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Household health expenditures in Nepal: implications for health care financing reform

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His Majesty's Government of Nepal has embarked on an ambitious social welfare programme of increasing the accessibility of primary education and health care services in rural communities. The implications on the financing of health care services are substantial, as the number of health posts has increased twelve-fold from 1992 to 1996, from 200 to 2597. To strengthen health care financing, government policy-makers are considering a number of financing strategies that are likely to have a substantial impact on household health care expenditures. However, more needs to be known about the role of households in the current structure of the health economy before the government designs and implements policies that affect household welfare.

This paper uses the Nepal Living Standards Survey, a rich, nationally-representative sample of households from 1996, to investigate the level and distribution of household out-of-pocket health expenditures. Utilization and expenditures for different types of providers are presented by urban/rural status and by socioeconomic status. In addition, the sources of health sector funds are analyzed by contrasting household out-of-pocket expenditures with expenditures by the government and donors. The results indicate that households spend about 5.5% of total household expenditures on health care and that households account for 74% of the total level of funds used to finance the health economy. In addition, rural households are found to spend more on health care than urban households, after controlling for income status. Distributing health care expenditures by type of care utilized indicates that the wealthy, as well as the poor, rely heavily on services provided by the public sector. The results of this analysis are used to discuss the feasibility of implementing alternative health care financing policies.

Introduction

In many developing countries, governments are facing increasing pressure to improve the efficiency and financial viability of health service delivery systems, particularly in light of renewed commitments to improve living conditions for the poor (World Bank 1993). The case of Nepal provides an excellent example. Nepal is one of the poorest countries in the world, with a per capita GDP of US$200 and a life expectancy at birth of 54 years in 1994 (World Bank 1996). With the passage of the Eighth Economic Plan, the policy of His Majesty's Government (HMG/Nepal) has been to invest resources derived from tax revenues and donor assistance to increase the availability of primary education and health care in rural communities. The implications on the financing of health care delivery are substantial, as the government has begun to ensure that residents of each rural community have access to health care services from a health post. This has translated into a period of extensive construction of health care facilities in Nepal. Between 1992 and 1996, the number of subhealth posts increased twelve-fold, from 200 to 2597 (HMG/Nepal 1996).

These commitments to improve health outcomes among the rural poor come at a time in which improved yet unstable economic performance and

high rates of population growth threaten the government's ability to finance and further expand the delivery of health services. Among the macroeconomic factors that are cause for concern are a relatively low tax base, substantial budget deficits, a foreign exchange rate that has depreciated in recent years, and a lower level of grant assistance from international donors, which has become an increasingly unpredictable source of funds (HMG/Nepal 1996). With the assistance of international donors, government officials are considering a number of reforms that are intended to increase the financial viability and efficiency of the public health care system. The strategies include an increased role of user fees, community health insurance programmes, and incentives to increase the role of the private sector.

However, before the government of Nepal designs and implements policies that affect the cost of health care for private households, more needs to be known about the current structure and financing of the health economy. How much are households currently spending on health care? What types of services are being utilized? Do the health care utilization and expenditure patterns of poor households differ from those of better-off households? What percentage of household out-of-pocket funds are spent on private providers, either traditional or modern? Knowing the answers to these questions is critical for policymakers who design social welfare policies. If, for example, households lack the ability and the willingness to spend more on health care, the government will probably need to provide only very basic health care at an extremely low price. However, if individuals are found to have the ability and willingness to pay for good quality health care, then the government's options are expanded. They can offer a wider variety of health services and still recover a substantial portion of the costs.

Unfortunately, only a few studies have investigated the level and distribution of household health expenditures in developing countries. Most household-level studies of illness-related out-of-pocket expenditures are based on responses from rural areas (Parker 1986; Berman et al. 1987; Sauerborn et al. 1995; Sauerborn et al. 1996). However, the spending patterns of rural areas are likely to be quite different to those found in urban areas. In addition, most nationally-representative financial studies of health care expenditures focus only on the public sector, despite the fact that policy decisions based only on public expenditure data can have severe long-term consequences. Because as much as 40–80 % of total health expenditures may be excluded from such an analysis in many developing countries, the government's ability to affect health practices and expenditure patterns will be severely hampered if it makes policy decisions on this basis (Newbrander et al. 1994).

In recent years, an increasing number of studies have applied national health accounts (NHA) analysis, which estimates the sources and uses of funds in the health sector (see Berman 1997 for a review of NHA studies). The few studies that have conducted this more complete assessment of health care expenditures suggest that, even in countries where health care services are either free or nominally priced, the role of households is far larger than previously thought (Berman 1997). For example, the percentage of total health funds that come from households is 74 % in Burkina Faso (Sauerborn et al. 1995) and 55 % in Egypt (Berman 1997).

The purpose of this paper is to investigate the role of households in Nepal's health economy. In the first section, we discuss the data we have available to analyze household health care expenditures. Second, we evaluate the role households play in Nepal's health economy by comparing expenditures from all sources of funding: households, the government, donors, and private companies. Third, we investigate the level and distribution of household health care expenditure by geography, income status, and source of care. In addition, we investigate the prevalence and severity of illness and the type of practitioner as determinants of health care usage. We conclude the paper with a discussion of the implications of our results on future efforts to design and implement health care reform in Nepal.

Data and methodology

The data used in this analysis come from the Nepal Living Standards Survey (NLSS), which was administered by Nepal's Central Bureau of Statistics (CBS) with assistance from the World Bank. This nationally-representative survey collected information from 3338 households (18 855 individuals) in 275 communities from June 1995 to May 1996. The sample was divided into four strata based on the geographic and ecological regions of the country: (i) the mountains, (ii) the urban hills, (iii) the rural hills, and (iv) the Terai.[1] A two-stage stratified sampling procedure was used to select the sample. In the first stage, communities were randomly selected with

a probability of being included directly proportional to their population. In the second stage, a fixed number of households was randomly selected from each chosen community.

The household survey included questions pertaining to a wide array of economic, demographic, and health-related behaviours of each member of the household, not just the head of the household. The topics covered by the NLSS include demographic characteristics, access to facilities, housing, migration, food expenses and agricultural production, non-food expenditures, education, health, anthropometry, marriage and maternal history, wage employment, income, and nutrition.

The health section of the survey included questions on whether each household member was perceived to have suffered from a chronic disease or from an illness or injury in the past month, whether the individuals used health care services, the type of place and practitioner consulted, and the consultation and travel costs for the last two consultations. Information was also collected on immunizations and child births. These data come from the most comprehensive and complete household-level survey ever administered in Nepal. The health component of the survey captures information on the wide range of health care choices available in Nepal, from traditional healers in the mountain areas to modern hospitals in the capital city, Kathmandu.

Role of households in health care financing

As a first step in our evaluation of the role of households in the financing of health care services in Nepal, we carried out a careful accounting of expenditures incurred by households, the government, donors, and private companies. This analysis is described in Hotchkiss et al. (1997).[2] Figure 1 provides the absolute level of health care funds and a percentage distribution by the sources of funds for Fiscal Year 1994/95. The total expenditure of Rs. 11.45 billion spent on health care was equivalent to 5.45% of GDP or Rs. 572.7 per capita (US$11.45 per capita).

This estimate of the proportion of GDP devoted to the health sector is substantially higher than estimates from previous studies. For example, Shrestha and Shrestha (1995) estimate that in FY 1993/94, 4.5% of GDP was devoted to health expenditures.

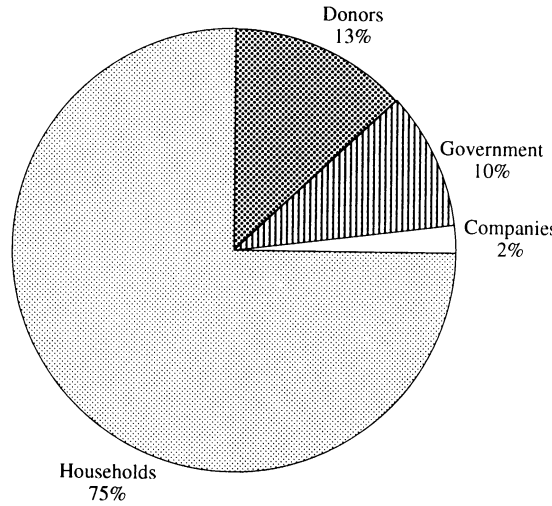

Figure 1. The role of households in Nepal's health economy (total = Rs. 11.45 billion)

Source: 1996 Nepal Living Standards Survey; 1994 and 1995 United Nations Development Project Survey of External Assistance; 1996 HMG/Nepal Ministry of Finance, Department of Health Services; 1996 Asian Development Bank Survey of Private Companies.

Moreover, our estimate of the proportion of GDP devoted to the health sector is substantially higher than estimates from other countries in the South Asian region, such as Bangladesh or Pakistan. Only India, at 6% of GDP, spends relatively more than Nepal (World Bank 1993). However, it should be pointed out that we have not assessed the reliability of the estimates of expenditures in Bangladesh, India, and Pakistan.

Previous studies tended to underestimate national health care expenditure because they lacked information on private health expenditure. Our estimate is not only based on information coming from the government and donors, but also from a survey of private companies and the NLSS. As a result, we estimate that private expenditures on health account for 3.9% of GDP, while the World Bank, for example, provides an estimate of 2.3%.

Of the Rs. 11.45 billion that we estimate is spent on health care, the overwhelming majority was provided by private households, while donors, the government, and private companies accounted for much smaller levels. Household out-of-pocket payments are the

Table 1. Health expenditures per capita and share of household budget spent on health care, by urban/rural status and by income quartile

	Total		Urban		Rural	
Income quartile	Rs.	Health share	Rs.	Health share	Rs.	Health share
Total	505.2	5.02	1022.1	4.82	464.5	5.29
First	104.4	3.20	35.1	1.11	106.3	3.23
Second	239.3	4.58	269.4	5.17	238.5	4.56
Third	549.4	6.65	456.5	5.39	554.9	6.72
Fourth	1582.2	7.80	1517.3	5.19	1605.4	8.72

Note: Health expenditures include the out-of-pocket costs of chronic and non-chronic illnesses, injuries, and birth deliveries.

source for over 75% of all health sector funds. International donors, the government, and private companies made up 13.1, 10.1, and 1.5%, respectively.

That a country as poor as Nepal is heavily reliant on households for financing health care is consistent with previous research findings. For example, Schieber and Maeda (1997) report national-level findings which indicate that the income elasticity for the public and private components of health care expenditures is 1.21 and 1.02, respectively. This suggests that public health spending is more responsive to income differences than private health spending and is consistent with the fact that low income countries have a larger private share of total health expenditures (Schieber and Maeda 1997). The importance of households in the funding of health care not only suggests that households are willing to expend considerable resources on health care, but also underscores the importance of understanding the determinants of household health care expenditure.

Health as a share of the household budget

Despite Nepal's status as one of the poorest countries in the world, households at all income levels spend a significant amount on health care. On average, Nepalese spend Rs. 505 per year on health-related goods and services. This translates to over 5% of total per-capita household expenditures. Table 1 presents total per capita out-of-pocket health expenditures by urban/rural status and by income status. The measure of health expenditure used in this table includes the travel and consultation costs of non-chronic illnesses and injuries, chronic illnesses, and birth deliveries.[3] Excluded are the costs of immunizations and family planning services, which were not measured in the NLSS instrument.

The percentage of total household expenditures used for health care services increases with the level of household income.[4] For example, the percentage of expenditures used for health is 3.2% for the poorest quartile, 4.6% for the second quartile, 6.7% for the third quartile, and 7.8% for the wealthiest quartile.

As expected, urban households spend more on health care than rural households. Urban households spend Rs. 1022 per capita on health care, which is 120% higher than the rural average of Rs. 465. However, Table 1 also shows that, unexpectedly, rural households spend more than urban households if income per capita is introduced as a control variable. For example, for each quartile group except for the second group, rural households spend more than urban households, both as a percentage of total expenditures and as absolute levels. The difference is particularly large among households in the poorest quartile, where rural per capita spending is Rs. 106, three times higher than the per capita average of urban households, Rs. 35. In addition, for all four income groups, the share of household expenditures devoted to health care is higher for rural households than for urban households. In the next section, we will explain some of this variation. Overall, we find that prevalence and severity of illness, age, income, and provider choice account for much of the noted health expenditure variation between urban and rural households.

Table 2. Percentage of persons reported to be ill or injured in the past month or chronically ill, by urban/rural status, or total income quartile

		Urban/Rural status		Income quartile			
	Total	Urban	Rural	First	Second	Third	Fourth
% ill or injured	9.4	7.9	9.5	8.0	9.5	10.1	12.3
% chronically ill	5.5	4.7	5.6	4.6	5.4	6.2	7.7
% seeking treatment[a]	66.8	77.4	66.1	52.7	69.4	80.0	75.1
Mean age	22.6	23.6	22.5	21.1	22.3	23.4	26.6
N	18 855	3760	15 095	5641	4888	4451	3875

[a] Percentages refer to treatment of non-chronic illnesses or injuries.

Determinants of health expenditure

Frequency of illness

That rural households spend more on health care than urban households (controlling for income per capita) can largely be explained by investigating the incidence of illness in rural and urban areas. Overall, 9.4% of the individuals surveyed report suffering from a non-chronic illness or injury in the month prior to the survey. Table 2 presents the percentage of persons who report to be ill or injured by income per capita group and by urban/rural area. Individuals living in rural households report themselves to be sicker, on average, than individuals in urban households (9.5% vs 7.9%).[5] The most frequent symptoms reported in both rural and urban areas are diarrhoea and fever.[6]

In addition, the severity of illness among rural individuals who reported an illness in the past month is substantially greater than among comparable urban individuals. Specifically, the average number of activity days missed due to illness in the previous month is 4.38 for rural individuals, compared to 3.88 for urban individuals (Table 3). The magnitude of this urban/rural differential is most dramatic among the first three income quartiles. For example, the number of days missed among sick individuals in the second income quartile is 5.38 in rural areas, which is significantly higher than the 0.86 average number of days missed among comparable individuals in urban areas.

This may indicate one of several urban/rural differences. For example, rural households may be less likely to report an illness if it is not severe. Alternatively, diseases causing illness in rural areas may be more disabling. Another related explanation is that rural individuals, once sick, may delay the utilization of treatment from modern practitioners, perhaps because traditional practitioners are their preferred choice. If traditional treatment does not cure an individual of an illness, then treatment from modern practitioners may be sought, by which time the severity of the illness might be greater and treatment costs higher. Sorting out this difference is not possible with the NLSS.

Table 3. Mean number of work or activity days missed due to last illness, among individual reporting an illness in the previous month

	Urban rural status	
Income quartile	Urban	Rural
Total	3.88	4.38
First	0.22	2.99
Second	0.86	4.38
Third	4.12	5.71
Fourth	5.05	5.46

Age is generally considered to be an important determinant of illness. As expected, the relationship between age and reported illnesses and injuries is U-shaped. Children. under five years of age and adults 45 years of age and older have higher prevalence rates

than other individuals. The U-shape of the relationship is particularly pronounced in urban areas, as the prevalence rate for young children is higher and the prevalence rate for individuals 5 to 29 years of age is lower than the rates of comparable individuals in rural areas.

Although it might be expected that households with higher incomes would suffer lower rates of illness, this is not usually found to be the case. Table 2 indicates a positive correlation between reported illnesses and income per capita. This positive relationship is a result of both an older age structure and a higher prevalence of reported illness among wealthier households. The older age distribution is reflected in the fact that the mean age of individuals living in wealthy households is 26.6 years of age, compared to 21.1 years of individuals living in the poorest quartile of households. The higher prevalence of illnesses is evidenced by the higher proportion of wealthy children under five years of age who are reported to be ill. For example, 21.6% of children in the top income quartile are reported to be ill compared to 8% of children in the lowest expenditure quartile. This high prevalence rate among children of wealthy households is largely attributable to a higher frequency of diarrhoea and fever cases. A possible explanation of this negative relationship between income class and prevalence of illness, which seems counterintuitive, may be associated with how individuals from different social classes perceive the symptoms of illness.

According to Table 2, 5.5% of the sample report suffering from a chronic illness. The rate is higher among rural individuals than among urban individuals (5.6% vs. 4.7%), which is surprising given that the rural population is substantially younger. However, age-specific rates of chronic illness are generally higher for each age group in rural areas except for children under five years of age.

Not reported in Table 2 is the finding that individuals in the mountain areas more frequently report chronic illnesses than individuals in the hill or Terai regions. The percentage of persons who report suffering from chronic problems is 7.8% among mountain individuals, compared to 8.8% for hill and 4.3% for Terai individuals. This relationship also holds when age is introduced as a control variable.

Health care utilization

The supply environment

Persons in need of health care in Nepal have the choice of using either modern or traditional health care providers. The modern sector consists of government services, private services, and services provided by quasi-public agencies such as non-governmental organizations (NGOs), while the traditional sector consists of government and private providers. The bulk of public modern services are provided by facilities administered by the Ministry of Health (MOH), which constitutes over 90% of public health expenditures. However, public health care is also offered in hospitals administered by the Ministry of Defense, the Ministry of Home, and the Ministry of Education and Culture.

While all urban communities have access to services from a public health care clinic, only about two-thirds of rural communities (65.4%) are within 60 minutes travel time of a public clinic, despite the fact that HMG/Nepal has made substantial progress in improving access to health care in the past five years. Moreover, only 10.2% of rural communities are within one hour of a public hospital.

The private health care sector consists of pharmacies that offer health care services and prescribe and sell drugs, private hospitals (referred to as nursing homes in Nepal), private clinics, x-ray laboratories, and services offered by private factories as a benefit to their employees. In the past decade, the government has encouraged the private sector to play a greater role in health care delivery by providing a more tolerant regulatory environment and by granting import duty waivers for the purchase of equipment and drugs necessary for health care provision. The effect of these policies appears to be substantial. For example, in the past 12 years, the number of private hospitals located in urban areas has mushroomed from one facility offering ten beds in 1984 to 61 facilities offering 1126 beds in 1996.

In rural areas, there is a limited availability of private practitioners who provide modern health care. In fact, only 17.6% of rural communities were reported to be less than one hour from a private nurse or doctor. Pharmacies are considerably more prevalent: 38.0% of communities were reported to be within one hour of a pharmacy.

A number of public providers other than the government also provide health care services in Nepal.

Table 4. Percentage distribution of persons reported to be ill in the past month, by type of care first utilized, and by urban/rural status, or by total income quartile

Type of care	Total	Urban/Rural status		Income quartile			
		Urban	Rural	First	Second	Third	Fourth
Total percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Government	55.4	41.1	56.4	57.0	54.9	58.2	48.7
Clinics	36.5	10.3	38.3	45.0	35.5	35.9	25.6
Hospital	16.7	24.6	16.2	12.0	17.6	18.1	20.0
Mobile clinic	2.2	6.2	2.0	0.0	1.8	4.2	3.1
Private	36.5	56.4	35.1	34.9	37.6	34.0	41.7
Pharmacy	9.4	11.7	9.2	10.2	8.1	9.9	9.8
Home visit	3.8	0.2	4.1	3.1	6.8	2.7	0.9
Hospital/other	23.3	44.6	21.8	21.6	22.7	21.4	31.1
NGO/Mission	1.1	0.7	1.1	0.9	0.7	0.2	3.7
Traditional	7.0	1.8	7.4	7.2	6.9	7.7	5.9

These providers include multilateral organizations such as the World Health Organization, bilateral organizations such as the German Agency for Technical Cooperation, international NGOs such as Save the Children, domestic non-governmental organizations, and missions such as United Mission to Nepal.

Choice of practitioner

At the most basic level, total health expenditure is made up of two components, the quantity of health services consumed and the price of those services. The quantity of services that members of a household consume is determined by their likelihood of visiting a practitioner when they get sick. Table 2 presents the percentage of persons who reported an illness or injury in the past month by whether they sought treatment from a medical practitioner, either modern or traditional. As expected, urban individuals are more likely to seek health care treatment than rural individuals. On average, 77.4% of urban individuals and 66% of rural individuals receive treatment from a health care practitioner when they get sick.

Individuals from wealthier households are considerably more likely to utilize health care services than individuals from poorer households. As Table 2 indicates, 75% of sick individuals in the richest quartile of households use health care services, compared with 53% of individuals living in the poorest quartile.

Given that public facilities charge only nominal fees for their services whereas private facilities rely on user fees to cover most of their costs, choice of practitioner would be expected to have a large impact on household health expenditure. In addition, we expected that, as in many developing countries, wealthier households would choose private practitioners and poorer households would choose public practitioners. We found that most households rely heavily on services provided by the public sector for the treatment of illnesses and injuries. Table 4 presents a percentage distribution of persons seeking treatment for illness in the past month by the type of health care setting that is first utilized. The results indicate that, of those seeking an initial consultation, 55% rely on government hospitals and clinics, 37% rely on private facilities, and 7% use a traditional healer.[7]

As one would expect, most poor individuals who utilize health care services relied on public care. A somewhat surprising finding, however, is the degree to which better-off households rely on public health care services. As Table 4 indicates, 49% of individuals in the wealthiest income quartile and 58% of individuals in the next-to-wealthiest quartile who seek treatment choose a public clinic or hospital for their first consultation, compared to 56% of individuals living in the poorest quartile.

Public providers are an important source of health care in both urban and rural areas. Table 4 indicates

Table 5. Average out-of-pocket consultation and travel expenditures for first visit, by source of care and by severity of illness

Type of care	All			No. activity days missed		
	number	Consult. Rs.	Travel Rs.	number	Consult Rs.	Travel Rs.
Total	1216	338.0	28.4	614	275.0	18.8
Public						
Sub-health posts	188	219.6	2.8	112	205.5	1.9
Health post	220	331.0	19.3	113	202.7	13.2
Health centre	10	103.0	3.3	6	123.0	0.0
Hospital	218	544.4	71.1	104	559.7	66.7
Mobile clinics	25	222.6	10.5	11	143.6	1.1
Private						
Pharmacies	130	217.7	8.1	63	202.8	2.3
Home visits	33	139.1	2.9	13	134.9	0.0
Hospital/other private	285	436.7	2.9	141	288.8	16.3
NGO/Mission	14	269.3	0.6	3	18.8	0.0
Traditional	93	161.3	3.3	48	120.0	0.3

Note: Illnesses do not include chronic illnesses.
Source: Nepal Central Bureau of Statistics/World Bank, Living Standards Measurement Survey, 1996.

that 56% of individuals using health care in rural areas utilize public services, compared to 41% in urban areas. The type of public facility most frequently used by rural individuals is the health post, while the hospital is the government facility of choice for urban individuals, which is most likely due to the fact that hospitals are considerably more accessible in urban areas such as Kathmandu.

Regarding the use of private services, urban individuals are considerably more likely to utilize private hospitals and other types of private care than their rural counterparts (56% for urban individuals vs. 35% for rural individuals). In addition, rural individuals are four times as likely to utilize a traditional healer as their first choice (7.4% for rural individuals and 1.8% for urban individuals). Traditional health care is found to be a more important source of care for individuals in the mountain areas (25%) than for individuals in the hill and Terai areas (9.7% and 3.8%, respectively).

Cost of health care

Even though user fees are almost non-existent at public facilities in Nepal, individuals who seek health care from public providers incur substantial monetary costs. Table 5, which presents average out-of-pocket consultation and travel expenditures for each type of health care setting, shows that the average cost of a public consultation is comparable to, if not higher than, a private consultation. For example, the average cost of a consultation at a health post or clinic is Rs. 272, which is 25% higher than the average household cost of a consultation at a pharmacy, which is usually provided by a health care practitioner. Moreover, the average cost of a public hospital consultation is Rs. 544, considerably higher than the average cost of Rs. 437 incurred at private hospitals or other private settings.

As Table 5 indicates, the finding that the costs of public and private care are comparable holds after controlling for severity of illness. For example, if only ill or injured individuals who report not missing any days from their normal activities are included in the analysis, the average cost of a consultation in a public health post is Rs. 201, which is slightly cheaper than the average cost of a consultation at a private pharmacy, Rs. 203.

That public care is associated with substantial out-of-pocket costs suggests that many public

Table 6. Household illness-related health care expenditures per capita, by type of care utilized and by total income quartile

			Income quartile							
	Total		First		Second		Third		Fourth	
Type of care	Rs	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Urban total	595.3	100.0	20.8	100.0	181.8	100.0	386.0	100.0	837.8	100.0
Public	358.0	60.1	11.3	54.3	103.0	56.7	274.1	71.0	490.6	58.6
Private	229.2	38.5	8.4	40.4	78.8	43.3	110.0	28.5	334.4	39.9
NGO/Mission	2.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.4
Traditional	6.0	1.0	1.1	5.3	0.0	0.0	1.9	0.5	9.3	1.1
Rural total	342.5	100.0	72.6	100.0	167.2	100.0	399.9	100.0	1234.9	100.0
Public	209.9	61.3	43.6	60.1	90.0	53.8	244.8	61.2	788.1	63.8
Private	113.1	33.0	25.4	35.0	64.6	38.6	128.3	32.1	390.8	31.6
NGO/Mission	3.7	1.1	0.4	0.6	4.8	2.9	3.7	0.9	8.2	0.7
Traditional	15.8	4.6	3.2	4.4	7.8	4.7	23.1	5.8	47.8	3.9

consultations involve purchasing drugs and services in the private market. For example, a doctor may initially treat an individual in a government clinic but then continue the treatment episode in his private chambers, or an individual may consult a practitioner in a public clinic but purchase medicines from a private pharmacy, perhaps as a response to drug stock-outs. The structure of the NLSS precludes distinguishing the extent of these two possibilities for individuals whose sole treatment consists of one visit to a doctor in a public clinic. Unfortunately, we do not have the ability to determine the percentage of expenditures that flows to private providers for drugs and services because the survey did not include specific questions that itemized consultation costs. Each individual reported only where the first and second consultation took place and how much was spent. Because of these limitations in the survey instrument, the average costs reported in Table 5 should be interpreted as out-of-pocket costs "associated" with utilizing the specific types of providers for an initial consultation rather than as the cost of the initial visit to that provider.[8]

We also investigated whether consultation costs of public and private providers varied by urban/rural area and by income group. As expected, average expenditures per visit to a health clinic are 51% higher among urban individuals than among rural individuals. Urban individuals also spend more on both public and private hospital consultations than rural individuals (23% and 13%, respectively). When visiting a health post or clinic, wealthier individuals spend more on consultation costs than poorer individuals. For example, the costs of a government consultation at a health post is Rs. 798 for individuals in the wealthiest quartile and Rs. 138 for individuals in the poorest quartile. As Parker (1986) suggests, this finding may reflect the practice in government facilities of prescribing more expensive medicines for the wealthy patient to purchase in the market. Poorer patients, on the other hand, may be given free government drugs or may not purchase medicines if given a prescription.

Distribution of illness-related expenditures by type of practitioner

Combining the previous sections on the choice to obtain medical care and the cost of visiting alternative practitioners, we can now examine how much households spend on public and private health care alternatives. Table 6 provides estimates of annual per capita out-of-pocket expenditures on the treatment of non-chronic illnesses and injuries. On average, households spend Rs. 361 per capita on health care. Over 61% of expenditures is associated with care provided in public facilities, while 34% is associated with private care offered in clinics, hospitals, or pharmacies, or through practitioners who make house visits.

In the previous section, we discussed that we are unable to separate out-of-pocket pharmaceutical costs from the overall expenditure on health care because

of limits in the NLSS instrument. However, a household-level survey carried out in 1993 (Center for Economic and Technical Studies, 1993) indicates that 77% of household expenditures on modern health care is used to purchase medicines. In addition, the percentage of health care expenditures that is spent on pharmaceuticals is substantially higher in urban areas than in rural areas. In urban areas, 86% of modern treatment expenditures is spent on medicines, compared to 74% in rural areas. In view of these results, it is likely that the vast maority of household out-of-pocket expenditures are used for drug purchases in the private market.

As expected, urban households spend more on health care than rural households. Urban households spend an average of Rs. 595 per capita on the treatment of illnesses and injuries, which is 74% higher than the rural average of Rs. 343. The percentage of per capita expenditures used for public care is almost identical in urban and rural areas (60% vs. 61%, respectively). However, urban households spend relatively more on privately-provided health care than rural households (39% vs. 33%, respectively). Much of the expenditure for private care in urban areas is used for care offered in hospitals. Care provided by NGOs and Missions account for 2% of household illness-related expenditures. Urban individuals reportedly spend relatively less on traditional health care than rural individuals (1% vs. 5%, respectively).

As is the case when total health care expenditures are considered, average per capita health expenditures are found to be higher for rural households than for urban households if income per capita is introduced as a control. As Table 6 indicates, rural households spend more per capita than urban households for three of the four quartiles considered (the second quartile is the exception). For example rural households in the wealthiest expenditure quartile spend Rs. 1235 per capita for health care, compared to the Rs. 838 per capita that is spent by urban households.

Table 6 also shows that for each income quartile, the percentage of illness-related expenditures spent on care associated with public providers is substantial. In fact, wealthy households rely more extensively on public facilities than poor households. In urban areas, for example, 59% of illness-related expenditures of wealthy individuals is associated with government care, compared to 54% for the poor. In rural areas, 64% of expenditures spent by wealthy individuals is associated with government care, compared to 44% for the poor.

Conclusions

Using a rich, nationally-representative household survey, this paper presents a descriptive analysis of health care utilization and expenditure behaviour in Nepal. The results of our analysis indicate a diverse use of modern and traditional health care. More than half of rural individuals who are ill choose public facilities which may offer either traditional or modern treatments, while private care is the preferred choice in urban areas. Surprisingly, wealthy households are no less reliant on publicly-provided services than poor households.

On average, health care accounts for about 5.5% of total household expenditure. The share of total expenditure devoted to health care increases with the level of household income. In terms of the role of households in the total health economy, out-of-pocket contributions account for almost three-quarters of the total funds used to finance Nepal's health care sector. This finding that households are the largest source of health sector funds is consistent with findings from other developing countries (Berman 1997; Schieber and Maeda 1997).

The analysis of the distribution of household expenditures on health care yields a number of surprising findings. First, despite the lower availability of health care services, rural households spend relatively and absolutely more on illness-related expenditures than urban households, after controlling for income per capita. The heavier economic burden of illnesses on rural households is found to be exacerbated during the rainy months of the year. The reasons for this urban/rural differential are complex. It is possible that the quality of publicly provided health care that is available in rural areas is low, resulting in a higher reliance of households on the private sector, both traditional and modern. Although rural households are less likely to seek care when they become ill, the prevalence of illness is higher and the severity of illness is greater in rural areas than in urban areas. The severity of illness may be greater because illnesses suffered in rural areas may be more disabling or perhaps because rural households delay the use of modern practitioners. One explanation for delaying modern treatment is that health care services are not readily accessible in rural areas.

A second unexpected finding is that households spend substantial amounts on health care when their initial consultation is with a public practitioner, despite the fact that public care is free or nominally priced. More than 60% of out-of-pocket expenditures for the treatment of illness is incurred by households that choose public treatment. This finding provides an indication that individuals use private services as a complement to the initial public consultation. For example, patients who visit a public facility may continue to see the doctor privately or purchase pharmaceuticals in the private sector because of stock-outs in public facilities.

How can the government use the results of this analysis to formulate policies that will potentially improve health outcomes among the population? A country's health care reform options largely depend on the ability of government health ministries to recover their costs. If households are able and willing to pay more for health care services in the form of user fees and/or insurance premiums, alternative financing strategies such as community health funds accompanied by user fees and quality improvements may be potentially successful in improving the degree of cost recovery and service quality and efficiency. Moreover, financing reform may be an effective tool to reduce the urban/rural differential in health care need and expenditures if the moneys collected by charging higher fees and premiums to individuals can be used to improve the financing of preventative health care programmes in rural areas.

The effect of user fees on health care utilization and health outcomes has been a subject of considerable debate in the past decade. Much of this debate has centred on the ability and willingness of households to pay larger out-of-pocket payments for health care. On one hand, the results of numerous studies in developing countries indicate that health care utilization rates among both poor and non-poor individuals would not be greatly affected by small increases in user fees (Akin et al. 1995; Shaw and Griffin 1995). Moreover, many studies also suggest that health care utilization would actually increase if increased user fees are accompanied by improvements in the quality of services (see Alderman and Lavy 1996 for an excellent review of the literature on this topic). On the other hand, other researchers have found that the price elasticity among the poor is substantial, which suggests that user fee schemes would have a regressive distributional impact (Gertler and van der Gaag 1990).

Would cost recovery strategies based on user fees and health insurance be successful in Nepal? Our findings clearly show that the financial resources available for funding the health sector are greater than previous estimates indicate. Despite the fact that Nepal is a very poor country, households are already spending considerable amounts on health care. We have shown above that households of all income groups frequent both public and private providers despite the fact that private providers charge user fees that recover a substantial portion of their costs and that there are substantial costs to households associated with visiting a "free" public provider. That better-off households are heavy users of the public system indicates that carefully designed financing strategies may be effective in achieving a higher level of cost recovery. In fact, a number of health financing reform experiments previously carried out in Nepal by United Mission to Nepal, The Britain Nepal Medical Trust, the World Health Organization, et al. and HMG/Nepal have demonstrated that households are willing to pay for higher quality care (Cross et al. 1996).

While these findings are encouraging, more research is clearly needed on how households in the South Asian context will respond to health care reform initiatives. Important policy relevant questions include: how will user fees in the public sector affect modern health care utilization and health outcomes, particularly among the poor?; how much are healthy individuals willing to pay for insurance premiums?; and, does the institutional and managerial capacity necessary to administer procedures such as collection and billing exist in Nepal?

Because the consensus for health sector reform based on user fees and community health insurance probably does not exist in Nepal, reform strategies should be attempted first through pilot studies to determine whether they result in their intended effects. If these pilot projects are successful, they would hopefully result in a consensus among the government, international donors, health care providers, and the public-at-large to begin to implement an appropriate reform programme on a larger scale.

End notes

[1] The Terai refers to the flat river plain of the Ganges in the southern region of Nepal.

[2] This analysis of the sources of health spending is based on the NLSS, government statistics from the HMG/Nepal's Ministry of Finance and the Ministry of Health, the United Nations Survey of

External Assistance, and recent surveys of private factories and companies funded by the Asian Development Bank. The estimate of household out-of-pocket expenditures accounts was deflated to FY 1994/95.

[3] To estimate expenditures on birth deliveries, we administered a survey of the normal costs of deliveries away from home in both private and public facilities, as well as the normal fees charged by traditional birth attendants in rural areas. This inforination, along with the survey response data on whether the woman delivered away from home or at home; and whether the practitioner was modern or traditional, was used to estimate expenditures for birth deliveries.

[4] Throughout this study, we use total household expenditure per capita as a proxy for household income per capita. This is a reasonable assumption given that household expenditure may more closely approximate household permanent income than an income measure. In addition, total expenditure is generally measured more accurately than income in developing countries. To create total income quartiles, we ranked all households by their level of total per capita household expenditure and then divided the households into four groups.

[5] The prevalence rates of illnesses and injuries are not significantly different between individuals living in the mountain, hill or Terai ecological zones.

[6] Not reported in Table 2 are our findings on the association between seasonality and the prevalence of illness. As expected, individuals report illness more frequently during the rainy season (12.0 %) than in the dry season (7.3 %). At the same time, utilization rates do not change substantially, resulting in significantly higher health care expenditures in the rainy season. These findings of higher reported prevalence of illnesses and increased health care expenditures during the rainy season conflicts with previous research in Africa on this topic. For example, Sauerborn et al. (1996) found that perceptions of illness and health care use were actually lower in Burkina Faso during the rainy season, despite the fact that health needs are higher.

[7] Ayurvedic health care services in Nepal are provided by government facilities as well as by private practitioners. In the NLSS, consultations provided by ayurvedic practitioners were not coded as traditional health care. Because the survey did not distinguish ayurvedic and modern practitioners, we had no alternative but to include ayurvedic treatments as modern care.

[8] The survey did not include questions on whether individuals are covered by health insurance policies. While health insurance is certainly not commonplace in Nepal, there are an increasing number of companies in Kathmandu that supply health insurance policies.

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