

## **Health Needs in Two Ethnic Communities of Humla District, Nepal**

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## Introduction

This report summarizes findings from a primary health care baseline study conducted in September and October of 1999, in upper Humla District, Nepal.<sup>2</sup> This study establishes measures of health conditions in Humla, and constitutes a baseline against which progress in improving the health services and conditions for local people may be measured. This report is an integral piece of the process of primary health care development in Humla, a remote region with scant record of health statistics at the village level. In addition to the Ministry of Health and its staff and partners, a number of NGOs are working in the health sector in the District, including the ISIS Foundation, Unitarian Services Committee Canada, Nepal, The Nepal Trust, and Appropriate Technology Asia. Public health projects focused on such technologies as safe drinking water systems, latrines and smokeless stoves, are underway, as well as projects focused on primary health care services themselves. This and subsequent papers will record, measure, and publish data to help assess the progress that has been made in improving health conditions in this area.

## Site: Humla District, Nepal

### District Description

Humla District is located in the remote northwestern corner of Nepal. Straddling 30°N latitude and lying between 81° and 82° longitude, Humla is one of Nepal's "High Himalayan" districts<sup>3</sup>. It is one of the most isolated regions in Nepal, reachable only by foot or on the small planes that land irregularly in the district capital, Simikot. The district lacks roads altogether and indicators of development are correspondingly low: there are no hospitals (though an under-equipped health post exists in Simikot) and literacy rates are among the lowest in the country: 28% for males and 5% for females (USCC statistics). Population density is also very low, less than ten persons per square kilometer (UN Publications 1997). This is due partly to the fact that along with the other northwestern districts of Nepal (Manang, Mustang, Dolpo, and Mugu), Humla has relatively low total fertility rates. The total fertility rate (total births per woman) for the district was estimated at 4.5 in both 1986 and 1991, while the rest of Nepal was 6 in 1985 and 5.6 in 1990 (UN Publications 1997, World Population Profile 1996). The relatively low total fertility rates in the northwestern regions may reflect the proportion of their populations that is composed of polyandrous Tibetans. Polyandry is a marriage system practiced by many ethnic Tibetans in this area, and allows a single woman to have multiple husbands simultaneously. The common practice is for a woman to marry a man and all of his brothers, and to have sexual relationships with each of them. Unmarried women do not typically have children in this system and are thus excluded from the pool of reproductive women. At an aggregate level, this practice depresses the fertility rate (see Haddix McKay, this volume).

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<sup>2</sup> In 1998 the ISIS Foundation, in collaboration with Unitarian Services Committee, Canada (USCC), began to lay the groundwork for primary health care development projects in several Village Development Committee areas of Humla District.

<sup>3</sup> Nepal is divided from north to south into five regions: the High Himalaya, the High Mountain, the Middle Mountain, the Siwalik and in the furthest southern areas, the Tarai (Topographic Survey Branch, Survey Department, HMG Nepal 1987). Glaciers cover parts of the High Himalaya.

## Existing Infrastructure

The Nepali civil organizational unit of importance to this report is the Village Development Committee, or VDC. There are nearly 4000 VDCs in Nepal. Most are divided into nine wards. Ward representatives elect members of the District Development Committee (DDC). Prior to the democratization of Nepal in 1990, areas roughly corresponding to today's VDCs were called panchayats. In contrast to the panchayat era, VDC representatives can be male or female and are democratically elected to their positions. Chairmen, or women, even at the VDC level, are treated with deference and respect by local people, and it is critical to have their approval before pushing ahead with any program<sup>4</sup>.

Though the acronym 'VDC' in fact refers to a governing body, in practice it is usually used to refer to a village or a collection of villages. Where villages are large, a VDC is comprised of one village, broken down into wards, or subsections of the village. Where villages are small, a VDC is comprised of several villages, or clusters of wards. This is usually the case in Humla. Data for this study were collected in Thehe VDC, Syada VDC, Kangal VDC, and Muchu VDC. Thehe and Syada VDCs are comprised mainly of Chettris, and Kangal and Muchu VDCs entirely of Lamas. For this study, seven villages were surveyed; one in Thehe VDC, three in Syada VDC, one in Kangal VDC, and two in Muchu VDC.

Nepal cannot keep up with the health demands of its population, in part because of an under-funded health system, but also because many districts are remote and communications and delivery of supplies are extremely difficult, if not impossible. During the data-collection period, the National Polio Day occurred, on which the Polio division at UNICEF attempted to vaccinate every child less than ten years of age in Nepal. It was a massive effort, requiring intensive coordination and organization, and many children were vaccinated. However, in Humla vaccinating all children was simply impossible due to the distance of many villages from Simikot and the absence of a cold chain along the way. In order to reach all of the children in the district, health workers had to walk from Simikot with coolers containing the vaccine. The coolers kept the vaccine cold for a maximum of three days—but many villages in Humla are more than four hard days walk from Simikot. And because villagers did not know that the vaccinators were coming, more than 75% of Lama children needing vaccination were in even more distant yak pastures, as they always are at that time of year. These factors combined made the total-eradication goal of the UNICEF Polio division impossible, at least in Humla. This failure exemplifies some of the obstacles faced by national health programs.

According to Purdey (1998), there were 33 hospitals in Nepal in 1950, with twelve doctors and 600 beds, for a national population of 8.7 million. In 1979 there were 745 health posts and the population had reached 14 million. In the 1990s a strong emphasis on rural health care had emerged in the Nepali national health program, and by 1996 the number of sub-health posts had increased 12-fold, from 200 to 2597 (Hotchkiss 2001, quoting HMG/Nepal, Ministry of Finance, 1996). Only recently has the focus of the national health system turned from clean drinking water programs to meeting the primary health needs of the country (Purdey 1998: 7-8).

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<sup>4</sup> This system has been gravely disrupted by the Maoist agitation, especially in 2001-2002, and may ultimately evolve into another form of local governance, but at the time of this study, the VDC system was in place and functioning.

However, in remote areas like Humla, the government simply can not meet the needs of the populace. Formally trained health workers, all government employees, are posted to remote areas but many begin preparations for transfer immediately after arrival. A remote posting is challenging for non-local health workers, as they lack appropriately trained support staff, rarely have supplies, often work in dark, cold buildings without furniture (even examination beds for patients), and without proper social support. Additionally, most of the people they need to help are uneducated about health, do not have a germ theory of disease, and often cannot understand or follow directions for treatment.

Training female health workers for remote areas is especially important given the Nepalese combination of gender roles discouraging men from attending births and the extraordinarily high rate of maternal and infant mortality. Additionally, women are the primary cooks and caretakers of young children, and need to be the targets of much essential health education. Female health workers would most effectively deliver this education. However, for female health workers, a remote posting can be especially challenging and isolating. During this study this was most obvious in Syada, where the female health worker faced all of the challenges described above, in addition to a two day walk between her home and her post, which she traveled once or twice monthly, accompanied by a breast-fed child. It is unusual for women to travel that far alone, especially in Hindu communities (she is a Lama from one of the Thehe VDC Lama wards), and that probably contributed to her sense of isolation in the traditional Hindu village where her post was.

Despite challenges, a national health-care delivery system does exist even in remote areas. In Humla there is a health post in Simikot, and each VDC in the study also has a sub-health post. The most powerful health figure at the district level is the District Health Officer (DHO), who is stationed in Simikot. The DHO at the time of this study had only recently been transferred to Humla, and thought he might soon be transferred to another district. With him worked a District Public Health Officer, a nurse, and other staff and peons. According to nearly all of the people with whom we spoke, it is often only the peon who is available at both the health post and sub health post level. Although the peon is authorized only to unlock the door, remove trash, etc., many villagers who had visited a health post or sub-health post had received medicine from a peon.

According to the staffing requirements of national health system, each VDC should be furnished with an auxiliary health worker, a village health worker, and a maternal and child health worker. In Humla, few in fact are, due to remoteness, and the difficulties in transportation and staff support presented by the terrain and conditions.

### Villages Surveyed

Humla is nearly bisected by the Karnali River, a major source of the Ganges River. It cuts a steep gorge into the northwestern part of the district. The villages surveyed for this study, Thehe, Santa, Syada, Kholshi, Kermi, Yelbaun, and Yengar, are located on its banks. Simikot, the district capital, is also located on the Karnali, on the north bank. It is the district's largest population center, and has the only market in the region. Flights to Simikot from Nepalganj, a town on the Indian border, arrive three or four days a week, weather permitting. Some flights deliver trekkers en route to Mount Kailas in Western Tibet, which can be reached by hiking up the Karnali River. Others deliver food and supplies for the market, as well as local passengers. From Simikot, one can walk three hours east to Bargaun, a Lama village of the Nyinba people.

Nearly one thousand feet below Bargaun is the Hindu village of Thehe, the second largest population center in Humla (Purdey 1998). Thehe VDC contains six wards of Hindus and three of Lamas. Thehe village itself contains three hundred twenty-one households. It is extremely poor and land-stressed, and standards of living are very low. Compared with the Nyinba of Bargaun, who through polyandry and clever business practices have kept their people-to-land ratio low and productive, the people of Thehe suffer living conditions that are extremely difficult. Most people in Thehe belong to the Chettri caste, though there are a handful of Bahun households, and an entire ward (including 65 households) of occupational castes as well. Members of the occupational castes are mainly blacksmiths, cobblers and tailors, and they are the primary wood collectors for the village. Eighty-eight percent of them do not use the communal taps located in central places in the village, opting instead to collect water from nearby springs or rivers (USCC 1991).

One day's walk to the west of Simikot, over the steep Simikot La (pass) and across to the south side of the Karnali River, is Syada VDC. It contains four villages: Yangu, Santa, Syada and Kholsi. We surveyed three of these, including Santa (twenty-seven households), Syada (one hundred twenty-five households) and Kholsi (fifty-four households). These villages are unusual, as they are mainly comprised of a group of people whose culture combines elements of both Hindu and Buddhist systems. In the anthropological literature they are referred to as Bura or Byansi people (Levine 1987). When asked about their origins, however, local people carefully denied any links to Lama traditions and identified themselves as Chettris, Brahmins, or as members of occupational castes. This is no doubt due to the general low esteem in which Lama people are held by Hindus, who think of them as relatively backwards and uncivilized (particularly distasteful to Hindus are the practice of polyandry and the consumption of beef, which occur among Lamas).

Kholsi is composed almost entirely of members of the Thakuri caste, an ancient royal caste from the Malla period. Their strict marriage rules allow them only to marry other Thakuris, which is limiting since there are so few Thakuris in this area. Traditionally, Thakuris expect to be addressed by other Nepalese with the royal honorific form of Nepali, and some tension arises over this between them and other Nepalese. The contradiction between this expectation and the extreme poverty in which inhabitants of Kholsi live (the worst in this VDC) has presented some obstacles for development efforts made by non-Thakuri Nepalese in Kholsi.

A five-hour walk to the northwest of Kholsi, back to the north side of the Karnali River lays Kermi village, one of the ward-clusters of Kangal VDC. It is entirely Lama, composed of ethnic Tibetan Buddhists, who speak Tibetan as their first language, follow the traditions of the Nyingmapa lineage of Tibetan Buddhism, and practice polyandry (about 35% of marriages are polyandrous in 1996, and 42% of the monogamous marriages used to be polyandrous before brothers split up and remarried monogamously, see Haddix McKay, this volume). There are two small village monasteries in Kermi, where a number of celibate monks and nuns go during the months of the year dedicated to religious activity. There are nearly eighty households in Kermi.

Five hours walk beyond Kermi, across another pass and tributary to the Karnali River are the villages of Yelbaun and Yengar, part of Muchu VDC. Like Kermi, Yelbaun and Yengar are Lama villages, containing about 20 households apiece. Between them is Namkha Khyun Zong monastery, a large Nyingmapa monastery that draws monks from all of the surrounding Lama villages. Yengar boasts a small hydroelectric project, built some years ago by a Dutch development organization. It has suffered from not having any maintenance funds and from the lack of local repairmen. When working, it

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provides enough electricity for several lightbulbs per house in Yengar, and for the monastery. There is also a small primary school nearby, with a boarding facility for children who come from other villages. Also between Yengar and Yelbaun is a small privately funded health clinic run by staff of The Nepal Trust, a Scottish-registered charity and non-government organization. The clinic has two local staff members.

Living conditions in all of the villages in the study are difficult. Houses are small, poorly ventilated, and unlit. Most are built in three stories, with domestic stock kept in rooms on the lowest level, the main room (for cooking, sleeping and eating) and storage rooms on the middle level, and storage rooms (for equipment and hay) above. The third level of the house is mostly open—comprised of the roof of the second level, at the back of which (against the hillside) are the storage rooms. When the weather is nice the rooftops are sunny and pleasant and are the primary site of public meetings, domestic chores such as threshing, children's play, and general socializing. The main room may have a wood floor, but is often made of hardened mud (re-plastered regularly with a cow-dung and water mixture), and is centered on the cooking fire. There may be one small window in this room, but most light comes from the fire and a hole in the flat roof above it. The hole is partially shaded to keep out rain and snow, and is to let light in and smoke out. Generally, this room is extremely smoky, and when the fire is burning it is impossible to stand without eye and lung discomfort.

Except for in Yengar, none of the houses have electricity or running water. In most villages there are central taps (two or three per village), which work sporadically and provide unfiltered water (as they draw from streams uphill from the villages they probably are contaminated by domestic stock in the pastures above).

Most villages are compact, with houses built on top of each other on hillsides, leaving little space in between. In some villages, it is possible to walk from one end to the other without leaving the flat rooftops. Trails in between houses are often deep in mud and are littered, often with human excrement. Although there has been limited progress on latrine projects in Thehe and Syada, at the time of this study there had been little progress made in other VDCs, either in building latrines or in convincing people to use the ones that have been built. In Thehe there have been land availability problems and superstition surrounding latrine projects. Fields are considered sacred and off-limits as latrine locations, and villagers claim that there is no available space within the village itself.

### **Study Objectives and Limitations**

The main objective in conducting this study was to develop a baseline measure of health conditions. This was to allow Humla NGOs working in health to measure progress in improving health conditions over time. Subsequent studies will provide an opportunity to identify and target the areas in which NGOs need to focus their efforts. The research team pursued six areas of inquiry: hygiene and sanitation, immunization and vitamin programs, disease prevalence, attitudes about disease treatment, childbirth and family planning practices, and anthropometry.

The research team faced certain limitations. The primary one was that the people we interviewed were themselves mystified by their own health and illness, and by the treatment they had received on the occasions they had actually visited a doctor or nurse. Villagers were unsure about the vaccinations their children had received and they did not know the names of the conditions they suffer, or even how to describe them accurately. Very few people suffering from sickness had ever seen a doctor, and even

those who had were often unable to remember the name of their condition. Some of the diagnoses they did remember seemed improbable (this may have been due to a lack of proper diagnostic equipment available to the DHO and other health workers). Second, the research team did not have time to physically enter every household, see every sick villager, or interview each person. Consequently we relied upon a 25-30% sample of households for our in-depth interviews, and upon group interviews and the reports of VDC and Ward chairmen and other knowledgeable villagers for tabulations of the numbers of people suffering from various conditions. In the author's experience in Humla (based on extensive anthropological fieldwork there in 1995, 1996 and 1998), group interviews on topics such as this yield quite accurate results, as villagers are intimately aware of the conditions of life in every household in their village.

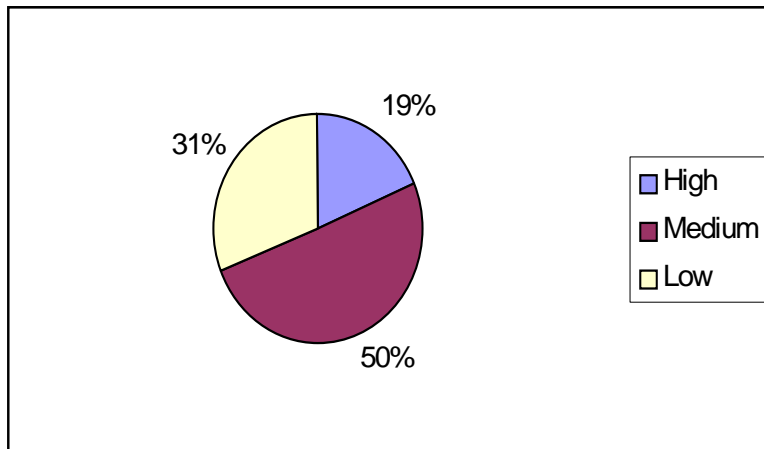
### **Composition of Sample/Data Collection Methods**

The sample upon which the following analyses are based is drawn from the seven villages described above: Thehe, Syada, Santa, Kholsi, Kermi, Yelbaun, and Yengar. The research team aimed to survey between 25 and 30% of all of the households in each village, yielding a total of 105 households surveyed. The interviewees were the male head of the household, his wife, or the female head of the household if her husband had died. The mean age of the interviewee was 39.9, and the range of ages of people interviewed was from 20 to 95.

Data were collected by the author and a research assistant from Kermi village, Mr. Angjuk Lama. We began with group interviews in each village, with the VDC Chairman and/or the Ward Chairmen and other knowledgeable people, and had a general discussion about health and development, treatment practices, locally perceived needs, and health problems that people felt were specific to their village. One-on-one interviews were then conducted, using the questionnaire that can be seen in Appendix 1. Data were entered and analyzed on a PC, using the data analysis package JMP IN (SAS Institute 1996).

The sample was stratified in order to have households of varying amounts of wealth represented. This is because we suspected that the amount of wealth that household members had access to might affect their ability to afford medical care, and that amount of wealth and education about health might be correlated in a way that affected health-seeking behavior. The method to ascertain each household's wealth we used was based upon USCC's threefold (high/medium/low) categorization of households in Syada VDC (USCC 1999) and upon the author's threefold wealth categorization in Kermi, Yengar and

Figure 1. Categorization of households in sample by wealth



Yelbaun (Haddix 1998). USCC used number of fields and herds, house size, and other indicators of wealth per household, in addition to subjective wealth categorizations by independent villagers, to develop their wealth categories and the assignment of houses to those categories. Haddix' (1998) categorization was also based upon the number of fields and herds owned by each household and the social categorization of wealth by independent villagers. In Thehe village there are no appreciable differences in wealth among villages, aside from the difference between the occupational castes and the rest of the villagers. The research team included occupational caste households in its survey of Thehe (50% of households surveyed in Thehe were occupational caste households). Figure 1 shows the breakdown of the households surveyed into each of the wealth categories.

In the following analyses, results are stratified in three ways, to most completely characterize the differences among sub-populations in the area. The first is by wealth, as described above. The second is by ethnicity, broken down into two categories: Hindu and Buddhist. Some differences in wealth, family system, diet, elevation, and beliefs about health are captured in these two categories<sup>5</sup>, and this difference is reflected in some of the variables that were analyzed. Finally, data are stratified by village. This provides a snapshot of conditions in each village, though there were few significant differences among villages on any of the variables measured.

## Study Foci

### Hygiene and Sanitation

In order to understand local people's understanding of the importance of hygiene and sanitation for health, the research team asked a series of questions pertaining to this subject in both the group and the

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<sup>5</sup> Compared with Hindus, Buddhist villagers tend on average to be slightly wealthier, to eat more whole grains and less rice, to be higher in elevation, for girls to marry later, for women to start reproducing later, and to be less superstitious about disease causation (perhaps because of the long tradition of Tibetan medicine, which is similar in many ways to traditional Chinese medicine).



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one-on-one interviews. Responses to these questions were so uniform that it is not necessary to describe them statistically. Instead, conditions are described as reported by informants.

#### Cleanliness

Adults tend to bathe two or three times a month, using water from streams or taps and soap when it is available. More commonly, because few families can afford soap, people use an herb culled from the local forest called *naru*. Babies are bathed once every three or four days and children once a week at most. Most bathing is done in cold water, unless people have time to heat water (e.g., no time during harvest). In Kermi there are natural hot springs where people go to bathe and wash their clothes regularly.

Around the house, people clean up when there is time. Dirty water is usually thrown into the kitchen garden or some other place from the roof, and sweepings from the floor are thrown in the same place. Pots, plates and utensils are usually washed with water or with water and mud or water and husks. Food is almost always served on just-washed plates (people tend to wash up just before the next meal), and even boiled food is therefore often contaminated by unboiled water. When there is leftover food, women cover it if they think of it, but often do not. In general women did not seem to understand the importance of covering leftovers. Few mothers made connections between leftover food storage, flies, and worms, which was not surprising since very few women had a clear idea about how people contract worms. Some women thought worms were contracted from eating meat or green vegetables, some from a general lack of hygiene, and some from eating uncooked foods.

#### Drinking water

No one has to walk far for water, due to the central taps and to plentiful streams in and around the villages. In Thehe, where USCC has been working for some time, and in Syada VDC, where USCC recently started working, many people understood the importance of safe drinking water, but said that in practice they rarely boiled water, for lack of time and/or firewood. In other villages people had not received any education about safe drinking water and were not aware of its benefits.

#### Latrine-use

Most people claimed to wash their hands after urination/defecation, but in the many months that the author spent in Lama villages doing anthropological research, this was rarely observed. No one in this study said that they used latrines, even in Syada, where USCC has constructed one. In general people were receptive to the idea of latrines, though in practice USCC has had difficulty in Thehe with this project. Lama villagers in particular were interested in latrine projects and enthusiastic about getting them started, though at present they lack the materials and know-how necessary to start a project themselves.

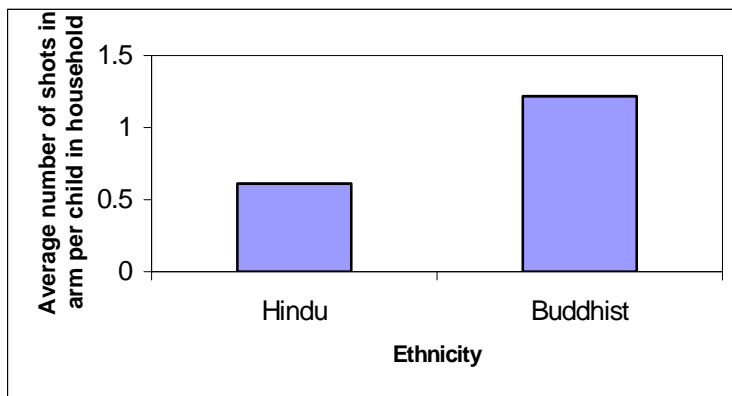
#### Efficacy of Immunization and Vitamin Programs

Information on immunizations was difficult to obtain. The main problem that we faced was that no one had a vaccination card for any child, and people simply had no idea about the vaccinations that their children had received. Mothers did remember children getting shots at different times, and could remember how many times this occurred, but they rarely knew if the shots their children had received were vitamin shots, anti-biotics for illness, or immunizations against specific diseases. Nepal has had National Polio and National Vitamin A programs, as well as efforts to provide all children with DPT (1/2/3) and BCG vaccinations. Very few villagers had ever heard of any of these programs, and were

not aware of the existence of national-level Polio or Vitamin A initiatives. Some villagers could remember particular events, like a child receiving the distinctive red Vitamin A capsule, or a polio shot, but not a single parent could accurately and completely recall the vaccination or vitamin history of any child, nor did they understand that national programs to vaccinate all Nepali children existed. This made an assessment of the efficacy of immunization and vitamin programs very difficult.

In the end, the research team simply counted the number of shots ever received in the arm and the number ever received in the buttocks, and average those among the children living in the household. Figures 2, 3, and 4 present the average number of shots in the arm per child in each household, categorized by ethnicity, socioeconomic status, and village. In this set of graphs, the first important health difference in the sample already emerges: Buddhists and villagers in the Buddhist villages

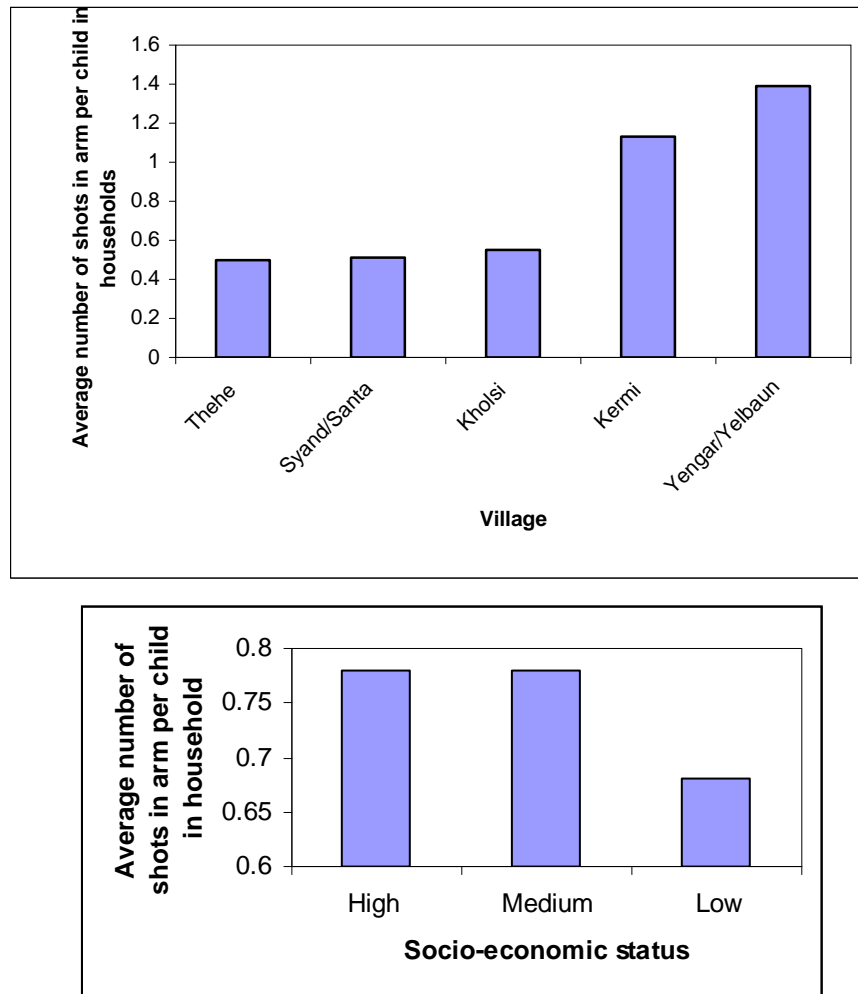
Figure 2. Average number of shots in the arm per child in household by ethnicity



(Values: .52 shots per Hindu child, 1.25 per Buddhist child)

received on average more shots in the arm than did Hindus. This is probably due to the effect that The Nepal Trust clinic in Yengar is having upon the villagers who visit it (who are almost all Buddhists from the nearby villages). No strong socio-economic differences emerged, although the pattern suggests that children in poorer households were less likely to receive shots in the arm. This pattern should however be viewed with caution, as it is not statistically significant. In fact there were no statistically significant differences among the wealth categories on any measure of health except for the survivability ratio (see Section 5 below).

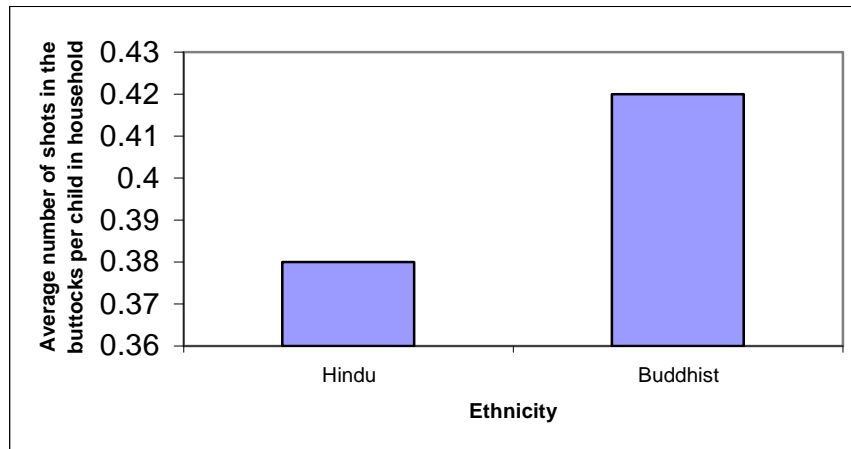
Figures 3 and 4. Average number of shots in the arm per child in household by village and by socio-economic status



(Values: .50 shots per child in Thehe, .51 in Syada/Santa, .55 in Kholasi, 1.13 in Kermi, and 1.39 in Yengar/Yelbaun; .78 in high wealth households, .78 in medium wealth households, and .68 in poor households)

Figures 5, 6 and 7 present the average number of shots in the buttock per child in each household, categorized by ethnicity, socioeconomic status, and village. Very few children had received any shots in the buttocks, even in villages close to private or government clinics, and no statistically significant differences emerged in any of the comparisons.

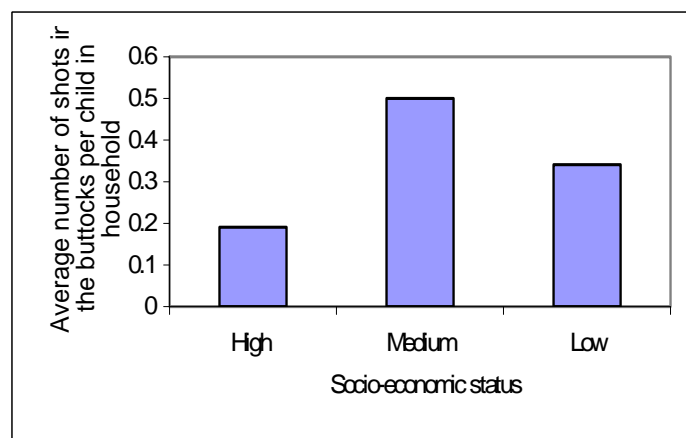
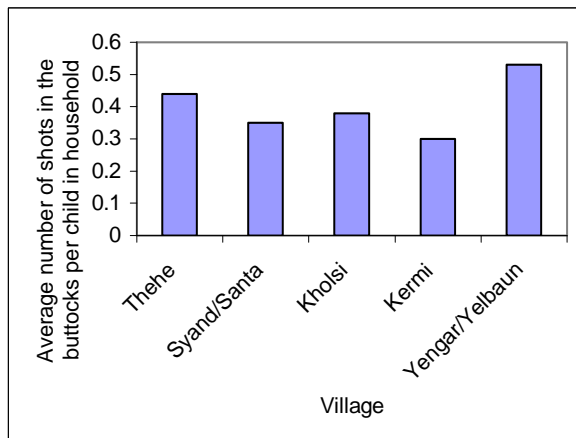
Figure 5. Average number of shots in the buttocks per child in household by ethnicity



(Values: .38 shots per Hindu child, .42 per Buddhist child)

Although every parent was asked whether their child had received a vaccination for measles and whether each child had a BCG scar on his or her shoulder, not a single parent was able to answer these

Figures 6 and 7. Average number of shots in the buttocks per child in household by village and by socio-economic status

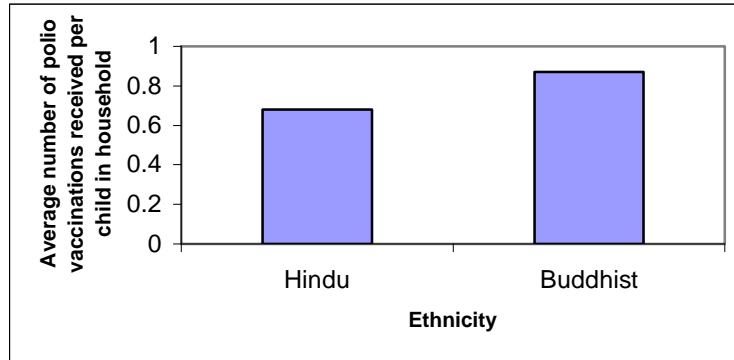


(Values: .44 shots per child in Thehe, .35 in Syada/Santa, .38 in Kholisi, .30 in Kermi, and .53 in Yengar/Yelbaun; .19 in high wealth households, .50 in medium wealth households, and .34 in poor households)

questions definitively. When the research team examined children, it was rarely clear if marks that looked like BCG scars were from the vaccination or some other source (e.g., measles or chicken pox).

The research team measured the number of polio vaccinations received per child in each household as

Figure 8. Average number of polio vaccinations received per child in household by ethnicity

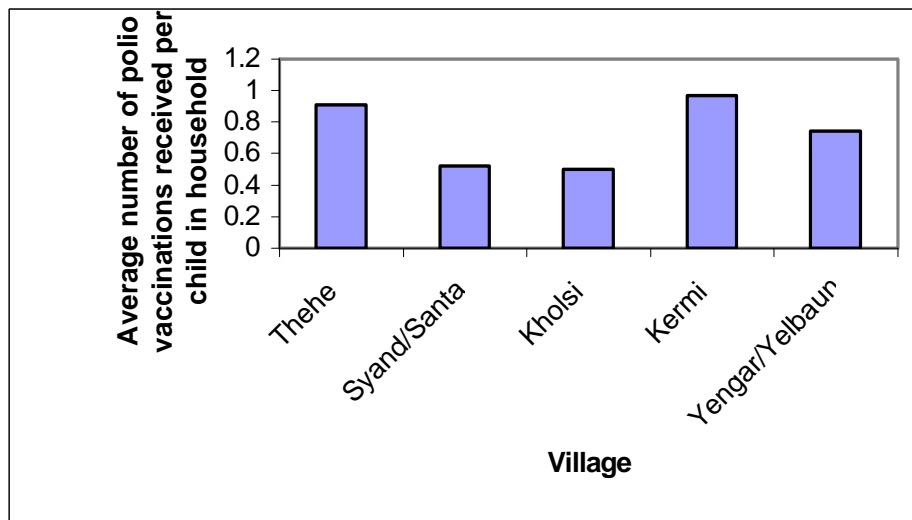


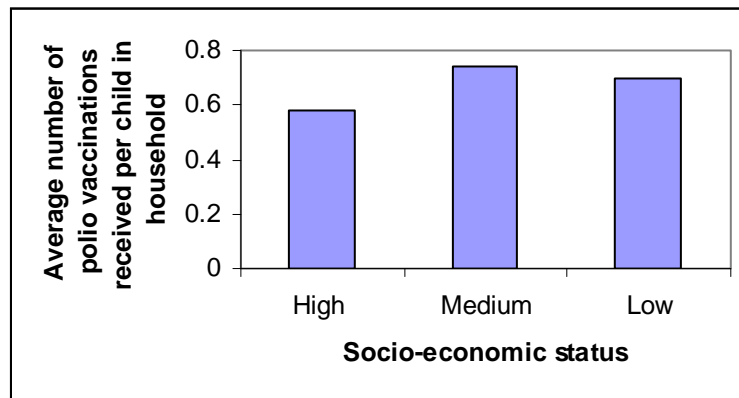
(Values: .63 vaccinations per Hindu child, .87 per Buddhist child)

well, not including the polio vaccinations that occurred during the study. These data are presented in Figures 8, 9, and 10.

Again, Buddhists received more polio vaccinations than Hindus did, but none of the differences in ethnicity, socio-economic status, or village, were significant on polio. This is probably because we did not survey any of the very distant villages which are not contacted by the polio vaccinators, so most children had about the same access.

Figures 9 and 10. Average number of polio vaccinations received per child in household by village and by socio-economic status

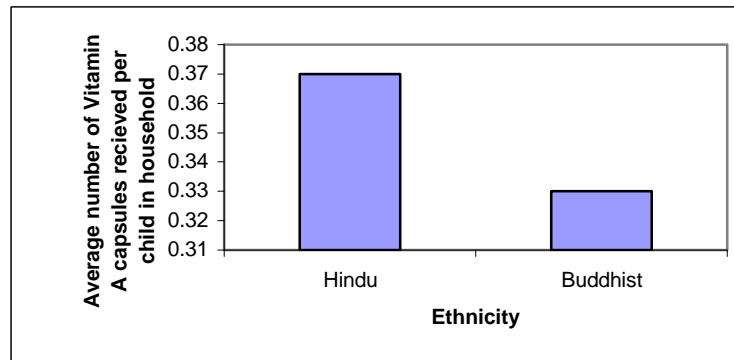




(Values: .91 vaccinations per child in Thehe, .52 in Syada/Santa, .50 in Kholsi, .97 in Kermi, and .74 in Yengar/Yelbaun; .58 in high wealth households, .74 in medium wealth households, and .70 in poor households)

Finally, the efficacy of the National Vitamin A program was examined, using the same methods. Figures 11, 12, and 13 present these data, and like the polio results show no significant variation among the comparisons.

**Figure 11. Average number of Vitamin A capsules received per child in household by ethnicity**

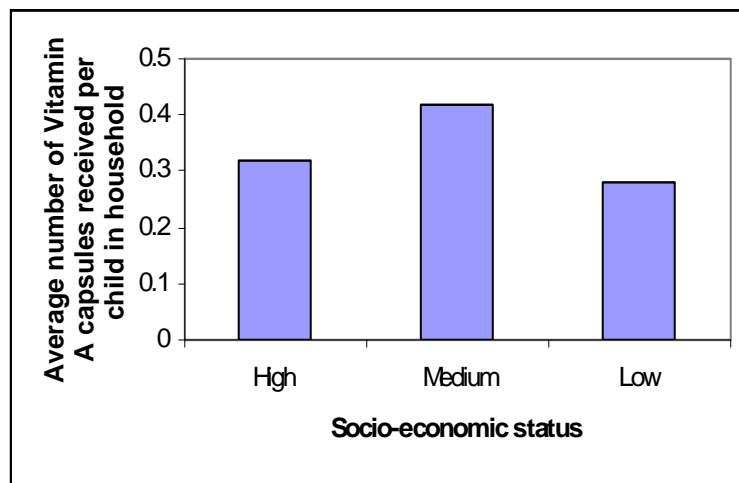
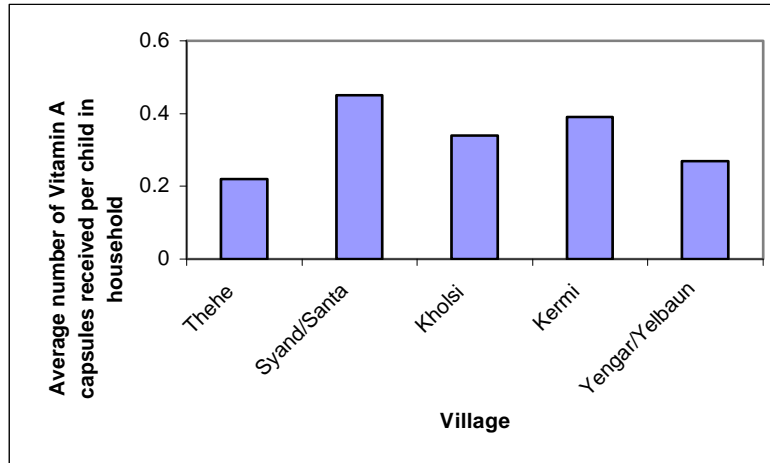


(Values: .37 capsules per Hindu child, .33 per Buddhist child)

While there were few statistically significant differences among the comparisons made here, some important patterns emerge. For instance, it emerges that Hindu villagers may receive slightly fewer shots in the arm than Buddhists. Due to the fact that we were unable to distinguish between the types of shots that parents recounted to us, it is difficult to draw any conclusions about vaccinations received from these results.

Of all the comparisons presented here, the only statistically significant differences are between Yengar/Yelbaun/Kermi and the rest of the villages (also captured in the Hindu-Buddhist comparison). This difference pertains solely to number of shots in the arm, and implies that The Nepal Trust clinic in Yengar may be having a positive effect on this aspect of health for the villagers in nearby villages.

**Figures 12 and 13. Average number of Vitamin A capsules received per child in household by village and by socio-economic status**



(Values: .22 capsules per child in Thehe, .45 in Syada/Santa, .34 in Kholsi, .39 in Kermi, and .27 in Yengar/Yelbaun; .32 in high wealth households, .42 in medium wealth households, and .28 in poor households)

However, it is important to look beyond these comparisons and see the big picture, which is this: with the exception of shots in the arm received by Buddhist children, not a single one of the means presented in this section is over 1.0. This means that on average, in every village, Hindu or Buddhist, poor or not, children receive less than one shot in the arm, less than one shot in the buttocks, less than one oral polio vaccination, and less than one Vitamin A capsule. Bearing in mind that the DPT series alone includes 3 separate shots; this record is very poor.

Disease Prevalence

In this section, findings are presented in two formats. First, Table 1 presents the data collected in the group interviews, on the incidence of recognizable conditions by village. The research team was not able to collect these data for Thehe. Second, Figures 14-25 present the incidence of diarrhea and cough among children and adults by household, stratified as above (by ethnicity, village, and socio-economic status).

Table 1. Incidence of disease by village, as reported by VDC and Ward Chairmen

Condition:	Syada/Santa	Kholsi	Kermi	Yelbaun	Yengar
Polio-like symptoms	10	5	1	0	1
TB-like symptoms	40	12	0	1	5
Goiter	Many (20+)	Many (20+)	5	NA	6
Lameness (from accident)	5	25	0	2	2
Deaf <sup>1</sup>	28	45	10	1	1
Partial deafness <sup>2</sup>	65	30	Many	3	8
Blind	25	5	3	1	1
Night blind	115	10	4	NA	NA
Infertile (female only)	NA	NA	3	1	1

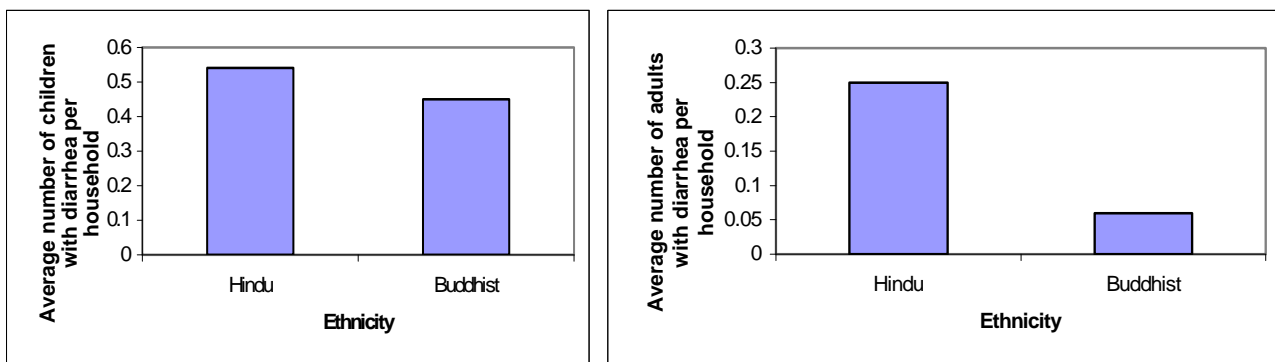
Note: these categories of illness were derived by villagers' identification of local health problems

<sup>1</sup> Most completely deaf people were born deaf, though in Kermi only 4 of 10 were born deaf

<sup>2</sup> Most partially-deaf people developed this condition after a short illness

Results from questions about the number of children and adults per household reporting that they are suffering from diarrhea are presented in Figures 14-19. Every person with whom the research team discussed the incidence of diarrhea was careful to point out that diarrhea was not a problem during the dry season (the time of the study), but that it was a severe problem during the wet season.

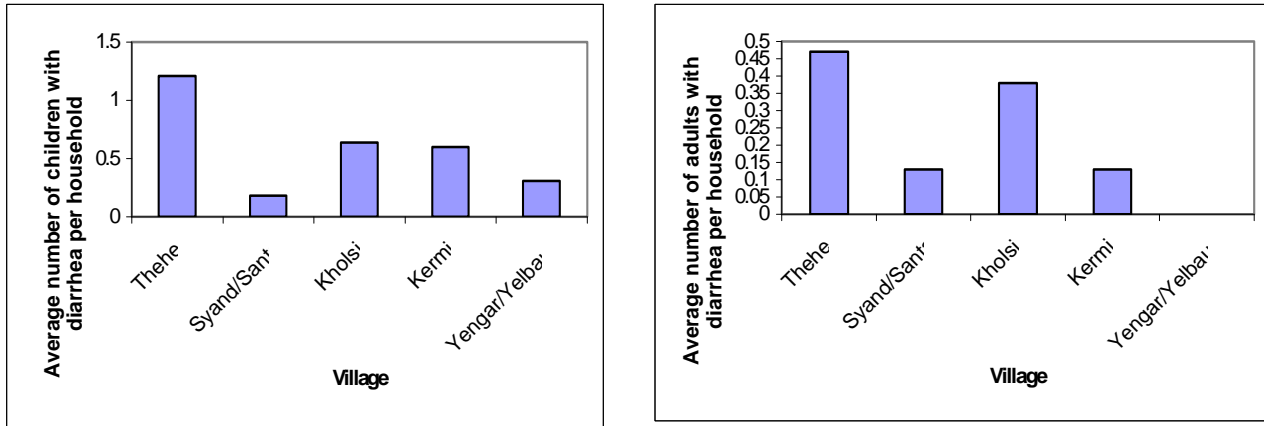
**Figures 14 and 15. Average number of children and adults with diarrhea per household by ethnicity**



(Values for children: .54 in Hindu households, .45 in Buddhist households; Values for adults: .25 in Hindu households, .06 in Buddhist households)

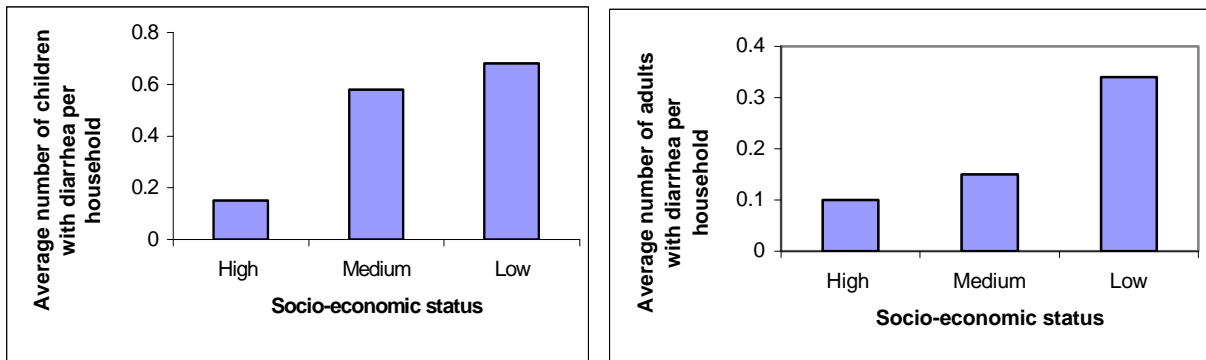


**Figures 16 and 17. Average number of children and adults with diarrhea per household by village**



(Values for children: 1.21 in Thehe, .18 in Syada/Santa, .64 in Kholsi, .60 in Kermi, .31 in Yengar/Yelbaun; Values for adults: .47 in Thehe, .13 in Syada/Santa, .38 in Kholsi, .13 in Kermi, 0.0 in Yengar/Yelbaun)

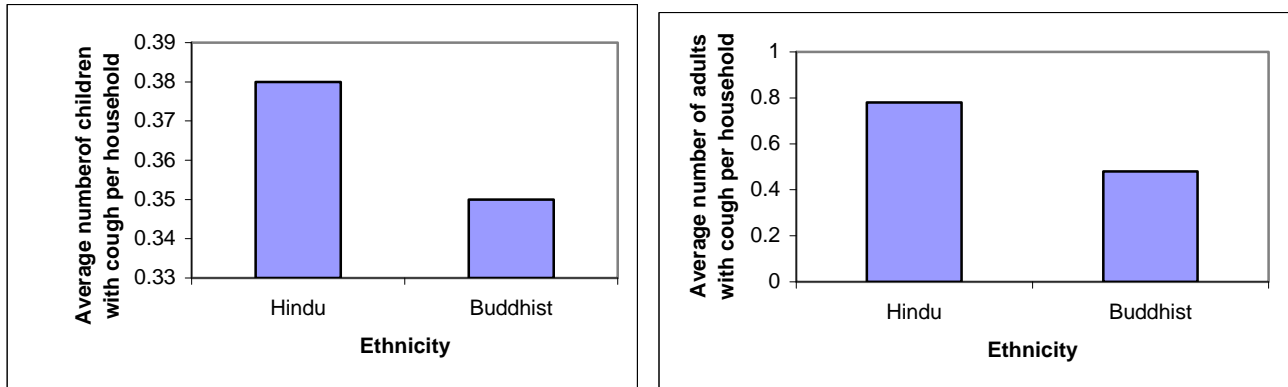
**Figures 18 and 19. Average number of children and adults with diarrhea per household by socio-economic status**



(Values for children: .15 in high wealth households, .58 in medium wealth households, .68 in poor households; Values for adults: .10 in high wealth households, .15 in medium wealth households, .34 in poor households)

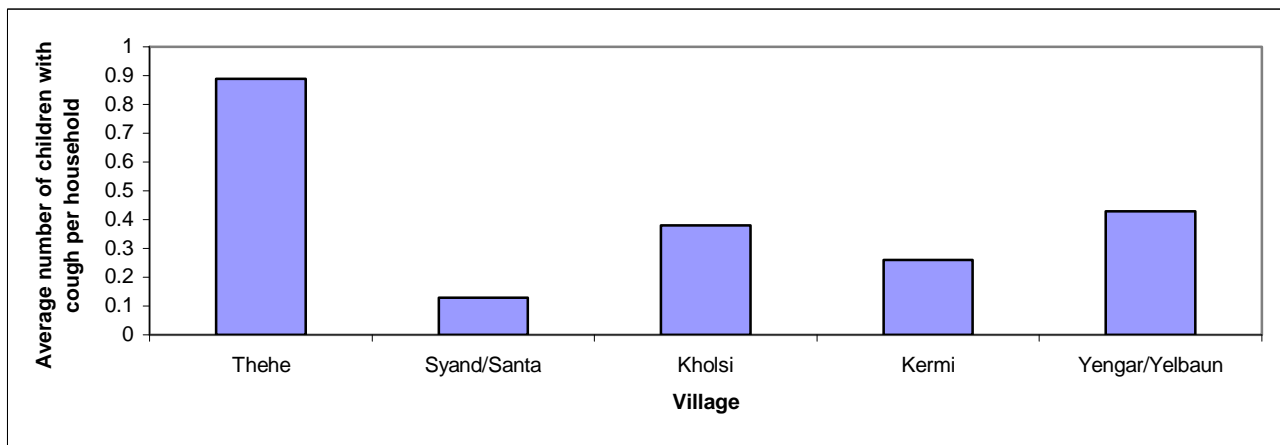
The diarrhea data presented in the figures above show that Buddhist children and adults report less diarrhea in the dry season than Hindus do (this difference is statistically significant for Hindu vs. Buddhist adults). No socio-economic differences emerge, but the pattern in the village data shows that Thehe children and adults reported much more diarrhea than in any other village, and Syada/Santa and Yengar the least.

**Figures 20 and 21. Average number of children and adults with cough per household by ethnicity**



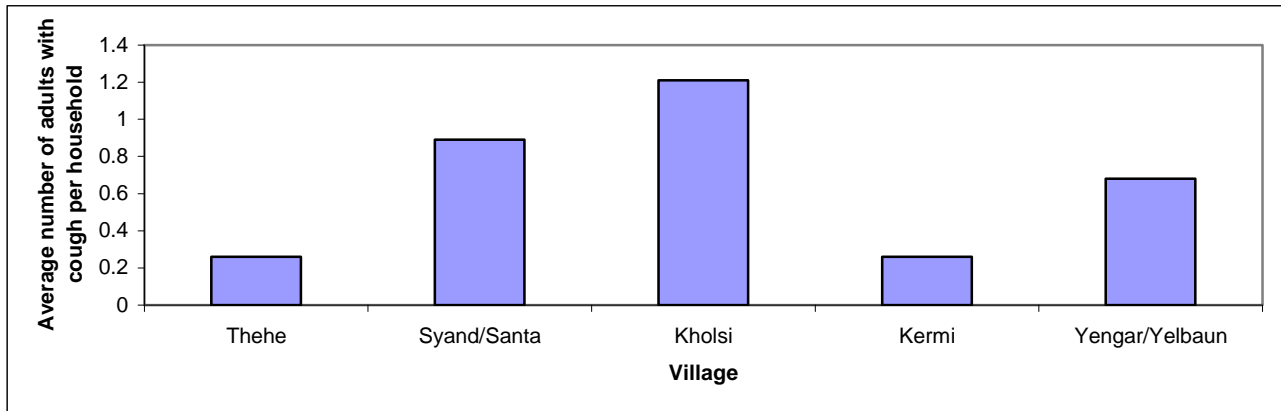
(Values for children: .38 in Hindu households, .35 in Buddhist households; Values for adults: .78 in Hindu households, .48 in Buddhist households)

**Figure 22. Average number of children with cough per household by village**



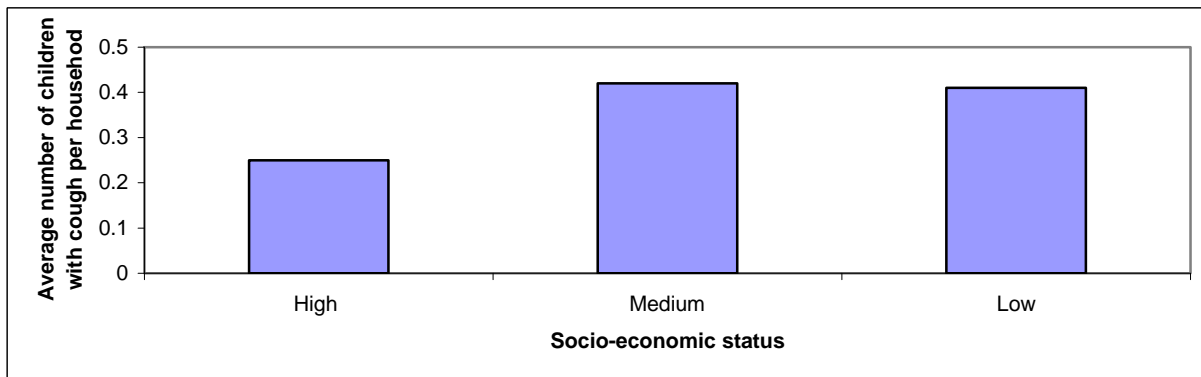
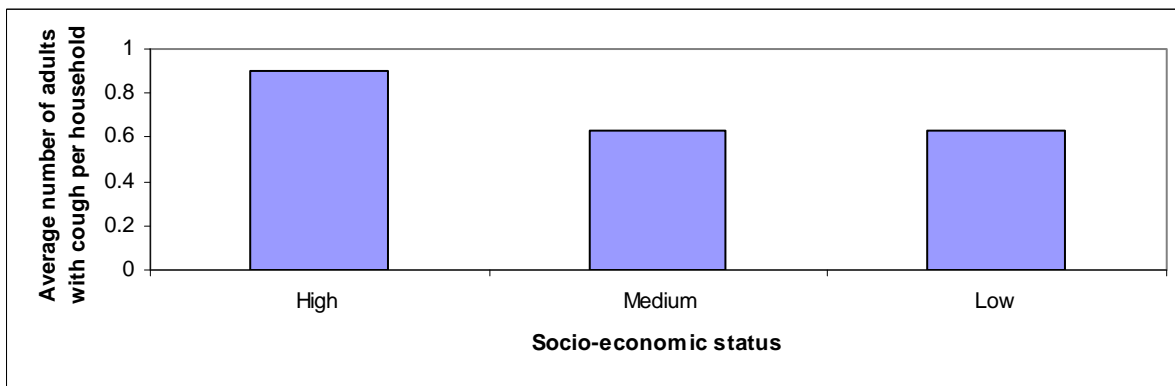
(Values for children: .89 in Thehe, .13 in Syada/Santa, .38 in Kholsi, .26 in Kermi, .43 in Yengar/Yelbaun)

**Figure 23. Average number of adults with cough per household by village**



(Values for adults: .26 in Thehe, .89 in Syada/Santa, 1.21 in Kholsi, .26 in Kermi, .68 in Yengar/Yelbaun)

**Figures 24 and 25. Average number of children and adults with cough per household by socio-economic status**



(Values for children: .25 in high wealth households, .42 in medium wealth households, .41 in poor households; Values for adults: .90 in high wealth households, .63 in medium wealth households, .62 in poor households)

The cough data presented in Figures 19-25 show patterns that are similar to the ones that emerge in the diarrhea data. Buddhists report less cough than Hindus do, and interestingly, socio-economic status and cough are clearly correlated (the correlation is statistically significant for adults). This may be due to the fact that though smoky, Lama houses may be slightly better ventilated than Hindu ones. By the

same token, houses belonging to wealthier people tend to be larger than those belonging to poor people, and this may account for the difference seen across socio-economic status (though this pattern is not statistically significant, it is strong). No patterns emerge in the village level data; aside from the one already captured in the ethnicity data (less cough is reported by both children and adults in Kermi and Yengar/Yelbaun than in other villages).

In discussions with villagers, people reported that though diarrhea was not a problem during the season when this study was conducted, it is a major cause of death among infants and is a serious problem for people of all ages during the rainy season. People were less concerned about their coughs and were not well informed about tuberculosis, but many people reported that they did seek treatment for their coughs from clinics, or treated themselves with herbs when they got especially bad. Though relatively few people reported diarrhea or treatment for diarrhea during our survey, the excrement on the trails around all of the villages clearly showed us that diarrhea was in fact currently a problem.

Additionally, though relatively few people reported cough or treatment for cough during our study, in fact one awakes every morning to the sounds of terrible coughing fits by adults, and many of the children with whom the research team interacted exhibited deep, phlegmy coughs.

In general, people think of themselves as being quite sick, and almost completely powerless to improve their health status. They complained vociferously about the lack of medical treatment available to them and the effect of this lack upon the quality of their lives and the chances of survival for their children. People reported that every family had serious sickness, and that health posts were too far away and too expensive for almost anyone to afford. One man in Kermi explained that traveling to clinics was so difficult that simple, minor problems often progressed unnecessarily to serious, life-threatening conditions because people simply could not get any treatment locally and were unwilling until absolutely desperate to walk for almost a day to get treatment. This left villagers in a bind, he explained, because by the time they are desperate, they are usually too ill to even travel the distance required to find a doctor.

Other than lack of access to medical care, the main problems that people complained of were diarrhea, cough, fever, headaches, dental and eye problems, deafness, rheumatism, goiter, generalized edema, worms, complications of childbirth, contraceptives that leave them feeling weak, stomach pain, acid reflux, and malnutrition (malnutrition was a complaint more often heard in Hindu villages, especially in Thehe).

### **Attitudes about Disease Treatment**

The research team discussed disease treatment at some length in group interviews and in the one-on-one interviews, to get an accurate understanding of the perceptions of local people of the pros and cons of different kinds of treatment. Three options are open to villagers. One is western medicine, which can be obtained at private or government health posts or sub health posts. Another is to seek care from traditional healers or religious figures (*dhamis* in the Hindu communities or *amchis* in Buddhist communities). The third is self-care using one of the local home-remedies, usually herbs gathered from the fields and forests around the villages. There are no *amchis* in the Buddhist communities surveyed in this study, though there is an *amchi* just north of Limi, over the Tibetan border. One 62 year old man from Kermi traveled three days over two 17,000+ foot passes in order to trade some wool and visit the *amchi* in that community for medicine for his wife, who was suffering from a cough and

fever (he said the medicine helped). People in the Buddhist communities also occasionally ask the lamas to perform healing prayer-ceremonies. The frequency with which people reported using these forms of treatment to treat the diarrhea and cough documented in the previous section is reported in Table 2.

Hindu villagers reported that certain types of illness are more suited to treatment by a *dhami* than by a Western doctor. In particular, illnesses without physically manifested symptoms (stomach pain, rashes, cough, discharge), which instead have “invisible” symptoms (headaches, fainting, dizziness, seizures) are to be treated by a *dhami* or a lama from the monastery. This is mainly because such illnesses are thought to be caused by evil spirits, and can be treated only by a spirit healer. One man in Kermi said that he thought that his wife’s fainting spells, profound headache, and general weakness were likely to be best treated by prayer and rituals performed by the lamas from the monastery. However, he also said that he planned to take her to Kathmandu on his winter trip there, in order for her to receive treatment at the hospital.

**Table 2. Use of different types of healing methods by Hindus and Buddhists**

<b>Treatment</b>	<b>Condition</b>	<b>Hindus (n=74)</b>	<b>Buddhists (n=31)</b>
<b>Tibetan Medicines:</b>			
	Diarrhea (child)	0	0
	Diarrhea (adult)	0	0
	Cough (child)	0	1
	Cough (adult)	0	1
<b>Western Medicines:</b>			
	Diarrhea (child)	11	3
	Diarrhea (adult)	11	2
	Cough (child)	3	2
	Cough (adult)	10	4
<b>Herbs/Home remedies:</b>			
	Diarrhea (child)	4	6
	Diarrhea (adult)	1	2
	Cough (child)	1	0
	Cough (adult)	0	0
<b>Dhami or Lama:</b>			
	Diarrhea (child)	1	0
	Diarrhea (adult)	0	1
	Cough (child)	0	0
	Cough (adult)	3	0

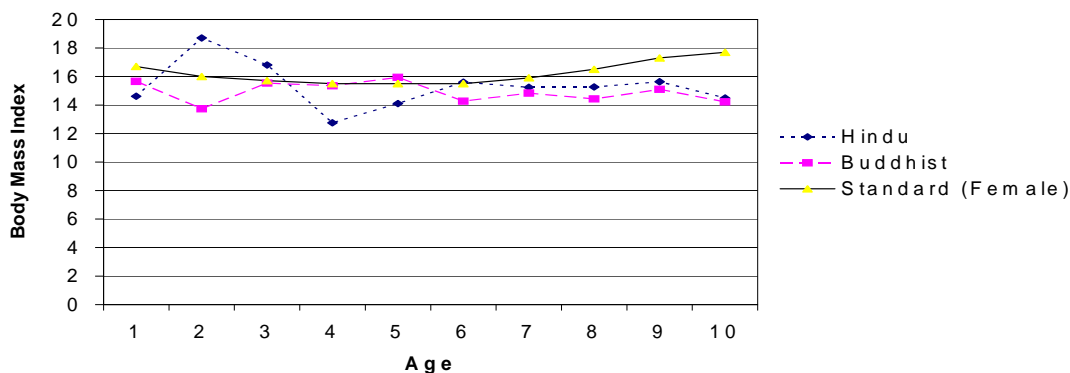
This man’s attitude is in fact very similar to most people’s attitudes about health-seeking behavior. Though some illnesses are reputed to be more treatable using traditional methods, people also told us that they would actually use any method or any combination of methods that they had access to and could afford. Most people used a combination of treatment methods to treat the conditions described to us. These included herbs or spiced hot water, prayer or ritual, western medicine if available, and burning treatments. Burning treatments are commonly prescribed to treat internal pain, and the belief is that a burning hot coal should be placed on the skin directly over the painful spot. Many of the adults whose chests we saw were covered with burn marks from this treatment, in both Hindu and Buddhist communities.

People are often unwilling to travel to nearby villages for health care, even to villages within 5 hours walk. This is because they cannot predict whether the clinic or post will be open when they arrive, and most people simply cannot afford a whole day away from their fields, especially with the risk that they may not even be able to see a doctor, nurse, or other health worker. Additionally, there is a lot of mistrust in both Hindu and Buddhist communities about the Western medicines available at the local clinics and health posts. People complained that most medicines they received seem to have expired or lost their power. They also feel that they rarely receive the medicines that they actually need, especially since medicines are sometimes dispensed by the peon. Even when they receive medicines from trained health workers, they do not trust that they receive the proper ones. They blame the pharmacists in Simikot explicitly, for being driven more by greed than by the desire to dispense the proper medicines. In one village, in fact, the villagers hold improperly prescribed medicines to blame for the deaths of two important adult community members.

### Anthropometry

The research team took key anthropometric measurements (See Module 8 from the Survey in Appendix 1) from 116 children (< 10 year of age) in order to get a picture of their nutritional status. I have lumped these data in one group rather than separate them by sex in order to maximize the sample size. Figure 26 compares Hindu and Buddhist children separately with the standard for female body mass indices<sup>6</sup> across the same age groups (body mass index standard female measurements taken from Frisancho 1993:43; body mass index = weight (kg)/ height (m)<sup>2</sup>). The standard female measurement is used here despite the fact that most of the children that we measured were boys. This means that the difference between the standard and the Hindu and Buddhist lines in the figure below is quite conservative (since boys have higher body mass indices than girls do).

**Figure 26. Body Mass Index for ages 1-10, Hindu, Buddhist, and Standard (Female)**



The figure shows that with the exception of ages 2 and 3 among Hindus (possibly a sampling bias, given the small size of the sample), the mean body mass index for both Hindu and Buddhist children in this sample is consistently lower (sometimes dramatically so) than the standard female measure, and by age 6 for Buddhists and 8 for Hindus drops consistently and increasingly below the standard.

<sup>6</sup> Standards are taken from children in well-fed populations, see Frisancho (1993) for details

Using the Medical College of Wisconsin's body mass index calculation program on the web (<http://healthlink.mcw.edu>), the body mass index and ideal body weight was also calculated using the mean values from the Hindu and Buddhist data. The mean values for every age group tested were rated by this program as "underweight". Though more complete analyses of diet and more precise anthropometric measurements should be taken to assess wasting, stunting and malnutrition in this population, the data presented here show that on average the children in this sample (regardless of ethnicity) are consistently underweight for their heights.

## **Conclusions**

Health care in Humla is severely lacking, and presents a very serious problem for local people. In recent years, Humla has obtained the reputation in Nepal of being a 'darling of development'. In fact, very little has changed in terms of health care in Humla since this study was conducted. The private clinics opened by The Nepal Trust in a handful of villages provide very good services, but only at the primary health care level, and not to the entire population. Though Humla is remote and government services of any kind are difficult to deliver, Humlis need to have access to better, more consistent medical care. In particular, due to the expense of leaving the district in times of sickness (this requires an expensive flight on an unreliable airline service), Humlis need to have a strong referral system to a local health center where serious complications can be addressed. The District health post in Simikot should be the focus of this attention, and needs to receive more careful attention and the allocation of more resources from the Ministry of Health. Additionally, staff at sub-healthposts need to be upskilled to a level that allows them to recognize when a referral to the health post is required. Until this occurs, Humlis will continue to experience the many serious--though treatable--illnesses that they presently, and unnecessarily, suffer.

## **Acknowledgements**

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## References

- Frisancho, A. Roberto. 1993. *Anthropometric Standards for the Assessment of Growth and Nutritional Status*, Ann Arbor: University of Michigan.
- Haddix, Kimber. 1998. *Marital Strategies in a Polyandrous Tibetan Community of Northwest Nepal*, Ph.D. Dissertation, University of California, Davis, Department of Anthropology.
- Hotchkiss, David. 2001. Expansion of Rural Health Care and the Use of Maternal Services in Nepal, *Health and Place* 7:1, 39-45.
- Levine, Nancy. 1987. Caste, State, and Ethnic Boundaries in Nepal. *Journal of Asian Studies*, 46: 71-88.
- Purdey, Alice. 1998. *Humla 1998; An Ethnographic Profile*, The Nepal Trust, Maharajganj, Kathmandu, Nepal.
- SAS Institute. 1997. *JMP*, Duxbury, MA: Duxbury Press.
- UCCC, Nepal. 1991. *Self-Help Initiative Promotion Program, Thehe and Bargaun Village Development Committees, Humla District*, USCCN, Baluwatar, Kathmandu.
- \_\_\_\_\_ 1999. *Baseline Study of Syada and Chhipra VDCs in Humla District*, USCCN, Baluwatar, Kathmandu.





Does this household own its own land?

If yes, how much land (record in number of days necessary to harvest fields)?

15. How many animals belong to the household?

<b>Animal:</b>	<b>Number:</b>
Horses	
Cows	
Goats/sheep	
Chickens	
Yaks/naks	
Dzopa/dzoma	

Distance to nearest health post or medicine shop:

Module 2. Hygiene and water sources

How many times per week do you bathe?

- daily
- every other day
- once per week
- once in fifteen days
- once per month
- don't bathe

How many times per week do your children bathe (check one per child)?

<b>Age of child</b>	<b>Number of times:</b>
0-1	
1-5	
6-10	
10+	

What water do you use to bathe?

- well
- tap
- river
- pipe
- other

What do you use to cleanse yourself when you bathe?

- soap
- pina
- mud
- water
- other

How do you clean utensils in the kitchen?

- ash
- mud
- husks
- water
- other
- don't clean

Where do you get your drinking water?

- well
- tap
- river
- other

How do you make your drinking water safe?

- filter
- boil
- stream
- other
- nothing

Have you ever had any instruction about safe drinking water?

- radio
- newspaper
- TV
- health worker
- teacher
- other

How far is your source of water?

- less than 15 minutes
- more than 15 minutes

Do people living in your house use a latrine?

If yes, what kind?

- toilet
- pit
- no latrine

28. Do you wash your hands after using the latrine?

If yes, how?

- soap
- ash
- mud
- water
- other

Where do you dispose of dirt from the house?

- in a hole near house
- isolated place
- kitchen garden
- wherever
- other

Where do you dispose of waste water?

- in a hole near house
- isolated place
- kitchen garden
- wherever

How do you protect food?

- open
- covered
- other

How do you store leftover food?

- eat it
- give to domestic animals
- throw away
- other

Do you know why your children get worms?

If yes, how?

- lack of personal hygiene
- not wearing shoes
- food not well-cooked or fresh
- other

To avoid worms what should be done?  
 wear shoes  
 wash hands before meal  
 wash dirt off hands after work  
 control where children defecate  
 all of the above  
 other

Module 3. Immunizations/Vitamin Programs

36. For each child in the household, record the following information:

<b>Information</b>	<b>C 1</b>	<b>C 2</b>	<b>C 3</b>	<b>C 4</b>	<b>C 5</b>	<b>C 6</b>	<b>C 7</b>	<b>C 8</b>
Vaccination card exists Y/N								
BCG								
DPT 1								
DPT 2								
DPT 3								
OPV1								
OPV2								
OPV3								
Measles								
Has the child ever received vaccinations not listed in the card?								
Has the child ever been given a BCG vaccination against TB—that is, an injection in the shoulder that caused a scar?								
In the thigh or buttocks to prevent tetanus, whooping cough, diphtheria?								
How many times?								
Are aware of the National Polio program?								
Has the child ever been given polio drops?								
How many times?								
Has the child ever been given vaccination injections in the arm to prevent measles?								
Has your child ever received vitamin capsules or injections?								
Are you aware of the National Vitamin A program?								

Information	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8
Did the child receive the vitamin A during that program?								
Has the child ever received a vitamin A capsule? (show capsule)								
If yes, how many months ago did the child receive the capsule?								

Module 4. Disease

Have you had diarrhea in the last two weeks?

What did you do to treat it?

For each child in the household, record the following information:

Information	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8
Has the child had diarrhea in the last 2 weeks?								
Was there blood in the child's stool during his/her diarrhea?								
During the diarrhea, what did you offer him/her to drink?								
During the diarrhea, did he/she drink none, less, more, or the same as usual?								
During the diarrhea did he/she eat none, less, more or the same as usual?								

Have you suffered from cough during the last two weeks?

Is yes, what signs/symptoms did you notice (circle any that apply)?

- blocked/running nose
- fever
- fast breathing
- difficult breathing
- painful breathing
- trouble eating/drinking
- don't know
- other (specify)

Where did you go for treatment for this illness?

For each child in the household, record the following information:

<b>Information</b>	<b>C 1</b>	<b>C 2</b>	<b>C 3</b>	<b>C 4</b>	<b>C 5</b>	<b>C 6</b>	<b>C 7</b>	<b>C 8</b>
Has the child suffered from cough during the last two weeks?								
If yes, what signs/symptoms did he/she have (write number of any symptoms that apply)? blocked/running nose fever fast breathing difficult breathing painful breathing trouble eating/drinking don't know other (specify)								
Did you give the child any medicine or do anything to cure it from this cough?								
Where did you take the child for treatment when he/she was sick with this cough?								

Do you or does anyone in your household have leprosy?  
How many people in the village have leprosy?  
How do people get leprosy?

How many of the people in this household currently suffer from:

<b>Problem</b>	<b>Number</b>
Deafness	
Blindness	
Lameness	
Infertility	
Coughing/cold	
Diarrhea	
Abdominal pain	
Problems in childbirth	
TB	
Infertility	
Family planning problems	
Muscle pain	
Other (list):	

In the past year, has anyone died in this household?  
What was the cause of their death?

Module 5. Attitudes about Disease and Disease Treatment

Check the type of treatment that is appropriate for curing or solving the following problems:

<b>Problem</b>	<b>Western medicine</b>	<b>Lama</b>	<b>Amchi/Dami</b>	<b>Herbs/home cure (jhariputi)</b>
Coughing/cold				
Diarrhea				
Abdominal pain				
Problems in childbirth				
TB				
Infertility				
Family planning				
Muscle pain				

Name (use local dialect name) and description of the most common diseases in this community:

Module 6. Childbirth

Where do you go to deliver your babies?

- own home with help of family
- own home with help of sudeni
- hospital/clinic
- alone
- other

Is any maternity service available to you?

If yes, where?

- health post
- hospital
- other

Who has made the maternity service available?

- sudeni
- neighborhood
- other

Do the maternity helpers have training?

If they are not trained, do they need it?

Have you ever had a tetanus vaccination?

If no, why not?

- no organization doing vaccinations
- no vaccine available
- didn't know about vaccine
- other

If you give birth in your home, where?

Have you ever had any problems during birth? If so, describe problem and treatment:

Module 7. Family Planning

How many children do you have?

Have any died? If so, how, and at what age?

How many children is ideal?

Have you ever used FP?

Which method?

permanent

temporary

    condom

    pill

    Depo-provera

    Other

If you don't use FP, why not?

If you don't use FP, would you like to?

Where can you get FP?

How long did you breastfeed your last child?

If you did not breastfeed, why?

    mother sick

    child sick

    milk never came in

    other

How old was your last child when you started giving extra food?

#### Module 8. Anthropometry

72. For each child in the household, record the following information:

Measurement	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8
Age of child								
BCG Scar?								
Mid-upper arm circumference (cm)								
Weight								
Height/length (cm)								
Measurement made: Sitting (S) Lying down (L)								

#### References for Baseline Survey:

New Era/UNICEF. 1999. 'Baseline Health Survey', New Era, Kathmandu, Nepal.

Unitarian Services Committee Canada, Nepal. 1991. 'Baseline Community Survey', USCCN, Baluwatar, Kathmandu, Nepal