
4.	No. and percent of infants over 11 months of age receiving cow/buffalo milk	#	23(41)	46(57)	45(66)	41(64)	49(84)	70(101)	274/413
		%	56%	80%	67%	64%	58%	69%	66%

TABLE 4.19 DURATION OF BREAST FEEDING

Village No.	Age Group:	0-3 mo.	4-6 mo.	7-9 mo.	10-15 mo.	16-21 mo.	22-27 mo.	28-33 mo.
1	No. in age group	11	2	5	20	5	16	3
	No. still on breast	10	2	5	16	3	3	2
2	No. in age group	14	6	6	17	10	13	10
	No. still on breast	14	6	3	17	5	1	1
3	No. in age group	11	7	5	21	12	13	6
	No. still on breast	11	7	5	21	8	6	0
4	No. in age group	13	12	5	26	14	9	8
	No. still on breast	13	11	5	24	11	3	2
5	No. in age group	20	14	7	24	10	20	8
	No. still on breast	20	14	7	21	8	6	1
6	No. in age group	23	13	8	34	16	10	17
	No. still on breast	22	13	7	30	14	4	1
TOTAL NO. IN AGE GROUP		92	54	35	142	67	81	52
TOTAL NO. STILL ON BREAST		90	53	32	129	49	23	7
	PERCENTAGE	98%	98%	91%	91%	73%	28%	14%

TABLE 4.20 AGE AT WHICH SOLID FOODS ARE BEGUN

Village No.	Age Group:	0-6 mo.	7-9 mo.	10-15 mo.	16-21 mo.
1	Sample no.	13	5	20	5
	No. started	0	3	19	5
2	Sample no.	20	6	17	10
	No. started	0	4	16	10
3	Sample no.	18	5	21	12
	No. started	0	4	19	12
4	Sample no.	25	5	26	14
	No. started	3	5	22	13
5	Sample no.	34	7	24	10
	No. started	2	2	15	9
6	Sample no.	36	8	34	16
	No. started	3	4	31	15
TOTAL	Sample No.	146	36	142	67
	Percent started	5.5%	61%	86%	95%

TABLE 4.21 FIRST FOODS OFFERED TO INFANT

NUMBER OF MOTHERS INDICATING THAT THEY OFFERED THEIR INFANT THE FOLLOWING ITEMS:

Village No.	No.	Rice	Banana	Wheat Product	Kitcheri
1	44	32	14	44	8
2	66	46	20	64	11
3	98	66	30	74	1
4	97	40	5	67	-
5	83	50	12	78	13
6	155	41	14	110	-
TOTALS	543	275	95	437	33
PERCENTAGE GIVEN EACH FOOD		50.6%	17.5%	80.4%	6.1%

TABLE 4.22 PERCENTAGE OF SAMPLE CONSUMING SPECIFIED ITEMS WITHIN PREVIOUS 48 HOURS BY AGE

AGE GROUP	No.	MILK/CURDS	MEAT	EGGS	FRUIT	GREEN VEGETABLE	DAHL/PULSE
13-15 mo.	60	57%	5%	8%	38%	12%	8%
16-18 mo.	58	47%	5%	7%	53%	26%	10%
19-21 mo.	16	63%	19%	25%	69%	50%	13%
22-24 mo.	73	71%	5%	12%	60%	37%	12%
25-36 mo.	216	71%	8%	16%	46%	52%	32%
37-48 mo.	197	71%	14%	21%	31%	55%	29%
49-60 mo.	96	67%	5%	5%	46%	58%	32%

TABLE 4.23 NUMBER AND CUMULATIVE PERCENTAGE OF UNDER 5'S SAMPLE WITH HISTORY OF DIARRHEA

Village No.	Now sick	Sick within 1 week	Sick 1-4 wks.	Sick 1-6 mos.	Sick over 6 mos.	No hx	TOTAL
1	7	13	19	25	11	24	99
2	17	19	23	37	14	26	136
3	17	22	31	45	19	21	155
4	21	19	11	10	4	84	149
5	32	16	30	49	17	76	220
6	39	24	30	43	40	47	223
TOTAL	133	113	144	209	105	278	982
CUMULATIVE NO.	133	246	390	599			
CUMULATIVE PERCENTAGE	14%	25%	39.7%	61%			

TABLE 4.24 WATER USED IN MANAGEMENT OF DIARRHEA*

VILLAGE NO.	EXTRA WATER GIVEN	WATER AVOIDED	NO WATER OFFERED OR WITHHELD	TOTAL
1	37	-	38	75
2	49	9	54	112
3	62	23	49	134
4	16	2	47	65
5	19	14	113	146
6	26	10	141	177
TOTALS	209	58	442	709
PERCENTAGES	29.5%	8.1%	62.3%	100%

*TOTAL = Mothers who described management of index child's diarrhea.

TABLE 4.25 HISTORY OF SKIN DISEASE

Village No.	Currently sick	Sick within last 1 wk.	Sick within last 1-4 wks.	Sick 1-6 mos. ago	Sick over 6 mos.	No hx	TOTAL
1	5	5	16	13	8	50	97
2	21	8	10	40	11	45	135
3	10	4	6	51	15	61	147
4	11	2	7	15	4	105	144
5	18	3	7	49	6	131	214
6	15	2	14	30	14	142	217
TOTALS	80	24	60	198	58	534	954
PERCENTAGE	8.4%	2.5%	6.3%	20.7%	6.1%	56%	

TABLE 4.26 FREQUENCY OF INFECTIOUS SKIN DISEASE IN UNDER 5'S BY VILLAGE

Village No.	Total	No.	Percent	Percent by maternal history
1	99	24	24%	10%
2	136	37	27%	21%
3	16	155	10%	9%
4	26	149	17%	9%
5	24	222	11%	9.8%
6	42	225	19%	7.8%

TABLE 4.27 USE OF WATER AND/OR SOAP MENTIONED IN MOTHER'S DESCRIPTION OF SKIN DISEASE MANAGEMENT

Village No.	No mention	Water and/or soap mentioned	TOTAL*
1	38	9	47
2	76	15	91
3	43	-	43
4	43	-	43
5	78	9	87
6	79	6	85
TOTAL	357	39	396
PERCENTAGE	90%	10%	

*Mothers who described management of index child's skin disease.

3.3.3. Utilization of Health Services

An attempt was made to determine the pattern of utilization of health services, based on the interview with mothers. Thus, each mother was asked when the last illness occurred within the family which was severe enough to require outside consultation. The individual and the nature of the illness were determined, and the person consulted documented. It was found that approximately 15% of the sample of families had had such an illness within the previous week, and 36% within the previous month. Cumulatively, 75% had had such an episode within the previous six months (Table 4.28). The individual concerned and the nature of the complaint were not tabulated. However, he source of help was queried and the results, shown in Table 4.29 document the significant role played by the village practitioners. Fully 45% of the illness episodes were brought to their attention. In descending order of importance, the Basic Health Units and/or Rural Health Centres handled 27% of the episodes, while a variety of other providers handled another 15%. There was a large amount of variation from one village to another, with 57% of the episodes handled by the RHC or BHU in village one, and only 5% or 14% in villages 5 and 3 respectively.

TABLE 4.28 ILLNESS EXPERIENCE IN SAMPLE OF FAMILIES

INDIVIDUAL CONSULTED FOR HELP

Village No.	No One	BHU/RHC	Village Practitioner	Other	Not Applicable	Total
1	1	35(57%)	13	6	6	61
2	2	47(53%)	19	14	6	88
3	1	14(14%)	50	26	5	96
4	6	33(34%)	33	17	8	97
5	7	7(5%)	93	15	11	133
6	10	33(21%)	73	11	28	155
TOTALS	27	169	281	89	64	630
	4.3%	26.8%	44.6%	14.1%	10.2%	100%

TABLE 4.29 ILLNESS EXPERIENCE IN SAMPLE OF FAMILIES

Village No.	DURATION SINCE ILLNESS SEVERE ENOUGH TO SEEK HELP OUTSIDE OF HOME: Less than 1 week	1-4 wks.	1-6 mos.	Over 6 mos.	None	Total
1	4	13	23	9	5	54
2	18	21	22	15	6	82
3	15	10	66	13	6	110
4	11	26	31	18	8	94
5	19	40	48	14	11	132
6	24	23	55	23	28	153
TOTALS	91	133	245	92	64	625
PERCENTAGES	14.5%	21.2%	39.2%			
CUMULATIVE PERCENTAGES	14.5%	35.7%	75.0%			

3.3.4 Measurement Data

During the health survey, each of the children about whom information had been obtained was measured by the medical technicians. The data obtained included height (length under 2 years of age), weight, and upper arm circumference. In addition, the children's skin was examined for evidence of skin disease.

a. Upper arm circumference

The mean upper arm circumferences, by village and age, are shown in Table 4.30 together with the standard deviation of the means. In Table 4.31 are shown the 10th, 50th and 90th percentiles for the entire sample, by age. These results may be compared to the Ten State Nutrition Survey findings from the U.S.A. (Table 4.32). It will be noted that the 50th percentile for the Pakistani children roughly corresponds to the 5th percentile for the U.S. sample. No other external comparisons have been made, because data was unavailable for this purpose.

b. Weight

Table 4.33 displays the means and standard deviations for the children's weights in the present survey. In Table 4.34, the 10th, 50th and 90th centiles for weight have been presented for the entire sample of children. Only village 4 appears to have somewhat lower means than the other villages.

c. Height/Length

In Table 4.35 the mean heights or lengths have been presented, together with the standard deviations, by age and village. Again, village 4 appears to be systematically below the other villages. In Table 4.36 the centiles and ranges for height have been presented.

TABLE 4.30 UPPER ARM CIRCUMFERENCES, MEANS AND STANDARD DEVIATIONS BY AGE AND VILLAGE

Village No.:	1	2	3	4	5	6
1-3 mos.	116±11.4	117±15.0	107±14.6	100±17.2	107±13.5	102±10.6
4-6 mos.	147	127±12.6	125± 3.9	115±15.4	118± 8.5	120±10.2
7-9 mos.	143±10.9	132±24.6	138±15.1	121± 9.4	114± 7.7	128±13.3
1 year	135±13.3	135±16.3	131±11.9	118±11.7	123±14.5	132±14.1
1 1/2 yr.	139±10.1	136±13.4	134±12.6	123± 9.3	128±15.9	131±13.4
2 years	140±10.2	144±14.0	138±12.2	128±11.4	129±10.8	143± 7.8
2 1/2 yrs.	142±13.2	142± 8.6	145±10.0	129± 8.1	134± 7.8	142±14.2
3 years	148± 8.6	151±10.8	146± 8.2	137± 9.4	142±10.5	144± 8.1
3 1/2 yrs.	153± 6.9	150± 8.9	151± 8.7	137±13.6	141±13.1	147±13.4
4 years	152± 8.2	152± 8.8	151± 8.5	137±10.1	141±10.9	149± 8.3
4 1/2 yrs.	152±10.3	152± 4.4	143± 9.4	145± 9.3	148±11.6	152±14.8
5 years		150	150	152± 2.0	141±11.1	151±10.0

Table 4.31 UPPER ARM CIRCUMFERENCE, CENTILES AND RANGE, BY AGE

Age Group Months	Total	10th	50th	90th	Range
1 - 3	92	88	107	130	66 - 137
4 - 6	54	100	123	134	92 - 149
7 - 9	39	108	129	156	81 - 162
10 - 15	148	110	128	150	81 - 167
16 - 21	74	110	130	152	100 - 160
22 - 27	109	120	136	152	106 - 175
28 - 33	85	125	140	155	114 - 172
34 - 39	134	130	143	158	120 - 165
40 - 45	66	129	149	162	109 - 172
46 - 51	126	130	147	160	110 - 167
52 - 57	45	131	150	163	125 - 177
58 - 60	15		152		128 - 170

Table 4.32 EXTERNAL COMPARISON STANDARDS - UPPER ARM CIRCUMFERENCE

(TEN STATE NUTRITION SURVEY - U. S. A.)*

Age		5th	50th	95%
3 - 6 Mo	M	113	134	153
	F	107	127	150
0.5 - 1.4 Yrs.	M	128	152	175
	F	125	146	170
1.5 - 2.4 Yrs.	M	141	157	180
	F	136	155	180
2.5 - 3.4 Yrs.	M	144	161	182
	F	137	157	176
3.5 - 4.4 Yrs.	M	143	165	190
	F	145	162	184

* Reference

A. Roberto Frisancho
Triceps skin fold and upper arm muscle size norms for assessment of nutritional status
Am. J. Clin. Nutrition 27:1052, 1974

TABLE 4.33 MEANS AND STANDARD DEVIATIONS FOR WEIGHT BY VILLAGE AND AGE GROUP

Village No.:	1	2	3	4	5	6
0-3 mos.	4800 ± 820	4714 ± 1155	4163 ± 1128	3800 ± 981	3865 ± 839	3656 ± 850
4-6 mos.	7400 ± 200	6416 ± 1010	5614 ± 364	5475 ± 826	5185 ± 809	5154 ± 913
7-9 mos.	7660 ± 943	7216 ± 1928	7350 ± 932	6200 ± 723	5428 ± 413	6955 ± 914
1 year	7642 ± 1376	7922 ± 2025	7745 ± 1229	6661 ± 1005	6855 ± 1422	7452 ± 1161
1 1/2 yr.	8920 ± 915	8530 ± 1777	8350 ± 888	7671 ± 941	8171 ± 1724	7670 ± 1341
2 years	9931 ± 1709	10182 ± 1586	9717 ± 1429	8823 ± 1185	8434 ± 1097	10100 ± 946
2 1/2 yrs.	10716 ± 1329	10370 ± 1319	11392 ± 1232	9677 ± 1032	9823 ± 1207	10273 ± 1864
3 years	12088 ± 1244	12386 ± 1652	11442 ± 1293	10865 ± 1203	11002 ± 1623	11372 ± 1344
3 1/2 yrs.	12285 ± 681	13360 ± 1868	12830 ± 1274	10728 ± 1609	11375 ± 2348	12300 ± 1598
4 years	12607 ± 1435	13691 ± 1201	13242 ± 1249	12173 ± 1919	12513 ± 1552	13211 ± 1903
4 1/2 yrs.	13133 ± 825	14071 ± 1830	13300 ± 1720	13920 ± 1764	13714 ± 1325	14333 ± 1839
5 years		13600	14800	14400 ± 1000	14160 ± 1617	14566 ± 2249

Table 4.34 WEIGHT CENTILES AND RANGES BY AGE

Age Group Months	Total	10th	50th	90th	Range
1 - 3	92	2800	4000	5600	1900 - 6700
4 - 6	54	4500	5400	6650	2600 - 8400
7 - 9	39	5100	7000	8500	3800 - 9900
10 - 15	148	5500	7200	9100	3800 - 14,800
16 - 21	74	6200	8100	9980	4800 - 11,000
22 - 27	109	7400	9300	11,400	6400 - 15,200
28 - 33	85	8550	10,300	12,550	4700 - 13,800
34 - 39	134	9680	11,200	13,360	7800 - 15,600
40 - 45	66	10,000	12,300	15,800	5900 - 16,600
46 - 51	126	11,000	13,100	15,800	6800 - 17,000
52 - 57	45	11,300	13,600	16,000	10,200 - 18,200
58 - 60	15		13,500		12,000 - 18,600

TABLE 4.35 MEANS AND STANDARD DEVIATIONS FOR HEIGHT, BY VILLAGE AND AGE

Village No.	1		2		3		4		5		6	
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
1-3 mos.	56.6	2.9	56.2	4.2	53.4	3.2	53.4	6.9	53.2	3.6	52.7	4.0
4-6 mos.	65.5	1.5	62.2	2.5	59.7	1.1	61.3	1.9	60.1	2.6	59.9	3.9
7-9 mos.	65.6	3.3	65.0	5.8	67.8	2.9	63.4	3.4	61.0	3.3	67.1	3.2
1 year	70.9	4.2	71.6	6.7	71.0	4.4	68.2	3.1	68.1	4.2	69.5	3.6
1 1/2 yr.	75.4	3.5	74.6	4.3	71.8	7.7	73.1	3.5	73.8	4.8	71.7	4.4
2 years	78.9	4.5	80.9	5.8	78.0	3.3	76.5	3.6	75.7	2.8	79.4	3.7
2 1/2 yrs.	82.0	3.6	81.2	5.0	84.0	3.6	79.4	2.9	79.1	3.4	80.3	5.6
3 years	88.0	3.7	88.2	5.2	85.2	4.8	84.2	5.1	83.8	4.3	85.1	5.1
3 1/2 yrs.	90.6	3.2	94.8	6.5	91.3	5.3	82.6	5.5	86.1	8.3	88.9	4.4
4 years	95.1	4.6	95.7	5.4	93.0	5.1	89.8	6.2	91.6	5.0	91.6	6.3
4 1/2 yrs.	93.3	4.1	97.4	7.5	94.3	6.9	95.0	3.3	94.5	4.5	96.5	2.9
5 years			94.0		98.0		97.0		96.8	4.0	95.7	7.1

TABLE 4.36 HEIGHT CENTILES AND RANGES, BY AGE

Age Group months	Total	10th	50th	90th	Range
1-3	92	48	54	60	38- 68
4-6	54	57	61	64	50- 67
7-9	39	60	65	71	55- 72
10-15	148	64	70	74	61- 96
16-21	74	66	74	79	47- 81
22-27	109	73	78	82	69- 98
28-33	85	76	81	88	60- 90
34-39	134	78	85	92	75- 99
40-45	66	81	90	98	67-108
46-51	126	84	93	101	70-105
52-57	45	88	95	100	80-113
60	15	-	95	-	83-104

TABLE 4.37 WEIGHT/HEIGHT^2, CENTILES AND RANGE BY AGE, ENTIRE SAMPLE

Age Gr.	Total	10th	50th	90th	Range
1-3	92	1.13	1.33	1.66	1.02-2.02
4-6	54	1.25	1.50	1.70	1.04-1.87
7-9	39	1.40	1.55	1.81	1.24-2.18
10-15	148	1.28	1.50	1.69	.89-1.91
16-21	74	1.29	1.49	1.67	1.13-1.86
22-27	109	1.33	1.56	1.71	1.09-1.82
28-33	85	1.41	1.55	1.75	1.29-1.86
34-39	134	1.41	1.57	1.72	1.24-1.90
40-45	66	1.37	1.52	1.65	1.31-1.86
46-51	126	1.38	1.50	1.70	1.51-2.06
52-57	45	1.36	1.50	1.69	1.24-1.80
58-60	15				1.42-1.89

5. Summary

This Baseline Survey was carried out in order to document certain parameters of health status in villages near to facilities which are to be operated by the Punjab Health Department and staffed by medical technicians. For this reason, emphasis was placed, in the survey, on parameters of health status which are, in theory, within the purview of the health department.

The questionnaires and measurements have provided data of a quantitive or semi-quantitative nature. Although there are few "rates" for comparison with other populations, the data provides the basis for a subsequent comparison in 4 or 5 years time.

Of particular interest are the documented patterns of maternal care during pregnancy, infant feeding habits, and management of simple but important diseases such as impetigo and infectious diarrhea. The nutritional status of the under 5's has been well documented. Thus, the major objectives of the survey have been met.

The data speaks for itself. The villages are bereft of official health care. There is an urgent demand for effective family planning and child health services. There is need for advice and direction in the improvement of environmental hygiene. Clearly, one would hope that the health department can begin to bring its resources to bear on these rural health problems through an expanded and improved system of rural health services. This Baseline Survey will provide objective evidence of the health status of six fairly representative villages in the Punjab in the fall of 1980. Hopefully, the data will be of value in documenting the nature and extent of change in these health parameters in the course of time.

APPENDIX 1

MCH PRACTICES VILLAGE_____BLOCK_____HOUSE NO.___

INTERVIEWER NO. _____RESPONDENT_____DATE_____

1. The purpose of our visit is to find out what your experience has been in having children and in caring for them. We would like to ask you some questions about your pregnancies and about your children's health. We are interested mainly in the children under 5 years.

2. Let us start with the youngest LIVING child? NAME_____

3. When was his/her birth?_____AGE_____
(Record Punjabi months if known) months/year Years: Month

4. Is child in good health? Yes No (Mother's opinion)

5. If not, what is the problem?_____

6. Did you have any problem or difficulty with this pregnancy?
Yes No

7. If so, what kind of problem?_____
(record briefly symptoms)

8. For this child's pregnancy, who did you see during the pregnancy?

_____

9. Where was the child born? Home_____Other(specify)_____

10. Did you observe any special precautions during this pregnancy? That is, were there any things which you did or did not do during the pregnancy?

_____

11. If so, who recommended them (if more than one, number each)

_____

12. Were there any food or milk products which you avoided or ate extra amounts of during your pregnancy? (Number each)

_____

13. If so, who recommended them?_____

14. Did you take any pills during the pregnancy? Yes No

15. If so, what were they for?_____
(If for Malaria, ask about other pills and record)

16. Did you breast feed your infant? Yes No

17. How soon after delivery of this child did you start breast feeding? 0-11 hours 12-24 hours 24-48 hrs 48-72 hrs later

18. Was the first milk that you had from your breast given to the infant? Yes No

19.. What other liquids/fluids/milk did you give to your infants in the first two weeks of life? No other_____ Milk (specify)_____Other liquids (specify)_____

20. Besides what you have already mentioned to me, have you given your infant any milk besides your breast milk? Yes No

21. If so, what kind of milk?_____

22. How old was baby when you began to give this milk?_____

23. Is this child still receiving breast milk? Yes No

24. If not,at what age did you stop breast feeding infant?_____

25. If not, what were the reasons for stopping breast feeding?

_____

26. How old was infant when you started giving solid food?_____

27. INTERVIEWER: IF NO SOLID FOOD YET, ASK: When do you plan to start giving solid food along with milk?_____

28. What were the first three solid foods which you offered to this child?_____

29. What do you feel is the best food to start with for the child_____

30. Some mothers give their children special foods like kitcheri beginning at 5-6 months of age. Do you think it is good for the child?_____(Record mother's comment)_____

_____

31. In order to get an idea of what you child is eating at the present time, I would like to have you tell me everything he/she has eaten and drunk in the last 24 hours. INTERVIEWER: Ask time of morning meal, food items eaten, and amounts. Record one item per line. Work back through previous 24 hours and include yesterday's breakfast.

Time	Food Item	Amount of each item

32. When above is completed, ask: less than 2 days - 2-7 days over 1 week

When is the last time he/she ate Banana_____
Orange_____
Apple_____
Grapes_____
Other Fruit_____
When is the last time he ate eggs_____
meat_____
green vegetables_____

33. Has this child ever had diarrhea? Yes No Has it now

34. If so, when was the episode? Now sick 1-7 days 1-4 wks 1-6 mos Over 6 mos

35. For the most recent episode of diarrhea, would you tell me how you treated the Child? INTERVIEWER: Probe: Diet Change, Treatment Outside of home, Home remedies.

_____

_____

36. Did you give extra water to the child or keep water from child during the diarrhea? (Record Mother's comments)

_____

37. Has this child had any skin diseases? Yes No Don't Know

38. If so, how long ago? Now 1-7 days 1-4 weeks 1-6 mos. Over 6 mos.

39. What is/was the disease called? (Local Word)_____

40. What did you do for it? (1)_____

41. What Else? (2)_____

42. Anything Else? (3)_____

43. If so, what was the out come?_____ _____
(Abortion, stillbirth, live birth and subsequent death)

44. INTERVIEWERS: Ask about each child, beginning with next older child: Record Name, year of birth or current age, and current status (Alive/dead)

Name	Birth year of Age	Status(Alive Dead)

45. Have you had any other pregnancies in which child died at birth or after birth INTERVIEWERS:(Record any additional pregnancies in above list)

FAMILY PLANNING

46. How many more children do you want to have? None (Go to next question) Circle one answer: 1, 2, 3, 4, +(Go Q. 50)

47. If none, are you planning to take any precaustions to prevent more? YES NO (Go to Q.49)

48. What do you plan to do?_____

49. Why do you feel that no precautions are necessary?

_____

50. If wanting more children do you plan to space the children? (Circle one)

Already pregnant (Skip next Question)	No, will not delay (Skip next Question)	Yes, will space (Go to next Q)

51. How will you space your next child?_____
52. Please tell me the last time that anyone in your family was sick enough to see someone outside of the household for advice or treatment. Who was the person?_____
53. How long ago was it? Less than one week 1-4 wks 1-6 mo over 6 mo
54. What was the problem? (Brief description)_____
55. Who was consulted?_____
56. Did (person mentioned in Q.52) consult anyone else in connection with this illness (record)_____

57. This is all of the questions which we would like to ask you about your pregnancy and about this child. Do you have any questions to ask me at this time? (INTERVIEWERS: Record as precisely as possible)_____

_____

58. Record to skin examination: Explain importance of taking clothes off of child in order to see all of the skin. Remove child's cloths as gently as possible. Inspect and record skin lesions.

59. Upper arm circumference: (1)_____(2)_____

60. Weight: Be sure to check zero mark first (1)_____
(2)_____(3)_____

61. Length (Under 24 months) (1)_____(2)_____

62. Height (Over 24 months) (1)_____(2)_____

CONTINUATION SHEET: MCH PRACTICES BLOCK_____HOUSE____INTERVIEWER:

1. WHO is the next oldest child?_____Sex M F

2. When was his/her birthday_____Age_____
   Season/month yr Yrs - Month

3. For this child, I would like to ask you if he/she is in good health now?

   Yes No D.K. Other:_____

4. If NOT, what is problem?_____

5. I would like to find out what he/she has eaten over last 24 hours, just like we did for the first child.

   INTERVIEWER: Ask time of last meal, the food items eaten and the approximate amount of each. Work back through 24 hours.

Time	Food Eaten	Amount

6. When completed, ask specifically: What fruit has child eaten in last 24 hours/what vegetables/what milk/what eggs/what meat. Add to above.

7. Has this child had diarrhea before? Yes No. D.K.

8. If so, how long ago? Now LT 1 wk 1-4 wk 1-6 mo GT 6 mo.

9. If so, would you tell me how you treated it? INTERVIEWER: Probe: Diet change? Treatment outside home? Home remedies?

   _____

10. What else?_____

11. Anything else?_____

12. Has this child had any skin diseases/ YES NO D.K.

13. If so, how long ago? Now 1-7 days 1-4 wks 1-6 mo GT 6mo ago

14. What is/was disease called?_____

15. What did you do for it? (1)_____

16. What else?_____

17. Anything else?_____

18. Now we would like to weigh and measure your child and examine his/her skin.

19. Weight_____Length/Ht._____U.A.C._____