No. 7

BASIC SURVEY REPORT ON POPULATION AND FAMILY PLANNING IN THE KINGDOM OF NEPAL

MARCH, 1986

JAPAN INTERNATIONAL COOPERATION AGENCY
MEDICAL COOPERATION DEPARTMENT

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PREFACE

It is with great pleasure that I present to His Majesty's Government of Nepal this report of the Basic Study on Family Planning and Maternal and Child Health.

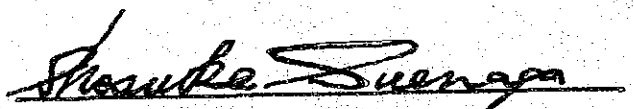
The report is based on the results of a field survey, which was carried out from 6th to 26th December, 1985, by a Japanese survey team commissioned by the Japan International Cooperation Agency (JICA), following the request of His Majesty's Government of Nepal.

The survey team, headed by Dr. Nobuo Matsumoto, had a series of discussions with the officials concerned of His Majesty's Government of Nepal and conducted a wide-ranged field survey and data analyses.

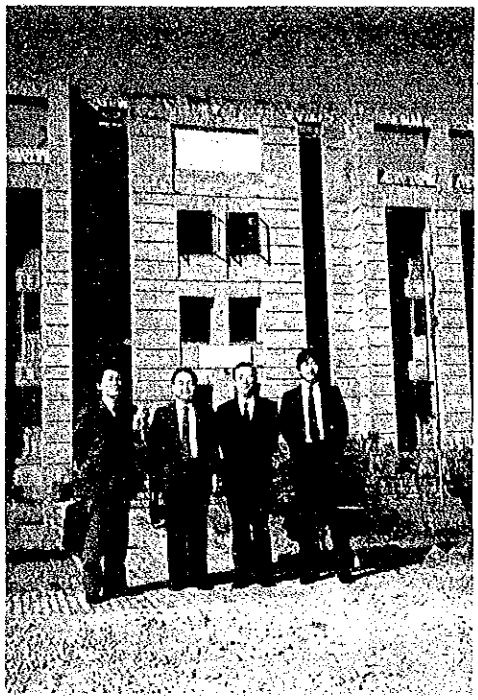
I sincerely hope that this report will be useful as a basic reference for implementation of the on-going Family Planning and Maternal and Child Health Project and thereby contribute to the promotion of the health status of the people and friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of His Majesty's Government of Nepal for their sustained cooperation extended to the Japanese Team.

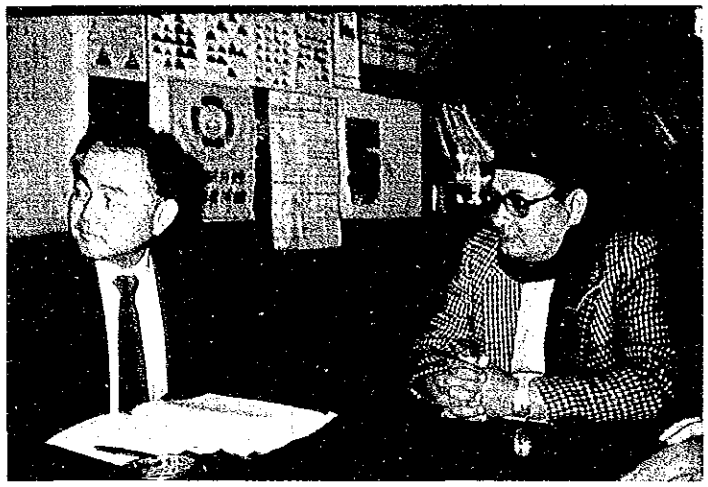
March, 1986



Shousuke SUENAGA
Executive Director,
Japan International
Cooperation Agency



At the Ministry of Health
(left to right)
Mr. Akira Naruse,
Dr. Nobuo Matsumoto,
Mr. Minoru O'uchi, and
Mr. Nobuyoshi Watahiki

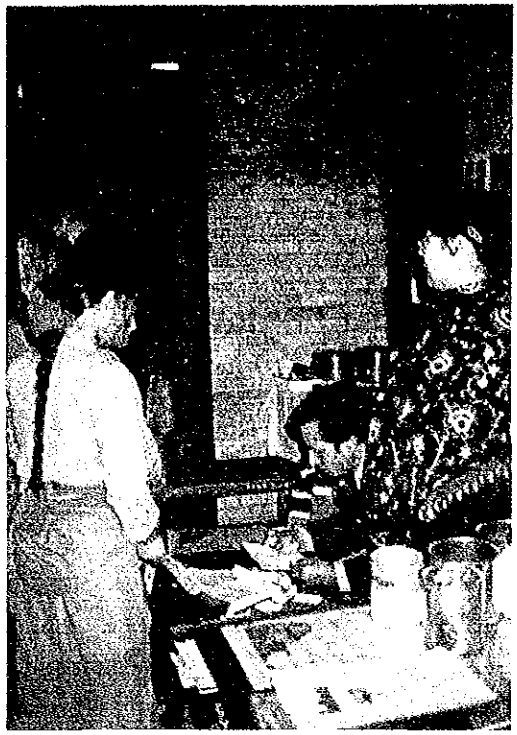


Discussion on Inception Report, FP/MCH Project, Ministry of Health
Dr. T.B. Khatri, Project Chief, FP/MCH Project

Discussion on the Inception Report
Dr. S.P. Battarai, Deputy Chief, FP/MCH Project (left)
Dr. Madhav Joshi, Deputy Chief, FP/MCH Project (center)
Mr. Tatsuo Hoshi, Resident Representative, JICA Kathmandu Office (right)

Courtesy call on the Japanese Embassy in Nepal
Mr. Renzo Izawa, Councilor (second from right)

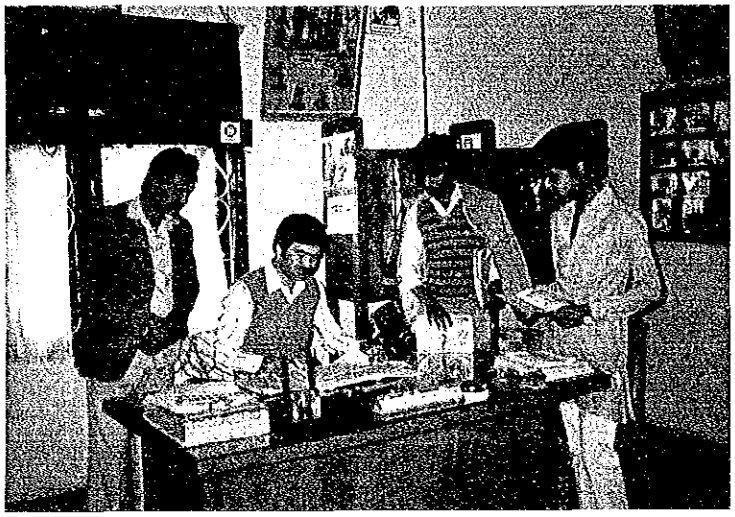
The FP/MCH Project headquarters
Drugs to ease side effects after taking pills or receiving Depoprovera injection (contraceptive injection) are handed to the visiting women at the Health Center.



The FP/MCH Project headquarters
A Nepalese woman receives Depoprovera injection.

Regional FP/MCH Training Center, Pathalaiya
Supervisors receive training.

Dhanusha FP/MCH District Office
The family planning logo and slogan "A Small Family is a Happy Family" are posted on the facade of the building.

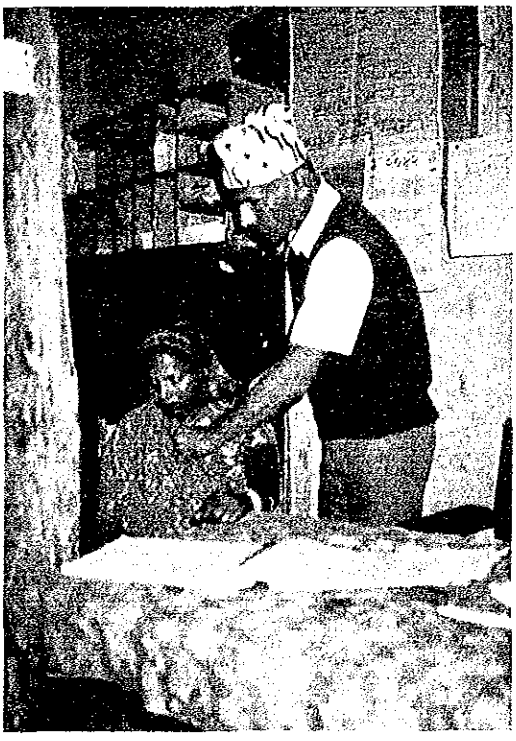


Dhanusha FP/MCH District Office
Staff meeting for the family planning campaign.
Mr. S.B. Adhikari, FPO, Dhanusha FP/MCH Office

Pediatric ward of Janakpur Hospital

Chisapani Health Post
A scene of medical examination on a FP/MCH medical service day (Dhanusha District)

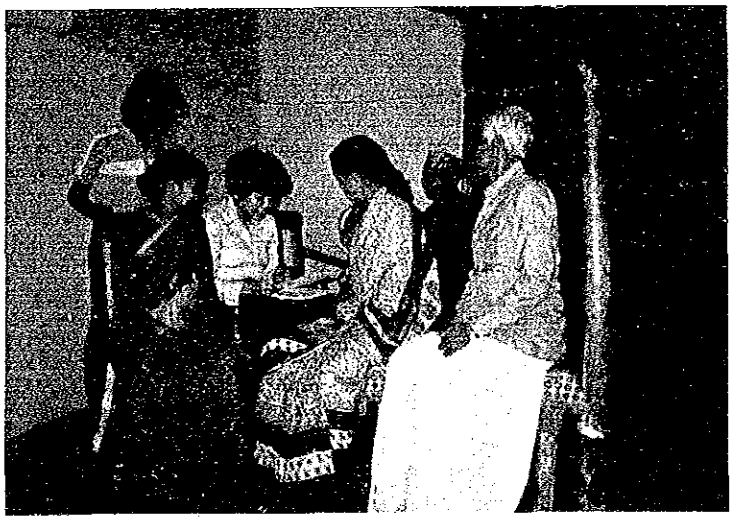
Mothers' Club implemented with the aid of UNFPA
Staffers are being taught how to prepare sugar and salt water against dehidration (Dhanusha District).



Sabaila Health Post
A scene of medical examination.
Mr. Amarnath Gha, Health Post in charge, Sabaila Health Post (Dhanusha District)

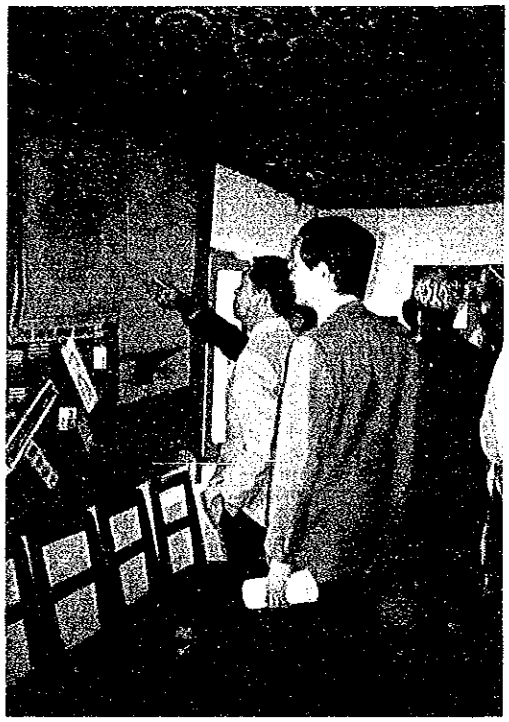
Sabaila Village
A villager holding the certificate for sterilization (Dhanusha District).

Barmajhiya Village
A scene of management of birth registrations, death registrations and voters' lists.
Mr. Ramendradeep Dhakal, Panchayat Prodhan (right)
Mr. Jainandan Dubey, Panchayat Secretary (left)
(Dhanusha District)



Barmajhiya Village
An interview with Mr. Sakldo Prasad Singh, Ayurvedic doctor (right)
Mr. J.N. Singh, FPO, FP/MCH Project (second from right) and Ms. Yuiko Nishikawa, Survey Team Member (third from left)

Dhulikhel FP/MCH District Office
Meeting for the field survey.
Mr. Shyam Kaji Shrestha, FPO, Dhulikhel FP/MCH District Office (second from right)



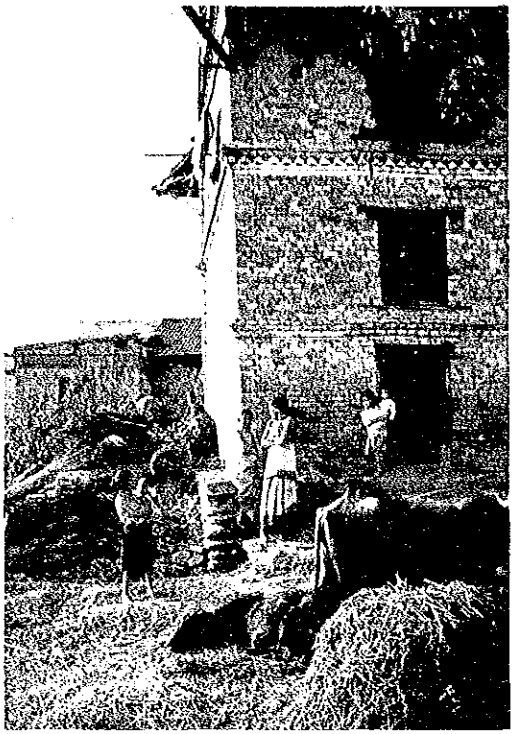
At Dhulikhel FP/MCH District Office
Survey team members receive explanation about locations of health clinics, health posts.
Mr. Hidehiro Shimizu, Survey Team Member (right)

A scene of an interview survey near Khopasi Health Post.

Nala Health Post (pilot area)
The offices of Panachayat and Agricultural Cooperative are also in this building.

Nala Health Post
Mr. Krishna Man Maivandhar, Health Assistant

Vicinity of Khopasi Health Post
Since the roads are not in good condition, it is necessary to use a jeep in conducting survey.
Mr. Akihiko Itoh, Survey Team Member (left)

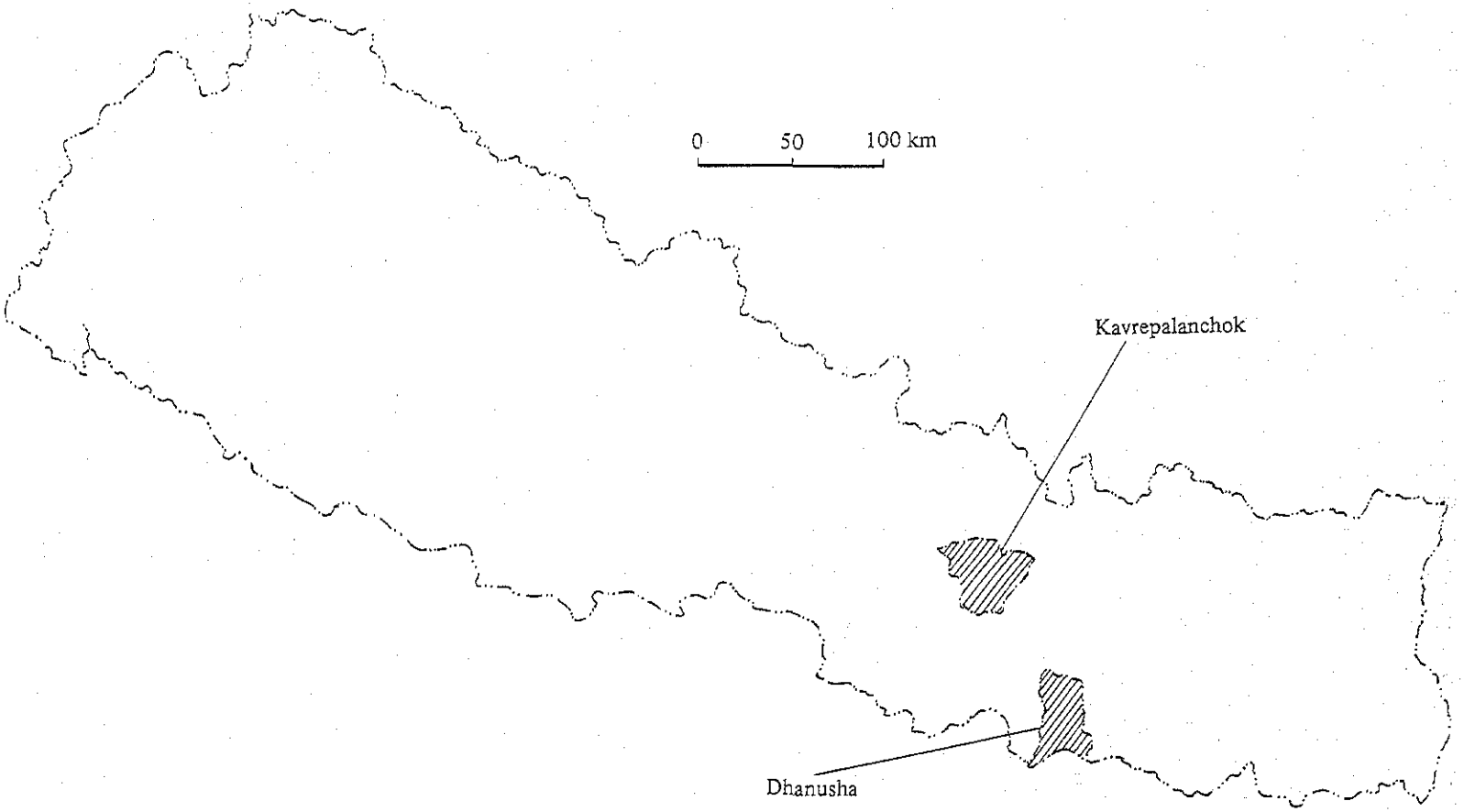


Nala Village, Kavrepalanchok
A typical 3-story brick house in Nala Village. On the third floor is a kitchen where sacred fire is used.

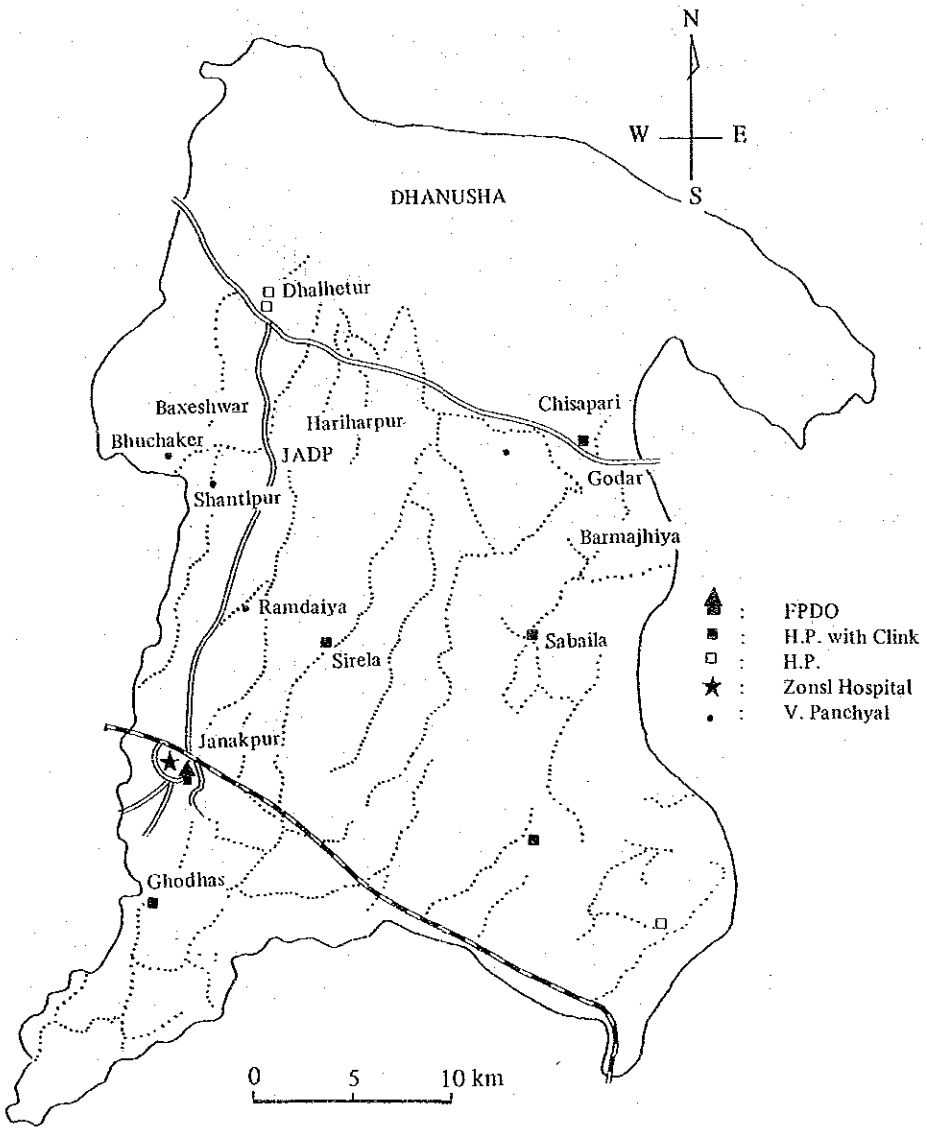
Ramdaiya Village, Dhanusha
A scene of a common well being used by a villager.

Barmajhiya Village, Dhanusha
A scene of preparing a meal.

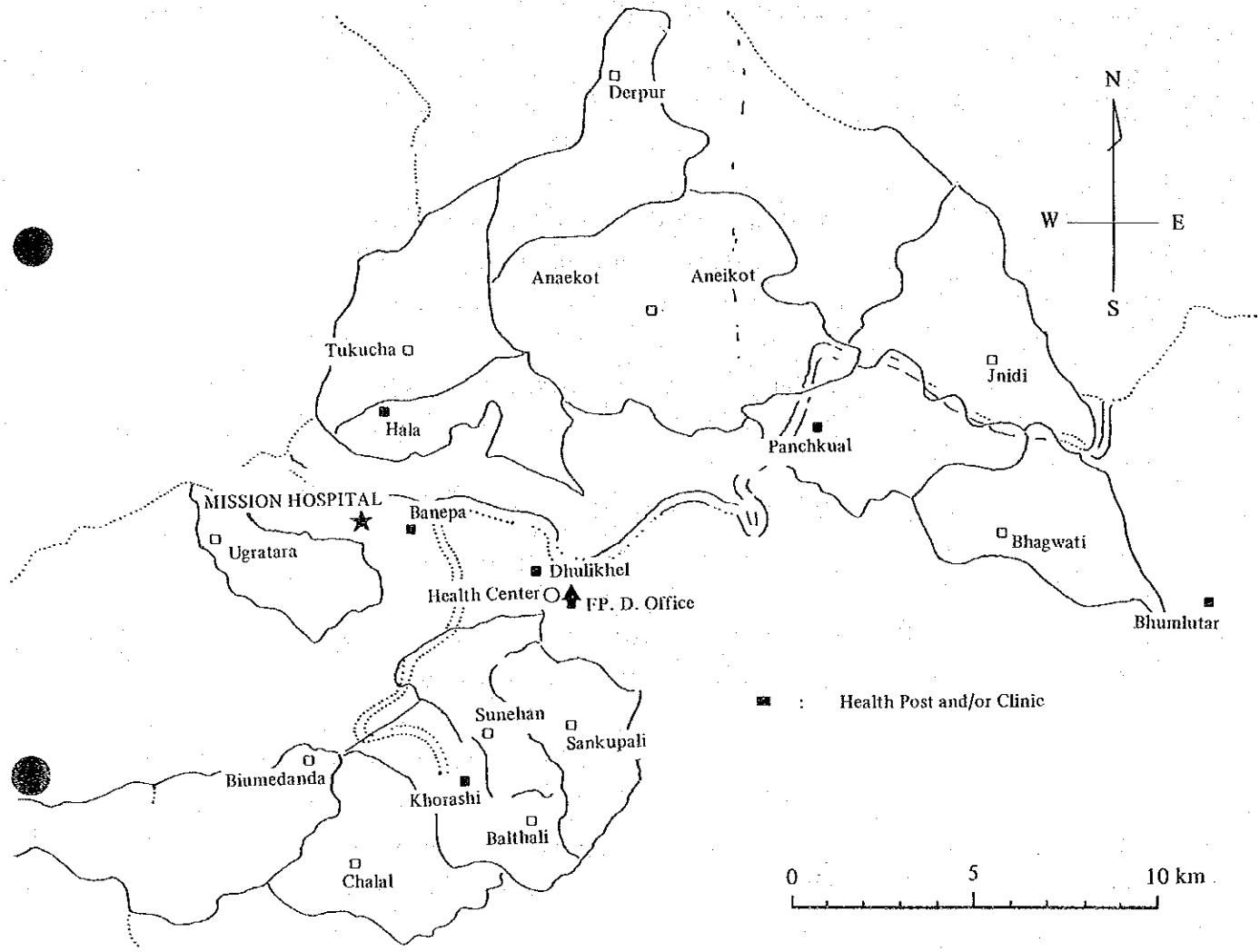
WHOLE AREA OF NEPAL



DHANUSHA DISTRICT: SURVEY AREAS AND HEALTH POST LOCATIONS



KAVREPALANCHOK DISTRICT: SURVEY AREAS AND HEALTH POST LOCATIONS



CONTENTS

Chapter 1

PROBLEMS AND METHODS

CHAPTER 1 PROBLEMS AND METHODS

In implementing the family planning/MCH project (a five-year project), it is necessary to plan the programs related to this project on the basis of the findings of the preliminary surveys. Also it is necessary that, in planning these programs, more rational decisions are made so that these programs may be socially acceptable and lead to better results. In this connection, the following three conditions of essential health care should be noted.

The first condition is "essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community."

The second condition is "essential health care realized at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination."

And the third condition is "essential health care realized through the community members' full participation."

It goes without saying that this five-year project must satisfy all these conditions.

For this purpose, it is necessary to do preliminary assessment work prior to planning the programs related to this project, namely to collect accurate data and information on family planning and MCH and analyze and evaluate them carefully before planning and implementing the programs.

This survey was conducted as a part of the preparatory stage in "Tentative Implementation Schedule of the Project" (TISP) (one of the attached documents). This survey was, therefore, designed to determine the following 9 indicators indispensable in evaluating this project.

Nine Indicators as the Ultimate Goals

(1) Rate of medical check-ups of pregnant women
(2) Rate of medical check-ups of children
(3) Rate of immunization
(4) Changes major diseases
(5) Infant death rate
(6) Maternal mortality rate
(7) Acceptance rate of family planning
(8) Birth rate
(9) Others

In evaluating the above indicators, it is necessary to identify the sources of existing data and examine the reliability of these data, in order to have a clear grasp of the actual situation. From this perspective, the scope of this survey was determined as follows.

(1) Analysis and evaluation of existing data and information

1) Data and information on national level
2) Data and information on model areas

(2) Evaluation of statistical procedures relative to existing data and information

1) Identifying government bodies and organizations with NGO status concerned with public health and medical information

2) Evaluation of the reliability of data and information available at the smallest administrative units and the current data and information collecting system

3) Evaluation of the data and information dissemination system

(3) Evaluation of the validity (reliability) of interview surveys

1) Evaluation of the validity (reliability) of past interview surveys on dynamics of population and health care services

2) Evaluation of the validity (reliability) of interview survey in model areas in this project and the method of the survey

Existing data and information in the above (1) and (2) were collected direct from the Family Planning/MCH Project and the authorities concerned. Analysis of the data and information is shown in Chapter 2 of this report. In the two model areas -- Kavrepalanchok and Dhanusha Districts, data were collected direct from district offices, health posts and hospitals. In the Kingdom of Nepal, however, there are few reliable data related to the above (1) and (2). This deficiency must be rectified by some means or other. Interview survey in the above (3) can be used for this purpose. In this survey, a family interview survey (preliminary test) was conducted using a questionnaire on family planning, MCH and social environment which was prepared beforehand. Also a map indicating geographical distribution of health posts and geographical areas covered by them was prepared. Thus this survey was aimed at quantitatively analyzing the problems of family planning and MCH and the functions of health posts, and thereby providing a statistical base for use in implementing the FP /MCH Project.

Chapter 2

REVIEW AND ANALYSIS OF EXISTING DATA AND INFORMATION AND STUDY OF STATISTICAL PROCEDURES

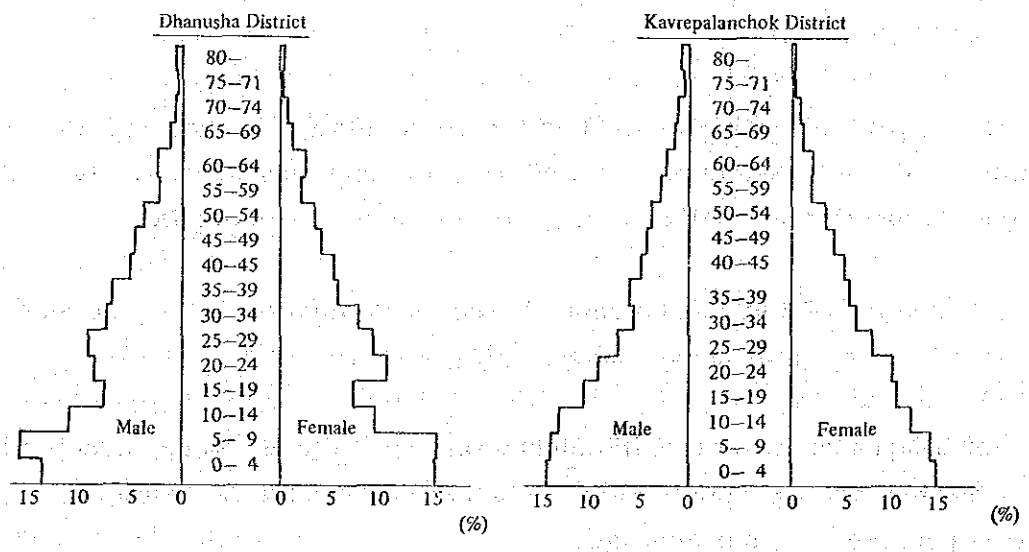
CHAPTER 2 REVIEW AND ANALYSIS OF EXISTING DATA AND INFORMATION AND STUDY OF STATISTICAL PROCEDURES

1. Population Statistics on District Level
- Total Population and Sex/Age Distribution -

The 1981[1)] census shows breakdowns of Nepal's total population by region (5 regions), zone (14 zones) and district (75 districts). Shown in Fig. 2-1 are the age pyramids of the population by five-year age groups for the Dhanusha and Kavrepalanchok Districts covered by this survey.

In Dhanusha, the age 0-10 male population segment shows an age group distribution pattern similar to that indicated in the 1971 census, while the district's female population shows an age group distribution pattern similar to that indicated by the country's total female population in the 1981 census. In Kavrepalanchok, on the other hand, the sex/age distribution of its population shows a typical population growth pattern. Also in this district, data were obtained on the populations of its 68 panchayats[4)], but sex/age distributions are unknown.

Fig. 2-1 Age Pyramids of the Population by Five-Year Age Groups



Source: Reference (1)

(1) Breakdown of Dhanusha District's Population by Age Group (0-14, 15-64 and 65 and above age groups)

Table 2-1

	Total population (%)	Male population (%)	Female population (%)
Young age population (0–14)	173,991 (40.2)	92,049 (40.9)	81,942 (39.5)
Productive age population (15–64)	246,999 (57.1)	127,118 (56.5)	119,881 (57.7)
Old age population (65 and above)	11,579 (2.7)	5,733 (2.6)	5,846 (2.8)
Total population	432,569 (100.0)	224,900 (100.0)	207,669 (100.0)
Young age population index	70.4	72.4	68.4
Old age population index	4.7	4.5	4.9
Dependent population index	75.1	76.9	73.2
Aging index	6.7	6.2	7.1

Source: Reference (1)

In comparison with the national level population structure, that of the Dhanusha District clearly shows that this district has a relatively small old age population and a relatively large productive age population.

(2) Breakdown of Kavrepalanchok District's Population by Age Group (0-14, 15-64 and 65 and above age groups)

In comparison with the Dhanusha District, the Kavrepalanchok District has a larger old age population. Its old age population index is a little higher than the national average.

Table 2-2

	Total population (%)	Male population (%)	Female population (%)
Young age population (0–14)	123,343 (40.2)	63,190 (40.5)	60,153 (39.9)
Productive age population (15–64)	173,258 (56.4)	87,130 55.7)	86,128 (57.0)
Old age population (65 and above)	10,549 (3.4)	5,898 (3.8)	4,651 (3.1)
Total population	307,150 (100.0)	156,218 (100.0)	150,932 (100.0)
Young age population index	71.2	72.5	69.8
Old age population index	6.1	6.8	5.4
Dependent population index	77.3	79.3	75.2
Aging index	8.6	9.3	7.7

Source: Reference (1)

Both districts show very high percentages of the young age population (supported by the productive age population). The same is true of Nepal's total population. If Nepal's population goes on increasing, the ratio of young age population to the country's total population will become still higher.

2. Vital Statistics

The figures (actual numbers and rates) obtained of annual live births, deaths, infant deaths, stillbirths, maternal deaths, marriages, divorces, life expectancy, causes of death, etc. serve as very important indicators to explain the dynamics of population, sanitary condition, maternal and child health services and so on.

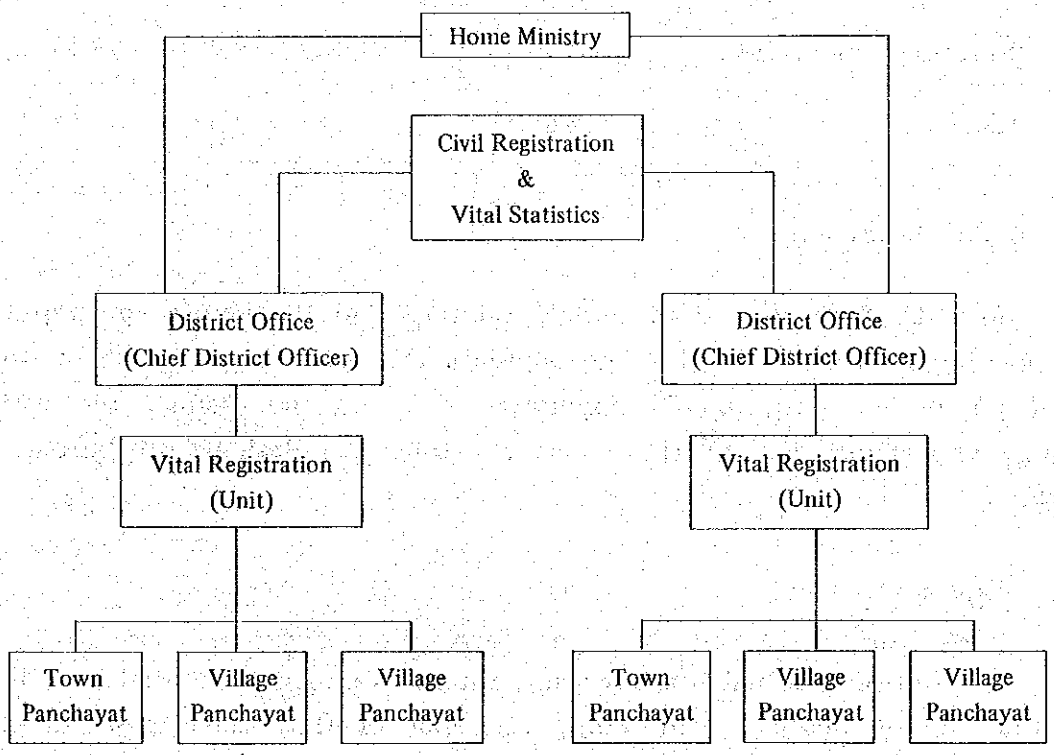
Examination of the reliability of the published figures, those obtained as a result of our interview surveys and those calculated on the basis of the data obtained in this survey is shown in the pages that follow.

(1) Outline of Registration System and Registration Forms

Mr. Luxman Bahadur Basnet of the Civil Registration and Vital Statistics Office told us that calculations are being done on the 5 major indicators (live births, deaths, marriages, divorces and migrations) for 40 districts and provided us with relevant data and information.

Outline of the Registration System is as shown in Fig. 2-2.

Fig. 2-2 Organization Chart of Registration System



The data and information we obtained on the Registration System on national and district (40 district) levels are summarized as follows.

(2) Itemized Vital Statistics

1) Crude Birth (Rate)

National, rural and urban birth rates are available for 1974/1975, 1976 and 1977/78[5] as well as for 1981 and 1985[3]. In all cases the birth rate 9 adjsuted) exceeds 40. Unadjusted birth rate in the 1977/78 sample survey is 33.5 (urban 26.3, rural 35.8).

On the other hand, the result of our calculation for each of the 40 districts which was done on the basis of raw data[7] on birth registrations in the 40 districts and the population data in the 1981 census is shown in Table 2-3.

The lowest birth rate was 0.76 for Rasuwa District with a population of 30,241 and the highest birth rate was 25.62 for Jhapa District with a population of 479,743. There were 108,040 births registered for the total population of 10,631, 588 in the 40 districts (108,352 birth registrations in the raw data, but this is a miscalculation). Thus we get a crude birth rate of 10.16 (for a 1,000 population).

Furthermore, when these figures are compared with those for 16 districts which are included in both the Sample Survey (1977-/78)[5] and Reference (7), there are no coincident figures. The smallest gap is 1 to 1.8 and the largest 1 to 33.5 (see Table 2-4).

From this we may conclude that, if the figures in the Sample Survey reflect the actual situation more accurately, there are so many unregistered live births.

Table 2-3 Birth and Death Rates Calculated on the Basis of the 1981 Census Data and CRVS Raw Data CRVS Raw Data (1984)

No.	District	1981 Census			CRVS Raw Data (1984)			
		Population of District (%)			No. of Registered Birth	Crude Birth Rate	No. of Registered Death	Crude Death Rate
		Total	Male	Female				
1.	Zlam	178,356	92,031	86,325	2,566	14.38	2,278	12.77
2.	Jhapa	377,743	252,011	227,732	12,292	25.62	11.52	2.40
3.	Dhankula	127,781	66,183	63,571	2,357	18.18	472	3.77
4.	Harang	534,672	278,355	356,337	7,787	14.56	913	0.17
5.	Sunsari	344.394	178,355	166,239	3,464	10.05	563	1.63
6.	Udayapur	159,805	80,530	79,275	3,217	20.13	286	1.79
7.	Saptari	377,055	198,376	184,679	3,542	9.34	387	1.28
8.	Siraha	375,358	174,758	180,400	1,630	7.34	483	1.27
9.	Sindhuli	183,705	93,251	70,454	2,311	12.58	393	2.13
10.	Uhanusa	432.567	224,700	207,669	7,885	18.23	1,083	2.50
11.	Maholtari	361,054	187,097	173,762	4,882	13.52	873	2.41
12.	Sarlahi	398,766	205,971	192,775	3,392	8.51	511	1.28
13.	Sindhupalchok	232,326	122,663	107,663	289	1.24	124	0.53
14.	Pasuma	30,241	15,717	14,522	23	0.76	14	0.46
15.	Nawaket	202,976	104,473	98,483	336	1.66	62	0.31
16.	Dhading	243,401	124,538	118,863	941	3.87	376	1.54
17.	Kavre	307,150	156,218	150,732	2,107	6.86	457	1.49
18.	Bhaklapur	159,767	81,533	77,734	613	3.84	427	2.67
19.	Kathmandu	422.237	227,934	174,303	2,594	6.14	684	1.62
20.	Lalitpur	184,341	97,678	86,683	307	1.67	415	2.25
21.	Makwampur	243.411	125,450	117,931	1,821	7.48	224	0.32
22.	Chilwan	257,571	133,347	126,222	2,630	10.13	310	1.17
23.	Ranthat	312,526	173,161	157,365	4,461	13.42	738	2.22
24.	Baza	318,957	165,107	153,830	2,428	7.61	341	1.07
25.	Parsa	284,338	146,342	137,976	4,670	16,79	350	1.34
26.	Gorhha	231,294	114,614	116,680	1,167	5.05	371	1.60
27.	Kaski	221,272	112,024	107,248	1,873	8.46	520	2.35
28.	Fanahu	223,438	113,316	110,122	3,036	13.59	523	2.34
29.	Syanglo	271,824	129,616	142,208	2,692	9.70	701	3.31
30.	Nawalpaiasi	308,828	159,162	149,666	2,345	7.59	438	1.42
31.	Polpa	214,442	108,687	105,753	2,487	11.60	587	2.74
32.	Rupandahi	377,076	176,783	182,313	2,735	7.21	464	1.22
33.	Kapllvaitu	270,045	143,400	126,645	4,587	16.79	559	2.07
34.	Dang Deukvri	266,373	135,835	130,538	1,773	6.66	437	1.65
35.	Jumla	68,797	35,870	32,907	122	1.77	61	0.89
36.	Suikhel	166,196	83,382	82,814	884	3.32	91	0.55
37.	Banke	205,323	107,280	78,083	3,410	16.61	461	2.25
38.	Bardiva	177,044	103,877	75,165	1,175	6.00	346	1.74
39.	Kailali	257,705	135,978	121,727	320	1.24	146	0.57
40.	Kathanpur	168,771	93,171	75,800	843	5.00	170	1.01
		1,063,588			108,040	10.16	20,145	1.89

Source: Civil Registration and Vital Statistics Office, Reference (7)

Table 2-4 Comparison of Birth and Death Rates in Sample Survey (1977/78) and CRVS Raw Data (1984)

Locality in the Sample	Birth Rate		Death Rate	
	Sample survey 1977/78	CRVS 1984	Sample survey 1977/78	CRVS 1984
Kathmandu City	25.22		7.86	
Lalitpur City	25.94		10.88	
Bhaklapur City	35.95		10.41	
Total Urban	26.31		8.29	
Kathmandu District	37.78	6.14	16.48	1.62
Lalitpur District	38.27	1.67	17.21	2.52
Bhaklapur District	47.79	3.84	15.52	2.49
Syaogja District	37.55	9.90	17.37	3.31
Bara District	41.59	7.61	11.96	1.07
Chitwan District	32.62	10.13	12.51	1.19
Siraha District	38.86	4.34	19.27	1.29
Sunsari District	28.97	10.05	13.33	1.63
Dhankula District	31.72	18.18	9.35	3.79
Illam District	36.91	14.38	17.28	12.77
Surkhet District	36.82	5.32	12.40	0.55
Dailekh District	40.12	–	23.97	–
Kailali District	41.58	1.24	15.74	0.57
Solukhumbu District	36.79	–	10.22	–
Junmla District	32.40	1.77	17.30	0.89
Total Rural	35.80		14.71	
Grand Total	33.53		13.18	

Source: CRVS: Civil Registration and Vital Statistics Office, Reference (5) and (7).

2) Crude Death (Rate)

As in the case with Crude Birth (rates), figures of Crude Death (rates) were shown in Table 2-5. We get a crude death rate of 18.5 for 1981 and 16.6 for 1985[3)].

Table 2-5 Crude Death Rate (CDR) and Infant Mortality Rate (IMR) by Urban-rural Residence and Sex, 1974-1975, 1976 and 1977-1978

Residence and Sex	1974–75		1976		1977–1978	
	CDR	IMR	CDR	IMR	CDR	IMR
Urban						
Males	8.7	55.2	8.2	55.3	13.2	72.8
Females	9.4	59.2	9.7	50.2	10.9	60.8
Both sexes	9.0	57.1	8.9	52.8	12.0	67.2
Rural						
Males	18.9	143.9	21.9	130.7	19.3	111.1
Females	20.7	235.9	23.2	140.6	17.7	99.1
Both sexes	19.8	134.8	22.6	136.1	18.6	105.1
Nepal						
Males	18.6	141.2	21.5	128.4	17.9	109.9
Females	20.6	123.0	22.8	137.9	16.2	97.9
Both sexes	19.5	132.5	22.2	133.6	17.1	104.0

Source: Reference (2).

According to the 1984 figures for the 40 districts (Table 2-3), on the other hand, 913 deaths are registered in Morang District. Thus we get a crude death rate of 0.17 for the district, the lowest of the 40 districts, while 2,278 deaths are registered in Ilam District or a crude death rate of 12.77, the highest of the 40 districts. The crude death rate for the total population in the

40 districts is 1.89 (for a 1,000 population) (see Table 2-3). In the comparison for 16 districts the registered figures were all smaller than the reported figures, just as in the case of Crude Births (rates).

Thus we may conclude that there were also so many unregistered deaths.

3) PMI (Proportional Mortality Indicator)

PMI is an indicator to indicate the proportion of "50 and over" age group mortality to the national total. By this indicator we can determine whether young age group mortality or "50 and over," age group mortality is predominant. This indicator is a very valuable indicator in that it can be obtained on the basis of statistics on deaths by age group alone even if mortality statistics by cause of death are unavailable.

In actuality, however, we could obtain no data including figures for deaths by age group or those including PMI.

It will be necessary to obtain statistic data on deaths by age group in future surveys.

4) Infant Mortality (Rate)

Infant mortality rate is a very important indicator by which we can evaluate MCH and sanitary condition.

As in the case of PMI, we were unable to obtain any data on infant deaths. It appears that in the Kingdom of Nepal where home delivery is common there is something a miss with the birth registration method.

Table 2-6

	Sample survey 1977/78			Census	NCP
	1974/75	1976	1977/78	1981	1985
Total	132.5	133.6	104.0	123.0	111.5
Male	141.2	128.4	109.9	117.0	105.6
Female	123.0	137.9	97.9	128.0	117.8

Source: Reference (5) for 1974/75, 1976, 1977/78; Reference (1) for 1981; Reference (3) for 1985.

5) Causes of Infant Death

It is also important to know the causes of infant deaths. Although we were unable to obtain data on the causes of infant deaths on antional and district levels, data on the causes of infant deaths at 10 hospitals (265 beds) in 1974/75 were available[8] (see Table 2-7). According to the data, pneumonia ranks first, followed by enteritis and other diarrhoeal diseases, avitaminosis and other nutritional deficiencies, and infective diseases. However, statistics on "1 to 4 years" age group show that enteritis and other diarrhoeal diseases rank first, measles fifth and tetanus sixth. Many of these diseases can be prevented through the spread of vaccination.

6) Maternal Death (Rate)

We were unable to obtain data on maternal deaths. But we have instead a very important indicator to indicate the health level of expectant and nursing mothers.

Although data on maternal deaths are unavailable, the hospital statistics show that many expectant and nursing mothers are suffering from complications.

Table 2-7 Major Causes of Death (in %) All Discharges of 10 Hospitals (265 beds) 1974/75

Rank No.	For Age: Under 1 year	
1	Pneumonia	27.2%
2	Enteritis and other diarrhoeal diceases	22.2%
3	Avitaminoses and other nutritional deficiencies	6.2%
4	Meningitis	6.2%
5	Acute respiratory infections	4.9%
6	Bronchitis, empylysema and asthma	3.7%
	Total	70.4%
Rank No.	For Age: 1–4	
1	Enteritis and other diarrhoeal diseases	21.6%
2	Symptoms and ill defined conditions	16.8%
3	Pneumonia	11.2%
4	Meningitis	8.0%
5	Measles	4.8%
6	Tetanus	3.2%
	Total	65.6%

Source: Reference (8)

Table 2-8 shows classification of diseases among inpatients at 10 hospitals (in 1974/75, excluding normal delivery). Of the total number of discharge of 6,776, infective and parasitic diseases rank first and complications of pregnancy, child-birth and puerperium eighth (242 or 3.6%). Similarly, of the total number of discharge in Table 2-9 (9 hospitals), complications of pregnancy, child-birth and puerperium rank eighth (3.2%).

Table 2-8 Major Groups of Diseases among In-patients Treated in 10 Hospitals in 1974/75 (Excluding normal delivery)

Rank Order	Diseases Groups	Number of Discharge	%
1	Infective and parasitic diseases	2,171	32.0
2	Diseases of the respiratory system	1,690	24.9
3	Gymptoms and ill-defined conditions	627	9.3
4	Accidents, paiscning and violence	623	9.2
5	Diseases of genito-urinary system	411	6.0
6	Diseases of blood and blood-forming organis	281	4.2
7	Diseases of the circulatory system	262	3.7
8	Complications of pregnoncy, child-birth and puerperium	242	3.6
9	Diseases of the digestive system	242	3.6
10	Diseases of the nervous system and sense organs	237	3.5
	All Disease Groups	6,776	100.0

Source: Reference (8)

Table 2-9 Morbidity Pattern among In-patients Treated in Nine Hospitals

Rank Order	Diseases Groups	Number of Discharge	%
1	Infective and parasitic diseases	1,658	28.9
2	Diseases of the respiratory system	2,630	28.6
3	Symptoms and ill-defined conditions	1,002	10.9
4	Accidents, poisoning and violence	799	8.7
5	Diseases of the genito-urinary system	564	6.1
6	Diseases of the digestive system	386	4.2
7	Diseases of the circulatory system	336	3.7
8	Complications of pregnancy, child-birth and puerperium	289	3.2
9	Diseases of th nervous system and sense organs	279	3.0
10	Endocrine; nutritional and metabolic diseases	245	2.7
	All Disease Groups	9,188	100.0

Source: Reference (8)

Table 2-10 First Six Major Couses for Hospitalization by Age-Groups and Sex (10 Hospitals - 265 beds - 1974/75)

Age: Under 1

Major causes for hospitalization are the same for both sexes:

1. Infective & parasitic disenses
2. Diseason of respiratory system
3. Symptoms and ill-defined conditions
4. Diseases of the nervous system and sense organs
5. Accidents; poisoning and violence
6. Endocrine, nutritional and metabolic diseases

Age: 1 – 4

Males	Females
1. Infective and parasitic diseases	1. Infective and parasitic diseases
2. Diseases of respiratory system	2. Diseases of respiratory system
3. Accidents, poisoning and violence	3. Symptoms and ill-defined
4. Symptoms and ill-defined	4. Endocrine, nutritional and metabolic diseases
5. Endocrine, nutritional and metabolic diseases	5. Accidents, poisoning and violence
6. Diseases of the norvous system and sense organs	6. Diseases of nervous system and sense organs

Age: 5 – 14

Major causes for hospitalization are the same for both sexes:

1. Infective and parasitic disenses
2. Diseases of respiratory system
3. Accidents, poisoning and violence
4. Symptoms and ill-defined conditions
5. Diseases of genito-urinary system
6. Diseases of blood and blood-forming organs

Age: 15 – 44

Male	Females
1. Infections and parasitic diseases	1. Infectious and parasitic diseases
2. Accidents, poisoning and violence	2. Complications and pregnancy, child birth and the puerperium
3. Diseases of respiratory system	3. Diseases of genito-urinary system
4. Symptoms and ill-defined conditions	4. Symptoms and ill-defined conditions
5. Diseases of digestive system	5. Diseases of respiratory system
6. Diseases of genito-urinary system	6. Diseases of blood and blood-forming organs

Age: 45 and above

Males	Females
1. Infectious and parasitic diseases	1. Infectious and parasitic diseases
2. Diseases of respiratory system	2. Diseases of respiratory system
3. Accidents, poisoning and violence	3. Diseases of circulatory system
4. Symptoms and ill-defined conditions	4. Symptoms and ill-defined conditions
5. Diseases of circulatory system	5. Disease of nervous system and sense organs
6. Diseases of digestive system	6. Accidents, poisoning and violoence

Source: Reference (8)

Table 2-10 shows classification of major causes for hospitalization (by age group and sex). In this table, complications of pregnancy, child-birth and puerperium rank second as the cause for hospitalization for the 15-44 age group.

In the 1978/79 data[9], on the other hand, complications of pregnancy, child-birth and puerperium rank first (23.3%), indicating a sharp increase in number. Although factual data on maternal deaths are unavailable, the large number of inpatients suffering from complications of pregnancy, child-birth and puerperium implies that actual maternal deaths are numerous. Findings of our interview survey implies that home delivery is a common practice in Nepal. Also the current sanitary condition in this country seems to evidence this.

It will be possible, through good use of the hospital statistics, to have a clear grasp of the actual situation relative to the causes of death and the prevalent diseases.

7) Stillbirth (Rate)

Due to lack of mortality statistics by cause of death, we were unable to obtain satisfactory stillbirth statistics on national level.

But we could obtain the following figures as a result of calculation based on the figures for live birth and stillbirth included in the hospital statistics, which are shown in Reference (10) (see Table 2-11).

At a total of 45 hospitals there were 849 stillbirths and 973 live births. Thus we got a stillbirth rate of 466.0.

The value of 466.0 is about 10 times as much as that for Japan - 45.5 in 1983 (spontaneous stillbirth: 25.4 artificial stillbirth: 20,1).

But we are not so certain of the reliability of this value in view of the fact that the definition of stillbirth varies from one country to another and home delivery is a common practice in the Kingdom of Nepal.

Table 2-11

Dev. Region & Zone (No. of hospital)		Live births	Stillbirths	Stillbirth rate*
Eastern Dev. Reg.				
Mechi zone	(1)	20	22	523.8
Koshi zone	(6)	51	67	567.8
Sagarmatha zone	(4)	46	39	458.8
Central Dev. Reg.				
Jamakapur zone	(3)	83	48	366.4
Nasayani zone	(2)	145	69	322.4
Bagmati zone	(12)	357	407	532.7
Western Dev. Reg.				
Gandaki zone	(5)	95	83	466.3
Dhaulagiri zone	(2)	20	10	333.3
Lumbini zone	(5)	154	103	400.8
Mid. and Far Dev. Reg.				
Bheri zone	(2)	–	–	–
Seti zone	(2)	–	–	–
Maharkali zone	(1)	2	1	333.3
Total	(45)	973	849	466.0

* Stillbirth rate = Stillbirths / (Live births + Stillbirths) x 1,000

Source: Reference (10)

8) Perinatal Death (Rate)

Perinatal deaths are the sum total of late stillbirths (after the 28th week of pregnancy) and early infant deaths (within a week after birth) and perinatal death rate is indicted by the ratio of perinatal deaths to 1,000 live births.

This indicator, long publicized by WHO since 1950, serves as a comprehensive infant death indicator which makes up for the deficiency of other infant death indicators. In fact, during the period from after the 28th week of pregnancy to within a week after birth, maternal health condition greatly affects the health condition of the baby. In addition, the definition of stillbirth varies from one country to another. Thus it is very difficult to draw a reliable conclusion from mere comparison of infant death indicators.

In the Kingdom of Nepal, however, no statistics on perinatal deaths are available. It is necessary to improve on the country's hospital statistics, registration system and MCH.

9) Marriage and Divorce

The number of marriages in the 40 districts was calculated on the basis of the data included in Reference (7). Marriage Registration Form is available in Nepal, but it is unknown whether this form is used correctly.

Divorces are not registered at the Civil Registration and Vital Statistics Office. This is because a court decision has ruled out this procedure.

10) Life Expectancy

Table 2-12

	Male	Female	Total
1954	27.1	28.5	–
1961	34.7	32.5	–
1971	41.9	39.1	–
1974	45.0	42.0	–
1981	50.9	48.1	49.5
1985	52.9	50.1	51.5

Source: Reference (11) for 1954, 1961, 1971, 1974; Reference (1) for 1981; Reference (3) for 1985.

Since 1961 female life expectancy has always been lower than male life expectancy. This is reportedly because of the very high maternal death rates[11].

11) Migrations

In the 1977/78[5] Sample Survey statistics on migrations as shown in Table 2-13 are reported.

Comparison of the data for some districts which border India shows wide differences in migration rate. In the raw data on migration registrations in Reference (7), very low values are reported. As in the cases of live births and deaths, there seem to be many unregistered migrations.

3. Statistics on Diseases

No national level statistical data on diseases are available in Nepal. So we had no alternative but to estimate the whole picture based on some hospital statistics.

Table 2-13

Locality in the Sample	Out Migration Rate	In Migration Rate
Kathmandu City	118.04	58.89
Lalitpur City	179.08	38.49
Bhaktapur City	31.22	19.39
Total Urban	111.42	52.79
Kathmandu District	23.45	20.77
Lalitpur District	33.36	14.75
Bhaktapur District	27.37	20.42
Syangja District	63.13	42.48
Bara District	13.59	11.14
Chitwan District	43.00	21.11
Siraha District	33.88	22.38
Sunsari District	38.68	13.50
Dhaukuta District	44.73	12.61
Illam District	48.33	28.12
Surkhet District	74.97	49.41
Dailekh District	56.80	26.58
Kailali District	149.37	34.31
Solukhumbu District	48.03	15.33
Jumla District	11.95	8.81
Total Rural	44.03	23.01
Grand Total	59.98	30.05

Source: Reference (5)

(1) 10 Major Groups of Diseases among Inpatients[8)]

As shown in Tables 2-8 and 2-9, infective and parasitic diseases top the list at about 30%. Accidents, poisoning and violence rank fourth at 8-9%. We were told that these are related to mountaineering.

(2) First 6 Major Causes for Hospitalization by Age Groups and Sex[8)]

As shown in Table 2-10, the major causes for hospitalization are shown for each of the 5 age groups (under 1, 1-4, 5-14, 15-44, and 45 and over). For each age group, infective and parasitic diseases rank first.

With males in the 15-44 age group, however, accidents, poisoning and violence rank second, while with females in the same age group complications of pregnancy, child-birth and puerperium rank second.

Taken overall, it appears that infective diseases (parasitic diseases) and nutritional diseases are prevalent in Nepal.

(3) 10 Major Groups of Diseases among Outpatients[8)]

As shown in Table 2-14, infective and parasitic diseases top the list as in the case of inpatients, at 35.7%, followed by diseases of skin and subcutaneous tissue, diseases of the respiratory system, and diseases of the digestive system.

Table 2-14 Outpatient Morbidity - Males and Females
Major Groups of Diseases

Rank	Dieseases Group	Case Number	Examined, %
1	Infective and perositic diseases	2,959	35.7
2	Diseases of skin and subcutaneous tissue	1,049	12.7
3	Diseases of the respiratory system	1,024	12.4
4	Diseases of the digestive system	831	10.0
5	Diseases of the nervous system	748	9.0
6	Diseases of the genite-urinary system	583	7.0
7	Accidents, poisonings and violence	441	5.3
8	Diseases of the musculoskeletal system and	235	2.8
9	Endeerine, nutritional and metabolic diseases	221	2.7
10	Diseases of blood and blood-forming organs	196	2.4
	Total	8,287	100.0

Source: Reference (8)

(4) Rate of Parasitic Infection and Classification of Parasites

Rates of parasitic infection for two age groups in two districts are reported, as shown in the table below.

Table 2-15

Place	1–12 years	13 years & above	Total	Tire No.	Infection Rate
Bhaktapur	2,112	2,183	4,295	3,898	91.0%
Panchkhal	3,301	5,310	8,611	7,432	86.3%
	5,413	7,493	12,906	11,320	87.3%

Source: Reference (8)

Of a total of 12,906 samples of feces, 11,320 showed positive reaction. The average infection rate is 87.7% (the figure in the table seems to be a miscalculation). But there is a significant difference in infection rate between the two districts.

Table 2-16 shows a breakdown of parasitic infections by types of parasite - askaris, hookworm and trichuris. There are wide differences in infection rate for each type of parasite between the two districts. But in each district askaris infection is prevalent.

According to Dr. Benzamin D. Cabrera[8], an imaginal askaris in man's intestines consumes 2.3 g of carbohydrate and 0.7 mg of protein a day. Also he reports that it hinders absorption of vitamin A. So it is a matter of urgent necessity to exterminate parasites.

Table 2-16

(A) Bhaktapur

	1–12 years	13 years & above	Total
Askaris	1,544 (73.1%)	1,712 (78.4%)	3,256 (75.8%)
Hookworm	97 (4.6%)	209 (9.6%)	296 (6.9%)
Trichuris Trichuria	853 (40.6%)	890 (40.8%)	1,743 (40.6%)

Source: Reference (8)

(B) Panchkhal

	1–12 years	13 years & above	Total
Askaris	1,855 (56.2%)	2,770 (52.2%)	4,625 (53.7%)
Hookworm	977 (29.6%)	2,505 (47.2%)	3,482 (40.4%)
Trichuris Trichuria	762 (23.1%)	1,437 (27.1%)	2,199 (25.5%)

Source: Reference (8)

4. Summary of Problems of Population Census-Related Data and Information Collecting System

We have thus far pointed out the contradictory differences between the data and information obtained from the sample surveys, population statistics, vital statistics and statistics on diseases compiled by the Kingdom of Nepal authorities and those we directly collected by comparing the two sets of data and information. Here we will summarize these problems so that this summary may serve as reference data for use in our future surveys.

In the first place we must point out that we obtained so little accurate information from the existing statistical data collected in this survey, that there were very wide differences in value between the existing data and those we directly collected through interview surveys, and that as a consequence it was impossible to draw a true picture of the Kingdom of Nepal, which is suggestive of a true picture of this country.

It would be very difficult to have an accurate grasp of the population and vital statistics of the Kingdom of Nepal based on the current statistical system in this country. We can identify several important problems as possible reasons for this. It is desirable to improve on the following in order to obtain accurate statistical data in this country.

(1) Administrative Problems

1) The central government's machinery concerned with population and vital statistics is not fully centralized. There is a well-defined, hierarchical health organization headed by the Ministry of Health. But the actual situation is quite different from what is defined by such an organization chart. The actual organization is highly decentralized and there are no smooth communications among local authorities concerned. It is necessary to centralize the health statistical system itself.

2) Improvement of the registration system

A clear idea of resident registration, statistical data compiling and population problems is lacking. For example, the number of infants under 1 year of age are not included in the number of household members, nor are members of poor families registered. Furthermore, no figures for social increase (immigrations) are included in the statistical data.

3) Development of public transport

In order to promote residents' registration, it is necessary to streamline the registration procedures by increasing the number of places for registration procedures by increasing the number of places for registration and optimizing their locations. This is particularly the case with areas which lack adequate transport facilities.

In conducting an interview survey in mountainous areas investigators have to go on foot from house to house. In Terai District in particular road conditions worsen in a certain season.

4) A mere shell of the penal regulations

This relates to the registration system and government officials' awareness of the problems involved.

5) Necessity of improving data processing methods

In some government offices data processing has been computerized, but in all other government offices manual calculation is a common practice, causing many miscalculations. Joint use of data by means of an online system is desirable.

6) Development of an individual resident registration system

Individual resident registration is indispensable in monitoring changes in population structure. In actuality, there are so few people who knows their own correct dates of birth. As a result, it is impossible to obtain accurate data on age distribution of population, live births and deaths.

7) Enhancing statisticians' skills through their training

Any statistical data collection work requires the skills of well-trained statisticians. It is imperative to improve on the current statistical system in which any person capable of reading and writing is qualified as a statistician. Supervisors are all college graduates, but there are so few of them.

8) Improvement and expansion of medical facilities

Medical facilities are an important source of data and information on causes of death and diseases. In this connection, it is necessary to train and properly post medical professionals (medical doctors, nurses, midwives, clinical examiners, etc.)

9) Hospital statistical data collection system

It is possible to compile accurate data on causes of death and diseases by collecting data and information from medical facilities.

10) Improvement of environmental hygiene

There are many diseases which can be prevented by analyzing statistics on diseases and causes of death. They are also related to environmental hygiene.

(2) Problems on the Part of Residents

1) Enhancing residents' awareness of their obligation to register

The existing penal regulations are rarely enforced. In addition, many residents are reluctant to go out for registration due to possible loss of time (decrease in income) caused by lack of adequate transport facilities.

2) Effort to increase literacy rate

It is necessary to increase literacy rate to promote registration and spread of knowledge of sanitation. For this purpose it is necessary to increase school attendance rate.

Also it is necessary to make the Nepalese calendar compatible with the solar calendar so that residents can remember their correct dates of birth.

3) Improvement of residents' knowledge of sanitation

In view of the fact that infective diseases are one of the major causes of death, it is imperative to improve residents' knowledge of sanitation.

4) Improving residents' eating habits

Infants' malnutrition and vitamin deficiency can be prevented by improving residents' eating habits.

5) Enhancing utilization of medical facilities

6) Promoting early maternal medical examination, delivery at medical facility and delivery under the supervision of the midwife.

There are many cases of complications of pregnancy, delivery and

puerperium.

In addition to the above-mentioned problems, we felt it necessary to collect accurate data and information through house-to-house interview surveys in order to improve statistical data on population and health in Nepal.

In the case of infant mortality, for example, it is possible to know the structure and sex/age distribution of each family population through a house-to-house interview survey. Furthermore, it is possible to collect accurate data on live births, stillbirths, early neonatal deaths, neonatal deaths, infant mortality, child mortality, school child mortality, adult mortality, causes of adult deaths, miscarriages, premature childbirths, plural births, defective births, etc, by asking married women questions about the number of conceptions, child-births, child deaths and existing children.

For this purpose, it is necessary to reexamine questions to be asked in interview surveys and enhancing investigators' knowledge and skills. For the purpose of keeping continuous records from the standpoint of MCH, it is necessary to make full use of the mother-and-child notebook mentioned in Chapter 6, 3. as an individual health record.

On the other hand, population growth is triggered by decreases in infant mortality reate, decreases in total number of deaths and increase in old age population, as well as increases in birth rate. In this context, it is of vital importance to have an accurate grasp of deaths by age group in promoting the FP/MCH projects. In the 1976 and 1981 FP/MCH projects statistical data were compiled of the childbearing age population (15-49 age group) only. In view of the fact that many women under 14 years of age will reach the childbearing age in several years, it is important to collect data on births and deaths for all age groups. For this purpose, it is desirable to plan and implement a census

of the survey areas. In addition, long-term data and information collecting work as mentioned in Chapter 6.

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Chapter 3

FIELD SURVEY REPORT

CHAPTER 3 FIELD SURVEY REPORT

1. How Health Posts and Health Clinics are Utilized

(1) Dhanusha District

Reported here is a new attempt to evaluate the functions of health posts and health clinics. While it is impossible to expect advanced medical care services in the light of apparent shortages of hospitals and medical doctors, the importance of health posts and health clinics in Nepal's current health and medical care system is self-evident. Therefore, it seems necessary to quantitatively evaluate their functions to improve Nepal's health statistics and prepare reference data for use in future research and cooperation works.

For this purpose, we investigated the geographic and demographic areas covered by each of these medical facilities and prepared a map indicating this. This map show how many patients (cumulative total) from each panchayat visit the health clinic. In this survey we compiled new data based on existing raw data in collaboration with the Nepalese staff. In addition, we tried to collect or prepare maps of villages covered by these medical facilities.

1) Subjects of Survey and Survey Methods

i. Survey area

First of all, we identified the location of each health post or health clinic on the map. Then we showed the survey areas on the map (see the map shown in the beginning page of this report). This map was prepared on the basis of maps used at the FP/MCH District Office in Janakpur. And the health clinic attached to Chisapani Health Post in Godar was chosen as the survey area. At this health clinic a map

indicating the number of households and villages under the control of this health clinic is prepared by Mr. R.A. Yadav (Senior A.H.W.). This map and patients' clinical records over the past several years kept at this clinic were very helpful. It was impossible to investigate the other health posts because some of them were closed when we visited and because at the other we were unable to examine patients' clinical records due to our own time limitations.

We also prepared maps of health posts and vicinities in Ramdaiya and Sabaila.

ii. Survey methods

a. We had health post staffers enumerate the names of panchayats covered by them and estimate each panchayat's population from the population and number of households of each panchayat reported by fieldworkers.

b. We had health post staffers read the addresses of the patients written in their clinical records and tell the panchayat each address belongs to.

c. We calculated the number of patients in each panchayat for 1983 and 1984 from these records. The panchayats under the control of other health posts were classified as "Others."

d. Each panchayat was identified on the maps.

e. Annual cumulative number of patients visiting the health clinic, total population and the distance from the health clinic were calculated for each panchayat, and a map indicating the results was prepared.

f. Photos of the maps used at the health posts were taken. When such maps were unavailable, we prepared one based on the information we obtained from villagers.

2) Findings

i. Chisapani Health Post

There are six panchayats (Godar, Labatoli, Barmajhiya, Bharatpur, Yagyabuoomi and Umaprempur) under the jurisdiction of Chisapani Health Post in Godar. Total population, annual cumulative number of patients, distance from the health clinic (since most of these panchayats are located in a relatively flat area, average distance was calculated on the basis of the length of the road between the central point of the panchayat and the clinic) for each panchayat are summarized in Table 3-1 and Fig. 3-1. Fig. 3-1 shows the locations, total populations and annual cumulative numbers of patients of the six panchayats, which was made up on the basis of the map kept at Chisapani Health Post.

The ratio of annual cumulative number of patients to total population in each panchayat for 1983 and 1984 is: 6% and 7% in Godar, 9% and 12% in Labatoli, 1% and 1% in Barmajiya, 2% and 4% in Bharatpur, 2% and 2% in Yagyabuoomi and 0.1% and 0% in Umaprempur. The ratio of the number of patients from panchayats under the jurisdiction of other health posts to the total number of patients are 13.6% and 17.7%. Not a few of them came from the neighboring district (since Godar borders the neighboring district).

Table 3-1 How Godar Health Post is utilized.

Panchayat	Population	No. of patients/Year**		Distance	Remark
Godar	3,362	186	(228)	0.5 km	Adjoins H.P.
Labatoli	1,000*	86	(119)	3 km	Adjoins H.P.
Barmajiya	3,753	34	(52)	4 km	A river crosses the route. Detour is necessary in rainy season.
Bharatour	3,000*	65	(108)	3 km	Village on East-west Highway
Vagyabuoomi	4,000*	67	(91)	7 km	Village on near East-west Highway
Umaprempur	3,000*	4	(0)	9 km	Village on East-west Highway
Others		70	(129)		

Source: Patients' clinical records kept at Godar H.P.
Population: based on information from F.W.
* : approximate value.
** : 1983 (1984)

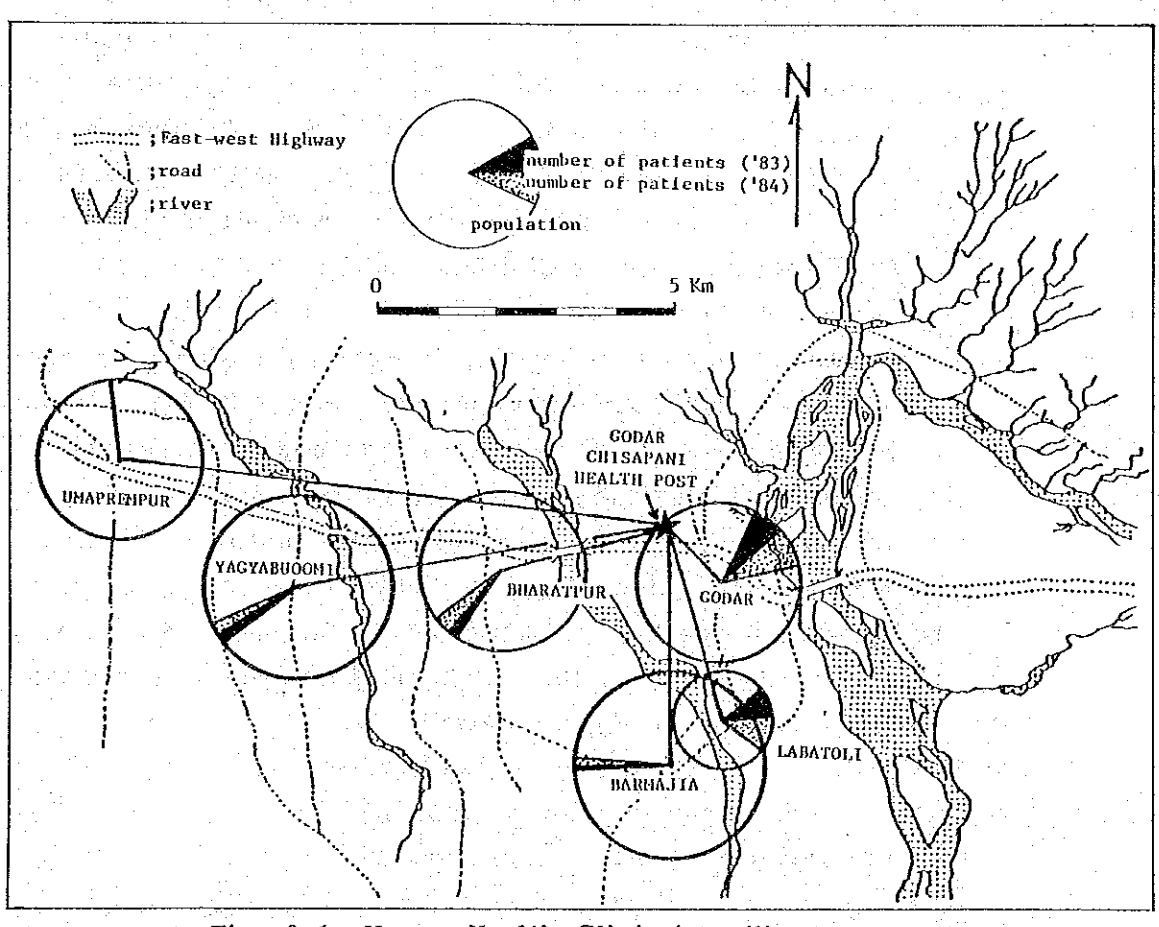


Fig. 3-1 How a Health Clinic is utilized, Dhanusha

ii. Map of Health Post and Vicinity

Figs. 3-2 and 3-3 show maps of health posts and vicinities in Ramdaiya and Sabaila.

According to the information we obtained from villagers, Ramdaiya's adult population (precise definition unknown) is about 4,500. A health post located in the neighboring village is not utilized so often by the residents of this village. When seriously ill, they go to the hospital in Janakpur. An A.H.W. working at the health post in the neighboring village resides in this village and offers medical services including vaccination (1 rupee per vaccination). There are a total of 12 wells (7 of which were investigated) in this village and each well is used by an average 36 households.

Sabaila has an adult population of about 4,500 (estimated total population is 15,000 to 20,000). There are 3 aged persons who are more than 90 years old. Every year about 700 babies are born. Ten children on the average utilizes the health post a day. Children's school attendance rate is about 80% and about 200 students attend the high school located on the outskirts of the village. Most of the villagers think that the health post is useful, but hope that a hospital will be built near their village. (Currently the nearest hospital is located 27 to 30 km away from the village. When necessary, they walk to the hospital.) Diarrhea, dysentery, parasitic diseases (ascaris and tapeworms) and whooping cough are the major diseases in this village. Some villagers contract cholera, typhoid or malaria from time to time. A villager maintained that something should be done about the river running across the village, which spawns flies and mosquitos. Of the 3 wells investigated, an average 55 households use each of them.

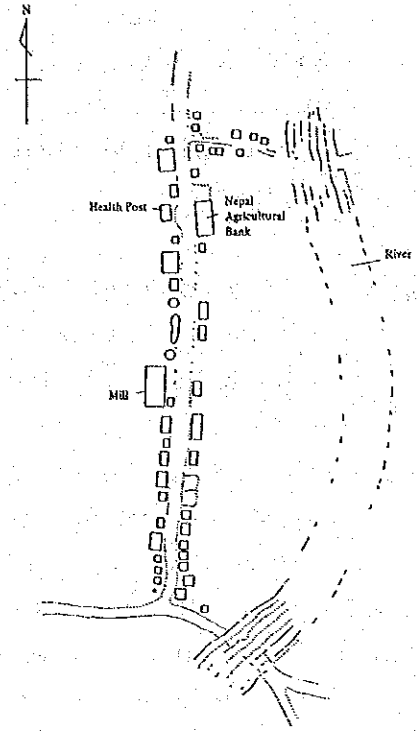


Fig. 3-2 Map of Sabaila Village

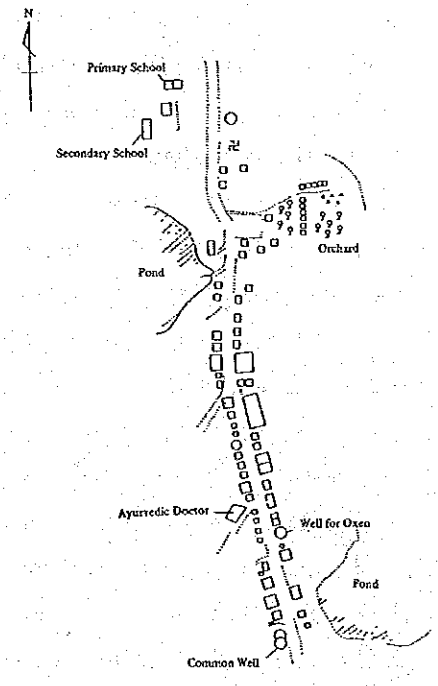


Fig. 3-3 Map of Ramdaiya Village

3) Discussion

Dhanusha District which borders on India is located in the vast subtropical plains of Terai. In the rainy season the rivers rise and the roads are fragmented by floods. Godar is located in the northeastern end of the district, on the East-west Highway.

In this survey the rate of utilization of its health clinic was calculated at 2.4% on the average. It would be difficult to judge the propriety of the rate based on the findings of this survey only. In comparison with Kavrepalanchok District, for example, the rate itself is about one-twelfth that of Kavrepalanchok. But the percentage of patients who come from villages under the jurisdiction of other health posts is very high. It would be possible to evaluate the rate if the morbidity rate in this district is known. But the current medical statistics in Nepal does not cover this aspect of vital statistics. Also it would be impossible to estimate the morbidity rate on the basis of the utilization rate since statistical data on this district's economic condition are unavailable. If we are to investigate the areas covered by health clinics, it will be necessary to investigate all the other health posts and health clinics in this district.

It seems comparison of the utilization rate in each panchayat under the jurisdiction of Chisapani Health Post in Godar will reveal the geographical factors involved. For example, the distance from the clinic may not be the sole reason for the difference in utilization rate. It appears that the utilization rate in Barmajhiya Panchayat where it is necessary to make detours in the rainy season is so small for the relatively short distance from the health clinic. In this respect, we have yet to examine the findings of a future survey to do more precise monthly calculations. It is certain that public works to improve roads and build bridges will greatly contribute to the increase in utilization rate. It should be noted, however, that almost all patients walk or are carried on someone else's shoulders to and

from the health clinic. We found that the utilization rate was higher in Labatoli, a neighboring village, than in Godar where the health clinic is located. This may relate to the economic condition ad sanitary environment in each village. We have yet to investigate this matter in a future field survey.

It will be possible to classify patients' clinical records by types of diseases. In this survey, however, we had no time to investigate the medical services offered at the health clinics in Dhanusha, evaluate them and compare them with those offered in Kavrepalanchok District. Judging from the names of diseases mentioned in patients' clinical records, it would be very difficult to do classification based on a universal criterion (international classification, for example).

(2) Kavrepalanchok District

In this district also we tried to quantitatively evaluate the functions of health posts and health clinics.

The health clinics in this district do nothing more than calculation of the monthly total number of patients (Tables 3-2 and 3-3). In this survey, therefore, we investigated the geographic and demographic areas covered by each health post or health clinic and prepared a map indicating the results of our investigation - how many patients (cumulative total) from each panchayat visit each health clinic during a specific period.

Table 3-2 Changes in Annual Total Number of Patients Visiting Khopasi Health Clinic

	New		Old	
	Male	Female	Male	Female
1980–1981	4,378	3,009	942	663
1981–1982	4,476	2,451	972	601
1982–1983	4,115	2,868	833	551
1983–1984	3,267	2,603	721	660
1984–1985	3,139	2,697	729	755

Source: Patients' clinical records kept at Nala Health Clinic.

Table 3-3 Monthly Total Number of Patients Visiting Nala Health Clinic

(Male/Female)

	New			Old		
	0 – 4	9 – 14	15 –	0 – 4	5 – 14	15 –
January, 1985	14/ 7	18/14	24/34	5/10	4/10	30/35
February	9/ 9	9/11	41/48	0/ 5	6/ 5	38/45
March	10/20	24/26	45/45	9/10	6/16	35/32
April	32/17	35/16	65/71	26/12	15/14	37/53
May	16/23	32/27	77/55	3/ 1	17/11	25/23
June	17/24	29/34	94/57	2/ 5	9/12	56/35
July	24/28	55/55	57/57	9/ 7	17/15	54/41
August	41/43	73/64	91/92	23/ 9	77/50	89/80
September	32/26	62/38	67/89	12/19	39/19	65/71
October	33/23	57/37	74/98	17/15	34/19	57/75
November	10/10	25/21	40/39	7/ 2	14/17	28/58
December	20/36	25/15	31/52	6/ 6	9/12	37/45

Source: Patients' clinical records kept at Nala Health Clinic

Table 3-4 Monthly Total Number of Patients Visiting Panchkhal Mobile Health Clinic

	Number of Patients (Male/Female)			Total
	0 – 4	5 – 14	15 –	
August, 1985	32/22	205/111	288/151	814
September	29/13	204/ 43	238/101	625
October	27/17	172/ 50	243/154	643
November	7/ 9	45/ 18	102/ 53	234
December	12/ 8	65/ 26	132/ 72	314

Source: Patients' clinical records kept at Panchkhal Mobile Health Clinic

We complied new data on the basis of existing raw data in collaboration with the Nepalese professionals.

Furthermore, we collected or prepared maps of health posts and health clinics and vicinities so that these may serve as reference data for use in future surveys.

1) Subjects of Survey and Survey Methods

i. Survey areas

First of all we identified the location of each of the health post and health clinics in Kavrepalanchok District on the maps. Then we indicated the survey areas on the map (see maps in the beginning page of this report). These maps were prepared on the basis of maps used at Dhulikhel FP/MCH Office and more precise ones we obtained later. Khopashi Health Clinic, Nala Health Clinic and Panchkhal Mobile Health Clinic were chosen as survey areas. We regret that we had no time to investigate those health clinics which are attached to other health posts. We prepared also maps of Khopashi and Nala Health Posts and vicinities.

ii. Survey method

a. We had health post staffers enumerate the names of panchayats covered and mention each panchayat's population reported by the fieldworkers. When no such statistical data were available, we used data provided by Director of FP/MCH Office.

b. We had health post staffers cite patients' addresses written in Nepali (some of them were written in English) and kept at each health clinic and the name of the panchayat each patient belongs to.

c. We calculated the monthly number of patients who visited each health clinic for the period from March to April 1985. Figures for other health posts are classified as "Others."

d. We then identified the location of each panchayat on the map.

e. We prepared a map indicating the monthly number of patients, total population, distance from the health clinic and geographical conditions of each panchayat.

f. We took photos of all the maps used at each health post or health clinic. When no maps were available, we prepared maps based on our own investigation of the health posts and vicinities.

2) Findings

i. Khopashi Health Post

There are 6 panchayats - Khopashi, Sunthan, Chalal, Balthali, Sankupali and Bhumedanda - covered by Khopashi Health Post. Each panchayat's total population, monthly number of patients, distance from the health clinic (the length of the road from the center of panchayat to the health clinic) and geographical conditions are shown in Table 3-5 and Fig. 3-4. Fig. 3-4 shows each panchayat's population and annual cumulative number of patients.

The ratio of the monthly number of patients to total population in the six panchayats is: 7.2% in Khopashi, 2.4% in Sunthan, 1.0% in Chalal, 4.3% in Balthali, 1.5% in Sankupali and 0.9% in Bhumedanda. The ratio of the number of patients from panchayats covered by other health posts to the total number of patients is 7.4%. A patient who

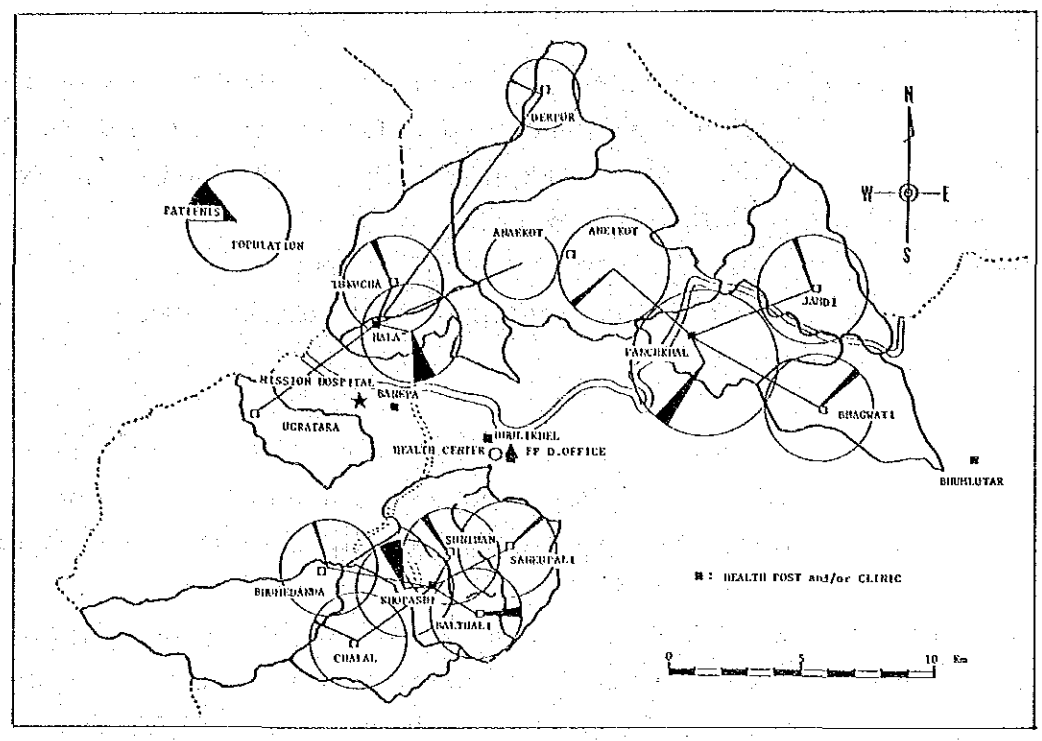


Fig. 3-4 How Health Clinics are utilized; Kavre

Table 3-5 Rate of Utilizationn of Khopashi Health Clinic

Panchayat	Population	Monthly Total No. of Patients*	Distance	Remark
Khopashi	2,767	200	1 km	Located on a low hill.
Sunthan	2,940	72	3 km	Located near the health clinic, but there is no bridge over the river crossing the route.
Chalai	3,495	35	7 km	
Balthali	2,413	104	2 km	
Sankupali	3,176	49	3 km	It is necessary to skirt around fields and mountains.
Bhumedanda	3,040	27	9 km	Located in the western end of the district.
Others	–	39	–	

Source: Patients' clinical records kept at Khopashi Health Clinic.
Population: based on figures reported by fieldworkers a year ago.
*: March–April, 1985.

came from Kathmandu visited the health clinic during her first stay back at old home after her marriage.

ii. Nala Health Post

We were told that there are 5 panchayats - Ugrachandi - Nala, Tukucha Nala, Derpur Naya, Anaekot and Ugratara - covered by Nala Health Post. Each panchayat's population, monthly total number of patients, distance in a straight line between the center of panchayat and Nala Health Clinic and geographical conditions are shown in Table 3-6 and Fig. 3-4. We were unable to obtain the figure for Ugratara's population (this panchayat is isolated geographically). Since Nala Health Post does not keep records on each panchayat's population, we used the figures provided by FPO..

The ratio of the monthly total number of patients to total population in the 4 panchayats is: 7.1% in Ugrachandi Nala, 2.0% in Tukucha Nala, 0.35% in Derpur Naya, and 0.0% in Anaekot. The ratio of the number of patients from panchayats covered by other health posts to the total number of patients is 1.6%.

iii. Panchkhal Health Post

There are 4 panchayats - Panchkhal, Bhagwati, Aneikot and Jamdi - covered by Panchkhal Mobile Health Clinic. Each panchayat's population, monthly total number of patients, distance from the center of panchayat to the health clinic and geographical conditions are shown in Table 3-7 and Fig. 3-4.

Table 3-6 Rate of Utilization of Nala Health Clinic

Panchayat	Population	Monthly Total No. of Patients*	Distance	Remark
Ugrachandi Nala	3,200	227 (255)	0 km	Located at the foot of a mountain.
Tukucha Nala	3,022	59 (80)	2 km	Located at the back of a mountain.
Derpur Naya	1,710	6 (8)	11 km	It is necessary to cross or skirt around a mountain.
Anaekot	1,500	0 (3)	7 km	It is necessary to cross or skirt around a mountain.
Ugratara	?	11 (23)	5 km	Geographically isolated.
Others	–	5 (3)	–	

Source: Patients' clinical records kept at Nala Health Post.
Population: based on FPDO's data.
* : March–April (April–May) (1985)

Table 3-7 Rate of Utilization of Panchkhal Mobile Health Clinic

Panchayat	Population	Monthly Total No. of Patients*	Distance	Remark
Panchakhal	6,689	223	1 km	Located in a flat area.
Bhagwati	3,227	52	7 km	
Aneikot	3,565	52	5 km	Located on a highway.
Jamdi	3,942	36	5 km	Located on a highway.
Others	–	73	–	

Source: Patients' clinical records kept at Panchkhal Mobile Health Clinic.
Population: based on figures reported by fieldworkers 2 years ago.
* : March–April (1985)

The ratio of the monthly total number of patients to total population in the 4 panchayats is: 3.3% in Panchkhal, 1.6% in Bhagwati, 1.5% in Aneikot and 0.9% in Jamdi. The ratio of the number of patients from panchayats covered by other health posts to the total number of patients is 16.7%.

iv. Maps of the health posts and vicinities

Figs. 3-5 and 3-6 show maps of Khopashi and Nala Health Posts and vicinities. Fig. 3-6 was prepared on the basis of a map of Nala Village the existence of which was pointed out by Mr. Prakash who collaborated with us in investigating Nala Village.

Panchkhal Mobile Health Clinic is utilizing a picture map of the village in its medical services to residents of the panchayat.

Fig. 3-5 Map of Khopashi Health Post and Vicinity

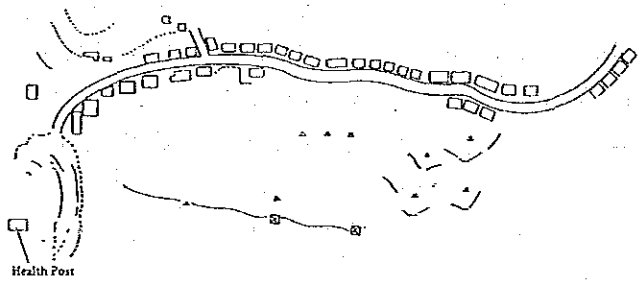
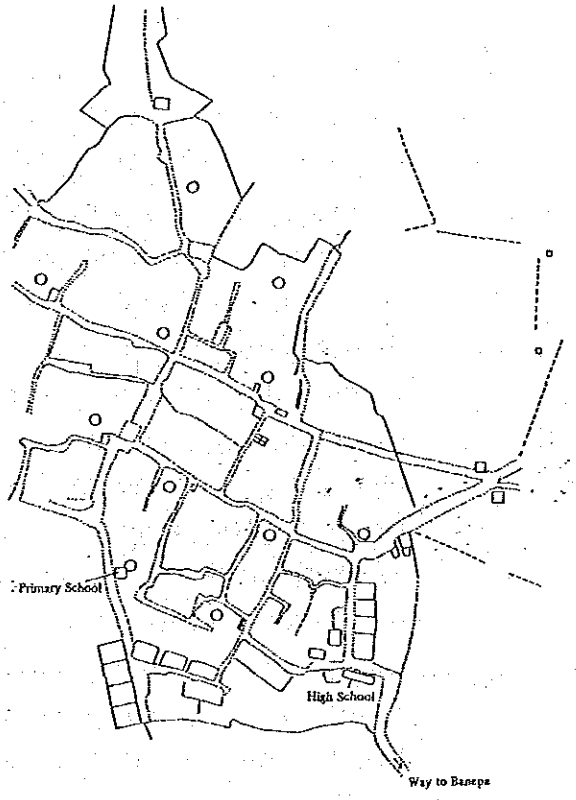


Fig. 3-6 Map of Nala Health Post and Vicinity



3) Discussion

Kavrepalanchok District is located in undulating hills in the eastern part of the Kathmandu Basin. When visiting the health post by car, we saw terraced fields and shelf fields, and the Himalayas appearing between them, from the car window. Khopashi Health Post covers the panchayats located in the mid-western end of the district (near Kathmandu), Nala Health Post those located in the northwestern pat of the district (near Bhagdapur) and Panchkhol Health Clinic those located in the mid-northern part of the district. Khopashi Health Post is located on a gently-sloping hill, Nala Health Post at the foot of a mountain in a vast valley and Panchkhal Health Clinic in the center of a flat area. It was interesting to notice that each of these facilities is located on the outskirts, not in the center, of the village (the same is true of Godar Health Post in Dhanusha District).

The ratio of the monthly total number of patients to total population was 2.7% in Khopashi, 3.1% in Nala (excluding Ugratara) and 2.1% in Panchkhal, the average being 2.6% (S.E.: 0.37). How these figures should be evaluated is a very difficult question. The monthly facility utilization rates for the three clinics are equivalent to the annual utilization rate for Godar Health Post in Dhanusha. But it is irrelevant to reach a final conclusion without investigating the economic background, hygienic environment, morbidity rate, etc. of the two districts. Similarly, it is not so easy a task to make comparison of the three health clinics in Kavrepalanchok District. For example, Panchkhal Health Clinic, which is not open all the year round, has lower monthly utilization rates than other clinics. But it has the highest ratio of patients from panchayats covered by other health posts to the total number of patients. Nala Health Clinic has the highest average utilization rate, but the utilization rates in the panchayats covered by this clinic differ widely. This clinic is used almost exclusively by patients from two Nalas.

This may be because Nala Health Clinic is located so far away from Derpur Naya and Anaekot and in addition it is necessary to cross or skirt around a mountain to reach the health clinic. The opposite is the case with Panchkhal Health Clinic which is located in a flat area.

In this survey we were unable to investigate the health clinics in Banepa, Dhulikhel and Bhumlutar. It is necessary to investigate these clinics in order to examine all the areas covered by health posts and health clinics in Kavrepalanchok District.

Lastly it should be noted that at Panchkhal Mobile Health Clinic statistical data are classified by types of diseases based on ICD.

2. Interview Survey in Model Areas

(1) Dhanusha District

1) Method of selecting samples

In conducting a home visit interview survey in Dhanusha District, we tried to find out problems from the viewpoint of the users of medical services.

(a) In Janakpur the residents tend to utilize medical facilities located in the village rather than a health post near the village which provide insufficient medical services. There are many medical facilities - Janakpur Hospital (50 beds), private clinics and pharmacies - in Janakpur, which seems to explain the low health post utilization rate.

(b) By contrast, it appears that health posts are very important medical facilities in places far away from Janakpur.

(c) It seems that the villagers tend to utilize medical facilities other than health posts in a village located halfway between

two health posts.

We selected samples on the basis of the three points mentioned above.

We selected 4 households in Ramdaiya Village in terms of (a), 7 households in Sabaila Village in terms of (b) and a household in Barmajiya Village in terms of (c). As this was a short-term survey we selected a relatively small number of samples in this survey, and the questionnaire of this time was used as a kind of pre-test.

In the next section, some of demographic indicators and location of the village surveyed and the findings of this survey are described.

2) Findings of survey

i. Ramdaiya Village, Ramdaiya Panchayat

Population:	4,122
No. of households:	754
No. of cases of sterlization:	161
No. of the households surveyed:	4

(Location)
12 km away from Janakpur

(Findings of Survey)

The findings of the survey of the 4 households are as shown in Table 3-8. The households surveyed are three households owning land (8 bigha, 3 biga and 0.3 biga) and a household engaged in peddling. The unit of land area in Nepal varies from one region to another, but in Janakpur 1 bigha is equal to 0.7 ha. As anticipated at the time of

Table 3-8 Findings of Survey (Ramdaiya)

	(a)	(b)	(c)	(d)
No. of family members (Figure in parentheses indicates no. of children)	8 (4)	5 (3)	7 (2) Living with brothers and sisters	6 (4)
Occupation (Figure in parentheses indicates size of landholding)	Farming (8 bigha)	Farming (3 bigha)	Carpenter Land (0.3 bigha)	Commerce (Selling POP rice)
Education				
Husband	Literate with no education	Completed 4-year course	Illiterate	Illiterate
Wife	Illiterate	Illiterate	Illiterate	Illiterate
Sons	Education suited for school age	Education suited for school age	Education suited for school age	Education suited for school age
Daughters	Illiterate	Iliterate	–	Illiterate
Source of water supply	Individual well	Common well	Common well	Common well
Lavatory	Not installed	Installed	Not installed	Not installed
Utilization of health post	Not utilized When ill, go to private clinic in Janakpur, when seriously ill, go to India	Not utilized Go to hospital in Janakpur	Not utilized When ill, go to Ayurdedic doctor	Not utilized Obtain drugs from brother working for health post
Medical check-ups of pregnant women	None	None	None	None
Place of child-birth	Home	Home	Home	Home
Infant deaths	2	1	1	None
Family planning				
Method & source of information	Male: sterilization In mobile camp 10 years ago	Condom PBHW's home visit	Female: sterilization In village sterilization campaign	Female: sterilization PBHW's home visit

selecting the villages to be surveyed, in Ramdiya near Janakpur the health post utilization rate is low. They scarcely go to health post.

As regards family planning, PBHW's activities and the mobile clinic are playing an important role. The residents' educational level is low. They scarcely read periodicals or newspapers. Being so poor, they cannot afford to listen to radio broadcasts. Thus PBHW's visits to explain about family planning seem to be exerting a great influence on them.

As to MCH, on the other hand, pregnant women are not accustomed to receiving regular medical examination until the time of delivery. At the time of delivery, the traditional midwife is called in. But when the traditional midwife is absent, some member of the family acts as attendant. Even from this limited survey, we could conclude that in this village pregnant women's health care and medical services do not prevail so well.

As to the source of water supply, it differs widely according to the size of land holding (here area of land holding can be considered an economic indicator). The household owning land of 8 bigha owns an individual well for its exclusive use. In Dhanusha the average per capita land holding is 0.21 ha.(6) By this standard, the households (a) and (b) own the average size of land.

During this survey several villagers always accompanied us. But women strictly observe the custom of "parda" and hide themselves somewhere in the house when a stranger comes. So it was very difficult to interview women in this survey. As is clearly shown in Table 3-8, there is a clear difference between males and females in educational level. At the household (a), the head of the household has opinion that it

is not necessary to have female members get higher education because they usually marry early. Also this household is reluctant to let its female members go out even for education. It should be noted, however, that economic factors are not necessarily the reason for the low level of women's education. As mentioned above, the household surveyed are quite affluent households in Dhanusha. They are simply conservative and cliquish as far as education of women is concerned.

There is a point to be noted as to the age of marriage. That is, the age of infant marriage does not necessarily means the age at which their married lives begin. For some time after infant marriage the married infant couples live separately from each other. Thus it is hasty to consider the age of marriage one at which married females' reproductive age starts. It is essential to bear this in mind when asking a married woman her age of marriage.

ii. Sabaila Village, Sabaila Panchayat

Population:	5,957
Male:	3,065
Female:	2,892
No. of households:	952
No. of cases of sterilization:	145
No. of households surveyed:	7

(Location)

It is two hours by car from Janakpur to this village (58 km on the trunk road and 30 km on the village road). It was in the dry season that this survey was conducted. The village road was so slippery that it was very difficult to drive on it. But the river was so low that it was easy to cross the river. In the rainy season (June-September) the

river rises so high that it is very difficult to visit the village in that season.

(Main Facilities)

Medical facilities:	Health post, FP/MCH clinic. Sub-center, Ayurvedic Clinic was closed when we visited the village because it was the harvest season.
Educational facilities:	Primary school; 1 Middle school; 1
Bank:	1

(Findings of Survey)

In this survey our Nepalese counterparts also conducted an interview survey of 4 households on their own. Thus we could obtain a total of 7 samples in this village. In Sabalia the villagers' residential blocs are classified according to social status (caste). In the map of Sabaila Village, which was shown in Fig. 3-3 in 1. of this chapter, the area on the south of the health post is inhabited by people of rather low caste such as shoemakers and agricultural workers and the area on the north of it by people of high caste. Of the 7 households surveyed, 6 are engaged in farming. Three households are land-owners and the remaining three are agricultural workers. In the survey conducted by our Nepalese counterparts, some questions remained unanswered due to inadequate prior explanation. In this survey the difference as shown in Table 3-9 was noticed between the landowners and the agricultural workers. As was the case with our survey in Ramdaiya Village, there were differences in source of water supply, concept of vaccination, reception of medical care services, etc. according to the size of land

holding. More affluent households are more receptive to medical care services, vaccination and so on. In Sabaila Village which is located far away from Janakpur, PBHW's activities were not so conspicuous as in Ramdaiya Village. Two FP/MCH Health Aids are stationed in this village. They offer medical care services once a week at FP/MCH Clinic (45 patients on the average in a clinic day) and conduct house-to-house visit for the rest of weekdays.

Table 3-9 Findings of Survey (Sabaila)

	Landowner	Agricultural worker
Electricity	Not installed	Not installed
Lavatory	14 bigha: installed Ohters: not installed	Not installed
Source of water supply	Individual well	Common piped water, common well
Place of childbirth	14 bigha: medical facility 5 bigha: home/lady H.W. 3 bigha: home/lady A.H.W.	Home/traditional birth attendant
Vaccination	14 bigha: small pox, BCG 3 bigha: DPT 5 bigha: did not have children vaccinated but want to have grandchildren vaccinated.	None
Family planning	Only one household (sterilization, parents of 3 sons and 2 daughters)	None
Place of purchases	Foods: in village Others: in the nearest town	In village (clothes and so on are provided by landlord.)
Health post	Utilized sometimes. When seriously ill, go to Janakpur Hospital.	Used only once. Prescribed same medicine at every diagnosis./Go to private clinic.