

A Study of Out of Pocket Household Expenditure on Drugs and Medical Services

An Exploratory Analysis of UP, Rajasthan and Delhi

Authored by:

**Moneer Alam
R.P. Tyagi**

In Consultation with

Anup Karan

Data Management:

**Sumit Gulati
Ayusmati Das
S. Deka**

OCTOBER 2009

**Population Research Centre
Institute of Economic Growth
Delhi – 110 007**

Correspondence: moneer@iegindia.org

Acknowledgements

This study was conducted with financial assistance from the SER Division of the Planning Commission, Government of India, grant number F. No. O-15012/6/07-SER. The entire study team is extremely grateful to Dr. Syeda Saiyidain Hameed, Member Planning Commission, for her keen interest and generous support. We are also very thankful to the Health Division of the Planning commission, especially Mr. Ambrish Kumar (Advisor, Health), for helping us all through, both academically as well as logistically. Mr. Kumar has also taken keen interest in evolving the over all concerns of the study and has shared with us about many critical issues engaging the mind of this apex body of planners and its health mandarins.

Back home, our thanks are due to both the previous and the current Directors of the Institute of Economic Growth (Professors Kanchan Chopra and B.N. Golder) for their all out support and encouragements. Other staff members of the IEG, in particular those manning the finance, computer, library and project offices, have also been extremely helpful and gave their best in making this study a success.

We also owe a debt of gratitude to all our professional colleagues including Dr. A.B. Dey (Professor in the Department of Medicine, All India Institute of Medical Sciences, New Delhi), Professor Nugroho Abikusono (WHO, SEARO, India) and other faculty members of the IEG for providing us many useful inputs off and on. M/S Fauzia Khan (New Delhi) has provided us excellent field support and arranged a team of well trained field investigators to visit the sample households in UP, Rajasthan and Delhi. I sincerely acknowledge their contributions to this study.

The views expressed herein are those of the author(s) and do not necessarily reflect the views of the Planning Commission or its Health Division.

*Moneer Alam, PhD
Professor of Economics
Project Coordinator and Lead Author*

CONTENTS

Acknowledgements	
List of Tables, Figures and Appendices	i – vii
Executive Summary	1- XXXV
1. Introduction	1 – 29
1.1 Existing Health Situation: A Few Stylized Facts	
1.2 Health Indicators: India and the States	
1.3 Objectives of the Study	
1.4 Collection of Primary Data: Survey Design and Selection of Households	
1.5 Survey Questions and Profile of Districts under Study	
2. Sample Household and Population: Size, Composition and Socio-demographic Profile	30 - 38
2.1 Sample Households and Composition of Sample Population	
2.2 Age-Sex Distribution of Population, Average Household Size and Nuclearization of Families: Rural and Urban Areas	
3. Socio-economic Variations, Consumption Poverty and Health Generated Inequalities in Sample Population	39 - 85
3.1 Socio-Economic Characteristics of Sample Population	
3.2 Quality of Life, Poverty of Consumption and Inequalities among Sample Households	
3.3 Levels of Consumption, Poverty and Inequalities among Sample Households	
3.4 Health-related Payments, Poverty and Inequalities	
3.5 Loans and Borrowings by Sample Households: Prevalence, Sources and Share of Borrowings for Health-related Payments	
4. Self-reported Ailments and Hospitalization: Differentials in Utilization of Health Care	86 - 91
4.1 Gender-wise and Inter-State Differentials	
4.2 Poor-Non-poor Differentials in Utilization of Health Services	
5. Catastrophic Spending on Health by sample Households: Some Results	92 -117
5.1 Share of OOP Health Care Spending in Total and Non-Food Consumption Budget	
5.2 Catastrophic OOP Payments: Definition and Head Count	
5.3 Intensity of Catastrophic Payments: Measurement of Mean Positive Overshoot (MPO)	
5.4 Correlates of Catastrophic Health Spending: A Probit Regression Analysis	
6. Share of Drugs and Medical Services in OOP Health Spending: Does Drugs lead to Inflate Households' Health Budget?	118 - 134
6.1 Decomposition of Health Care Expenditure by Households: Share of Drugs and Medical Services	
6.2 Share of Drugs and Non-Drugs in OOP Budget: Households by Consumption Quintiles	
6.3 Share of Drugs and Non-Drugs in OOP Budget: Households with Catastrophic Spending	

7. Utilization of Public Health Facilities: A Situational Assessment	135 – 155
7.1 Utilization of Public Health Facilities: Hospitalization and Out-Patient Care	
7.2 Factors in Non-utilization of Public Health Facilities: Respondents' View	
7.3 National Rural Health Mission: A Cursory Analysis	
8. Broad Conclusions and Policy Directions	156 – 169
8.1 Highlights of Major Findings	
8.2 Respondents' Views on Critical Policy Issues	
8.3 Broad Policy Directions	

List of Tables

- 1.1: Major Indicators of Health: All India
- 1.2: Share of Health in Revenue Budget of the Centre and States: 1985/86-2003/04
- 1.3: Share of Public and Private Hospitals in Treated Cases: Major States (2004)
- 1.4: Distribution of Sample Households: UP, Rajasthan and Delhi
- 2.1: Distribution of Sample Households by States and Districts
- 2.2: Population Size and Religious Composition of Sample Households
- 2.3: Share of Different Social Groups in Sample Population
- 2.4: Age Distribution of Sample Population by Districts and States
- 2.5: Type of Sample Households
- 3.1: Literacy Level of Sample Population
- 3.2: Activity Status of Household Population
- 3.3: Functional Status of Sample Population by Rural-Urban and Social Groups
- 3.4: Workers by Type and Nature of Activities: Gender, Rural-Urban and Social Groups
- 3.5: Distribution of Non-Working Sample Population by States and Districts
- 3.6: Quality of Houses and Access to Daily Life Services & Amenities: Total Households
- 3.6a: Quality of Houses and Access to Daily Life Services & Amenities: Rural Households
- 3.6b: Quality of Houses and Access to Daily Life Services & Amenities: Urban Households
- 3.7: State-wise House Ownership Status of Sample Households
- 3.8: Land Holdings by Sample Households
- 3.9: Distribution of Households by Per Capita Monthly Consumption Expenditure (PCMCE) Categories: U.P., Rajasthan and Delhi
- 3.10: Head Count of Consumption Poverty with and without OOP Expenditure on Health — UP, Rajasthan and Delhi
- 3.11: Poverty Gap (PG): States, Districts, Religion and Social Groups
- 3.11a: Differentials in Poverty Gaps with and without Health Spending in PCMCE: Total and Below Poverty HHDs in Sample Areas of UP, Rajasthan and Delhi
- 3.12: Gini Coefficients Based on Decomposed Monthly Consumption Expenditure
- 3.13: Share Indebted Households in Total Sample Households
- 3.14: Distribution of Medical and Non-Medical Loans (%)
- 3.15a: Sources of Borrowings: Households with Medical Loans
- 3.15b: Sources of Borrowings: Households with Non-Medical Loans
- 3.16: Loan Repayment Status of Sample Households
- 4.1: Hospitalized and Non-Hospitalized Care by Gender and Population Groups
- 4.2: Utilization of Health Care by Poor and Non-Poor
- 5.1a: OOP Health Expenditure as a Percentage of Total Consumption Expenditure: Sample Households

- 5.1b: OOP Health Expenditure as a Percentage of Total Consumption Expenditure: Socio-Religious Groups
- 5.2a: OOP Health Expenditure as a Percentage of Non-Food Expenditure: Sample Households
- 5.2b: OOP Health Expenditure as a Percentage of Non-Food Expenditure: Socio- Religious Groups
- 5.3: Catastrophic Payment 1: Percentage of Households incurring OOP Spending exceeding chosen thresholds (Total Consumption Budget)
- 5.4: Catastrophic Payment 2: Percentage of Households incurring OOP Health spending exceeding Chosen Thresholds (Non-Food Consumption Budget)
- 5.5: Intensity of Catastrophic Health Payments: Mean Positive Overshoot (MPO) (Total Consumption Budget)
- 5.6: Intensity of Catastrophic Health Payments: Mean Positive Overshoot (MPO) (Non-Food Consumption Budget)
- 5.7: Estimation of Probit Regression: List of Variables
- 5.8: Correlates of Catastrophic Health Spending: Probit Analysis
- 6.1: Shares of Drug and Non-Drug Expenses in OOP Expenditure on Health Care: Hospitalized and Non-Hospitalized Care
- 6.2: Shares of Drug and Non-Drug Expenses in Hospitalized and Non-Hospitalized Care: Consumption Quintiles
- 6.3 a: Shares of Drug and Non-Drug Expenses in Non-Hospitalized Medical Care: Catastrophic Households
- 6.3 b: Shares of Drug and Non-Drug Expenses in Hospitalization Cases: Catastrophic Households
- 7.1a: Hospitalization Incidence and Utilization of Public and Private Facilities: Sample Population (Reference Period: Past 12 Months)
- 7.1b: Out-Patient Treatment and Utilization of Public and Private Doctors/Facilities Sample Population (Reference Period: Past 30 Days)
- 7.2a: Utilization of Public and Private Hospitals: Quintile Groups
- 7.2b: Utilization of Public and Private Facilities: Non-Hospitalization Cases by Quintile Groups
- 7.3a: Utilization of Public-Private Hospitals by Catastrophic Households: $z = 5\%$ and 25%
- 7.3b: Utilization of Outpatient Public & Private Facilities by Catastrophic Households: $z = 5\%$ and 25%
- 7.4a: Non-Utilization of Government Hospitals/Facilities: Respondents' views
- 7.4b: Non-Consultation of Public Facilities & Medical Doctors: Respondents' views
- 7.5a: Awareness about the NRHM and Availability of Primary Health Facilities: Responses from Rural Households
- 7.5b: Utilization and Felt Improvements in Service Delivery since NRHM Responses from Rural Households
- 8.1: Increase in Poverty due to the OOP Health Payments: Sample Households
- 8.2: Indian Pharmaceuticals and Health Care Sector
- 8.3: Respondents' Views on Critical Policy Issues

Appendix Tables

- 1.1 Districts by Size of Population below Poverty Line in Uttar Pradesh: 2002
- 1.2 Share of BPL Families by Districts in Rajasthan: 2002 (Rural-Urban Combined)
- 2.1 Distribution of Sample Population in Delhi (Slum and Non-Slum Households)
- 3.1 Distribution of Sample Population by Education: UP and Rajasthan
- 3.2 Main and Marginal Workers by Districts (2001)
- 3.3 Household Expenditure on Food and Non-Food Consumption Items
- 3.4 Descriptive Statistics: PCMCE of Sample Populations
- 4.1a Percentage of persons within age 15-49 who visited a health facility in the three months preceding the survey India: (2005-06)
- 4.1b Percentage of persons hospitalized during the past one year: India NSS 60th Round
- 5.1 Descriptive Statistics: Variables used in Probit Regression Analysis
- 6.1 Increases in Poverty Level due to OOP Health Payments

List of Figures

- 1.1: Estimated DALYs by Communicable and Non-Communicable Diseases: India, China and Other South Asian Countries
- 1.2: Estimated Deaths by Communicable and Non-Communicable Diseases: India, China and Other South Asian Countries
- 1.3: Public Health Expenditure as Percentage of GDP: All India (Nominal)
- 1.4: Post Reform Growth in Per Capita Health Expenditure: All India (Nominal and Real)
- 1.5: Declining Share of Health in Revenue Budget of Major States: 1985-86 & 2003-04
- 1.6: Utilization of Public Facilities in Hospitalized Care: Rural-Urban Distribution
- 1.7: Circular Systematic Sampling Procedure
- 1.8: Selection of PSUs in UP and Rajasthan
- 2.1: Rural-Urban Differences in Shares of Working Age (15-59) Population
2. 2a: Type of Households (Rural)
- 2.2b: Type of Households (Urban)
- 3.1: District-wise Share of Men and Women Disabled to Work
- 3.2: House Ownership Status by Social Groups: Total Sample
- 3.3: Landing Holdings by Hindus and Muslims: Total Sample
- 3.4: Households with Telephone and Bank Account (Percentages)
- 3.5: Descriptive Statistics: PCMCE of Sample Population in U.P., Rajasthan and Delhi
- 3.6: Type 1 and Type 2 Poverty by Social Groups
- 3.7: Inequalities in PCMCE – Sample HHDs of UP and Rajasthan (Rural)
- 3.8: Inequalities in PCMCE – Sample HHDs of UP and Rajasthan (Urban)
- 3.9: Inequalities in PCMCE – Sample HHDs of UP (Rural)
- 3.10: Inequalities in PCMCE – Sample HHDs of UP (Urban)
- 3.11: Inequalities in PCMCE – Sample HHDs of Rajasthan (Rural)
- 3.12: Inequalities in PCMCE – Sample HHDs of Rajasthan (Urban)
- 3.13: Inequalities in PCMCE – Sample HHDs of Delhi (Urban)
- 3.14: Share of Medical Loans in Total Loans by Socio-Religious Groups and Study Area
- 3.15: Rural-Urban Distribution of Non-payment Households (% of HHDs)
- 4.1: Age-Distribution of Women Using Hospital and Non-Hospital Care (%)
- 4.2: Age-Sex Distribution of Health Care Users: Hospital and Non-Hospital Care (%)
- 5.1: Catastrophe Head Count: Total Consumption Expenditure
- 5.2: Catastrophe Head Count: Non-Food Consumption Expenditure
- 6.1: Share of Drugs, Medical Services and Transportation: Hospitalization and Non-Hospitalized Care: Rural-Urban and Slum-Non-slum Households (%)

- 6.2: Drugs, Health Services and Transportation in OOP Health Budget: Quintile Groups
- 6.3a: Drugs, Health Services and Transportation in OOP Health Budget: Catastrophic Households (z = 5% of Total Consumption)
- 6.3b: Drugs, Health Services and Transportation in OOP Health Budget: Catastrophic Households (Hospitalized Episodes: z = 5% and 25% of Total Consumption)
- 7.1: Inpatient and Outpatient Treatment: Utilization of Public and Private Medical Facilities
- 7.2a: Types of Health Care Utilized by Sample Inpatients
- 7.2b: Utilization of Public Private Facilities: Out-Patient Treatment
- 7.3a: Inpatients Treated in Public and Private Facilities: Catastrophic Households
- 7.3b: Outpatients Treated in Public and Private Facilities: Catastrophic Households
- 7.4a: Reasons for Non-Utilization of Public Facilities: Hospitalization
- 7.4b: Reasons for Non-Utilization of Public Facilities: Non-Hospitalization
- 8.1: Ability to Pay and Health Inequalities: Rural Households
- 8.2: Ability to Pay and Health Inequalities: Urban Households

Executive Summary

Plagued by an unacceptably high level of morbidity and mortality, malnutrition, low standards of public health, short life expectancy, and poor access to health care services, there has been a series of attempts at various levels to find ways and means to bring about a change in the situation of an average person. Despite these problems and a series of policy initiatives over the past decades, health remains a critical issue of increasing concern in recent years with a growing recognition that the country suffers because of unacceptably high burden of diseases, premature deaths and public apathy. Some of these concerns have already been highlighted in a detailed report prepared recently by the National Commission on Macroeconomics and Health (NCMH), which was constituted by the Government of India in March 2004. The Commission's report was made available in August 2005.

Drawing upon inferences based on recent health surveys, the Commission's report was among the few public documents which have clearly agreed that the private out-of-pocket (OOP) health expenditure often pushes low-income households to face a catastrophe, and forces many of them to slip below the poverty line. In many a situation, it may as well block intergenerational flows with severe implications for family members including co-residing old, especially women.

Existing Health Situation

As poverty is still persistent in most rural areas and urban slums, reliance on private health providers is severely fraught with serious economic consequences, especially for low income households engaged in the informal economy. There is now a realization that the health situation in India is seriously entrenched in wide spread poverty, malnutrition and enormous disparities in almost every sphere of human life. This is particularly true for rural areas where the per capita monthly consumption expenditure is alarmingly low. Disease prevalence is in many cases large among low income rural and urban households. There is an increasing role of the market in delivery of health and diagnostic services with a very high out-of-pocket expenditure for seekers of health care. Infrastructural bottlenecks are faced by health services provided by the central, state or local governments. These bottlenecks go beyond physical or financial resources and cover whole aspects of hospital administration including large-scale deployment of doctors to non-clinical services causing a

considerable amount of dissatisfaction among users of public services, thereby forcing a shift toward private medical services and the resultant out-of-pocket expenses. All these issues are in direct contradiction to the two most significant national policy documents—the National Population Policy (2000) and the National Health Policy (2002).

Despite its persistent efforts and inputs received from a number of specially constituted bodies, India is critically lagging in terms of its longstanding commitment towards building a healthy society based on certain norms of equity and efficiency. From the studies conducted in recent years a range of physical, financial and manpower-related anomalies suffered by public health facilities in India have been highlighted. However, how these anomalies have affected low income households, particularly in backward districts of states with a high poverty rate, remains almost completely a neglected subject. Much of the literature has also failed to examine the nature of households and the income level of those who are trapped within a poverty syndrome or experience catastrophe as a result of losses suffered due to expenditure on various health care services and components – especially drugs and medicines — in poverty-ridden rural and urban areas and sprawling slums. The present study, conducted during March 2008 to June 2009, was basically designed to highlight some of these neglected issues by using data from a uniformly designed household survey in three states including UP, Rajasthan and Delhi. The focus is largely on private expenditure going to purchase of drugs and medicines for treatment of ailments both with and without hospitalization.

Objectives of the Study

The underlying study was designed to examine private out-of-pocket expenditure by households after decomposition by various components of medical services including drugs and medicines. Attempts have also been made to assess the extent of borrowings used to finance medical expenditures, and their consequences for households' abilities to meet the basic food and non-food requirements of their young and old.

To state more explicitly, the study focuses more conclusively on the following specific issues:

1. An analysis of the patterns of treatment of short (past 30 days) and long (past 365 days) duration morbidity under different socio-economic and ethnic settings. A part of the analysis was also devoted to examine the role of health expenditure in pushing households to fall below the poverty line and face catastrophe — amounting to a

significant decline in over all welfare of households and their non-food consumption expenditure. There was also concern in regard to the prevalence, intensity and causal risk factors associated with catastrophic health spending of households.

2. An assessment of the total and disaggregated expenditure incurred in treatment of short and long duration ailments, and the sources used to generate the requisite finances including past savings, asset liquidations, borrowings from money lenders and assistance drawn from informal support networks.
3. A review of expenditure on the purchase of medical drugs (including life saving drugs and general medicines) as a proportion of total health budget for the treatment of short (without hospitalization) and long (hospitalization) duration ailments. This analysis was basically conducted to derive host of policy options required to reduce out-of-pocket health spending by households and its size. If drug expenses constitute bulk of private (and often catastrophic) health spending, government has to become more vigilant in terms of its drug pricing policy and TRIPs (including TRIPs Plus) negotiations. Over prescription of medicines and other malpractices may also need attention.
4. Resources mobilized by households to meet medical expenses, especially those on drugs, medicines and other services.
5. If the NRHM (National Rural Health Mission, 2005) has in anyway helped in protecting poor households from the adverse economic consequences of illness episodes in rural areas.

Study Area and Sample Design

This study has been conducted in selected districts of two special focus states – Uttar Pradesh (UP) and Rajasthan. In addition, an attempt has also been made to include Delhi and its 9 administrative districts as one of the study areas due to its wider representation of population from different parts of the country. Choice of U.P. and Rajasthan as the states of study was made on two specific considerations: (i) high poverty levels and (ii) a relative weaker demographic status. In order to complete the regional configuration, and also to examine the issues faced especially by slum households, it was subsequently decided to include the capital city of Delhi as well.

Confined somewhat narrowly in scope to only the country's northern belt, and also to a predetermined sample size of 2010 rural and urban households, a multi-stage sampling procedure was adopted for the collection of field data. Data have been collected from a total

of 1250 rural and 400 urban households of U.P. and Rajasthan, and 360 households of Delhi. Households in Delhi were further broken into slums and non-slums with the latter numbering 258 and the remaining 102 were drawn from the identified slums. The primary survey unit (PSU) remains the household. The districts were chosen on the basis of poverty measurements derived by the Ministry of Rural Development on the basis of its 2002 BPL Survey. Circular systematic sampling procedure was adopted.

Survey Questionnaire

A comprehensive, structured and multi-part questionnaire was used to collect information from selected rural and urban households in UP, Rajasthan and Delhi. From beginning to end, the entire protocol was divided into 14 different parts, covering almost 5 major groups of information. These include:

- Socio-economic details of the households and their members including their three broad social categorizations (Scheduled Caste, Scheduled Tribe and Upper Castes), age-sex profiles, relationship with the head of the household (usually the basic point of consultation), educational attainments, work status, residential characteristics (rural-urban), housing conditions, access to public health facilities, road links with the primary health centers, possession of consumer durables, land holdings for agricultural purposes (both arable and fallow).
- Households' access to selected health and non-health facilities runs by the government. Some of the questions included in this part of the questionnaire have also been directed to explore any improvements in delivery of services experienced by households since the inception of the National Rural Health Mission (NRHM).
- Food and non-food consumption expenditure of the households based on dual reference periods – past 30 days and past one year as was usually followed by the National Sample Survey Organization (NSSO). Attempts have also been made to examine the debt incidence among the sample households, type of moneylenders accessed by them and the purpose of borrowings differentiated by events such as health, education, investment, and major consumption requirements including marriages. All these information were used to examine the poverty status of the households and prevalence of health catastrophe suffered by them.
- Disease episodes, both with and without hospitalization, utilization of public/private health facilities, choice of health providers and other related details including

itemized health care expenditure and share of money spent on medicines, diagnostics and so on.

- Last few sections of the survey protocol were devoted to understand the views of the households on measures required to improve the health delivery mechanism in the country by public bodies. These households were also asked to give their views on introduction of a universal and low premium health insurance system and their participation in such a scheme.

Socio-Economic and Demographic Profile of Households

The percentage of women in the sample of all the four districts in UP and Rajasthan is smaller — implying more men in many of the sample households than women. The slum households of Delhi are however the only exception where women constitute over 52 percent of the sample. In a situation of growing male migration, these results may look somewhat arbitrary. Hindus dominate the overall distribution of sample population followed by Muslims. Sikhs are only visible in Delhi. In terms of social groups, the sample represents the low and the backward castes (SC and OBC) fairly well; the former turns out to be over a fifth (22.6 percent) of the total sample while the latter is nearly double of that (38.7 percent). The percentage of people of higher caste in the sample is relatively much smaller. As a whole, the higher castes constitute around a fourth of the total sample.

U.P. and Rajasthan, often considered as highly traditional with older values still in practice, have also been turning out to becoming dominantly nuclear with families comprising parents and dependent children. U.P. appears to be more nuclear than Rajasthan; average size of the sample households is between 5 and 6 with the lowest relating to the non-slum urban households in Delhi. The share of female-headed households is also relatively higher in Delhi, though a large majority of them come from the loner (or one person) households.

Socio-Economic Characteristics of Sample Population

The age distribution of the sample population in all the districts reinforces the pattern observed in most of the country where a very high share of the working age populations is in the 15–59 years age-group, implying a large-scale pressure of jobseekers in the coming years on the clearance mechanism of the labour market. The higher proportion of the 15-59

population in all the four urban locations are indicative of a considerable degree of migration to cities by working age rural people, and the pattern of health care services required in areas under study.

The educational distribution of the sample population does in no way contribute to the perception of any marked improvement in the social status of population in the districts of both of the major states under consideration. The same may as well be true for the slum households in Delhi. A very large percentage of people in smaller towns and low income residential areas of places like Delhi are either illiterate or semi-literate with their educational attainments being not adequate to prevent poor health and poverty. Around a third of the total sample population (i.e., between 30 and 36 percent) in most of these places is shown to be completely illiterate with the highest level of illiteracy being found among the slum residents in Delhi. Another 50 percent of them are below matriculate with a large fraction of them being simply educated up to the primary level or even less. Only about a twentieth of the total respondents held a degree from higher educational institutions. There was also a very small fraction of respondents in all the three states with a degree or diploma in professional courses. There is a considerably high gender gap in levels of educational attainment. The usual rural-urban divide in terms of educational status of populations is clearly visible from our sample as well; with residents living in urban areas being better educated than their rural counter parts.

A little less than a third of the total sample population in majority of the cases is economically active with considerable gender differentials. Barring Dunger Pur in Rajasthan, nowhere the share of working women exceeds over 13 percent of their reported total population. With almost a quarter of total women engaged in one or the other economic activity, Dunger Pur has indeed remained distinct from all other districts under study. Unlike gender, place of residence apparently plays hardly any significant role in pushing families and households to becoming economically more engaged. There are not any major differences in activity status of rural and urban households from different districts/tehsils. Barring Dunger Pur where differentials in activity status between rural and urban areas are considerably large, there is no similar example in any other place covered in the study. In all other cases, the observed differentials remain marginal. This is true for the slums and non-

slums in Delhi as well; the highest fraction of 'working' people belonged to the Scheduled Tribes category with more than 35 percent of them having reported themselves economically active. The remaining three (in particular SC and OBC) were significantly behind and the size of their working males and females were in the vicinity of 30 to 31 percent of their respective populations.

About three quarters (74.2%) of the working males have reported themselves as the main workers – implying they had paid employment for about 186 days or more during most of the preceding 12 months. The rest 25.8 percent have however failed to meet this criterion and reported being unemployed for a greater part of the year. They were therefore considered as marginal workers. Women, as usual, suffered from double jeopardy—only a fewer of them were economically active, and those active were largely in low-quality unskilled employment. A considerably large fraction of the unskilled employment created under the National Rural Employment Guarantee Act (NREGA, September 2005) to improve livelihood conditions of rural households has seemingly gone to women, especially in both the districts of Rajasthan. In addition to women, many of those engaged in lower category employment invariably comprise persons from the lower echelons of the caste hierarchy including the SC, ST and OBC.

One of the most significant factors responsible for keeping a big majority of the younger population out of the workforce is their participation in educational activities. It turns out to be the case in all the districts including in slums and non-slums. Also this gap exists irrespective of the places under study and includes even households from the non-slum areas of Delhi. Another dominant reason for not being able to work is unemployment, especially among the people of Unnao in U.P. and the slums of Delhi. A significant proportion of people at both the places do not work for lack of employment. A more disturbing factor is noticeably the share of non-school going children in almost every district and slums. While a large majority of those children (i.e., over three quarters) were too young and below 4 years of age, almost a fifth of them were grown up and in higher ages as well. Those adding to the size of non-working household population also include a fraction of persons comprising mentally or physically challenged. A small number of persons have also reported to withdraw from active work force because of post sickness frailty or senescence.

Males in most of these cases outnumber females, perhaps partly on account of reporting biases. Dausa in Rajasthan reports such cases more than U.P. or Delhi.

Quality of Life of Sample Households

The analysis brings out very clearly the poor economic background of most households in the sample. It indicates a very modest living by a large majority of the respondents, most of them residing in non-bricked (*kutchha*) dwellings without access to many of the basic amenities like better (smoke free) cooking fuels, drainage system, toilet facilities, scavenging and so on. The situation is far worse among the rural residents where almost 9 out of 10 houses are non-bricked and their residents survive without an in-house toilet or scavenging facility. These and most other facts clearly raise many big questions about the health prospects of rural people who are apparently torn between two basic issues — one being a more or less complete lack of preventive mechanism like drainage, regular scavenging, pit/flush toilets, smoke free cooking fuels and so on, and the other arises from a lack of concern among health officials about the need for non-reproductive health care services, leaving a big fraction of rural households in the clutches of private health care providers. The former, i.e., lack of preventive mechanism, is also an issue that needs to be examined by keeping in mind the financial status of urban and rural bodies which are largely responsible for disease preventive services like scavenging, waste disposal and creation of all weather drainage system. As most of the local governments/bodies are generally constrained because of poor governance and suffer from inadequate finances (partly because of their inelastic tax revenues), they usually remain non-functional in terms of services required to prevent many non-life-style-related diseases.

Urban areas, as expected, remain considerably better and are able to offer many of the basic facilities to a much bigger fraction of the sample population. And yet, many of the respondents did report poor housing conditions and lack of civic services like choked drainage and infrequent scavenging. Inequalities in access to many of these facilities may as well be noticed across socio-religious groups.

Barring to some extent in Delhi, house ownership in most places is either through inheritance or built and owned by the head of household. Both the patterns jointly account

for more than three quarters of house ownerships in the sample. Inherited houses are found to be highest in U.P. (67.5%), followed by Rajasthan (57.2%). Delhi, in contrast, stands lowest on this criterion (merely 25.8%). However, the percentage of houses owned by the head of the family is considerably large in Delhi. This is particularly true for the slum dwellers (73.5%). An inference emerges that house ownership is decisive in holding the reins of the family. It holds true for different social groups as well.

Distribution of sample households by size of land holding presents a worrisome picture. Even if we ignore Delhi, for obvious reasons, the remaining two states, with considerable dependence on agriculture, almost half of the rural households in both the states are either landless or own a small piece of land measured below an acre in size. The fraction of households with a land holding size of over 5 acres is amazingly low in both the states—a little over 10 percent in UP and over 4 percent in Rajasthan.

While it needs to be admitted that the slant in favour of relatively poor districts and households in our sample may have ended up in pulling some of our results down, it may as well be recognized that these results may help to cause some alarm to the concerned departments with perhaps generating a greater realization about the health risks of people in these districts and their necessary health delivery infrastructure. Simply a programme with much of its focus remaining directed to reproductive and (certain domains of) child health may not suffice. The situation doesn't improve either even if we look at the land ownership status of the upper caste households in the sample. About two-thirds of them are landless, which is even worse than the other lower caste categories. They are nevertheless slightly better when it comes to bigger land holdings; a little over 5 percent of the total upper caste households owned land above 10 acres in size. Conforming to the general perception, Muslims are found way behind the Hindus—more of them are landless and their land holdings are also relatively smaller.

Of the two other quality of life services – the telephone connection and a bank account – the former appears to be much less commonly possessed by the population under study than the latter. Considering the growing penetration of mobile phone services in most of the country including U.P and Rajasthan, our results may not be accepted at their face value. A possible explanation of this underestimation may be found in certain confusion

among survey teams between the land line and the mobile telephone connections. Disregarding this, the bank account data seems interesting as it indicates a good number people in most areas, particularly in Delhi and Rajasthan, holding a bank account. Muslims, rural U.P. and Scheduled Tribe households are the exceptions. With 86 percent of the total respondents having a bank account, Non-slum Delhi is obviously far ahead than many others.

Consumption Level, Poverty and Inequalities among Sample Households

The analysis reveals a large-scale poverty situation in the two districts of UP (Unnao and Jhansi) with 50 percent of its sample households reporting a total of Rs. 500 or less as their total per capita monthly consumption expenditure (PCMCE) including food, non-food and health care. Even allowing for some overestimation due to data limitations, the fact that a large number of people in the state survive at Rs. 17 a day or less is a scary picture. Rajasthan (Dausa and Dungeer Pur), though in a slightly better situation with a lesser fraction of people at Rs. 500 (or Rs. 17 a day) consumption band, its poverty situation is no way less alarming. Another interesting point to notice in both of these states is the fact that almost 90 percent of their households belong to the first two PCMCE categories. Delhi turns out to be considerably better than both of them. Rest of the estimates is mostly on the expected lines with the share of households in lowest per capita consumption category being highest both in slums and in rural areas. This is true for the tribal and low caste households as well. Muslims trail behind the Hindus as was expected.

Besides low per capita monthly consumption expenditure, a large number of households also suffer from serious inequality issues. There are considerable disparities between the minimum and the maximum consumption levels of households or their mean consumption levels in all the three states under reference. The max-min differences are found to be the highest in Delhi.

Analysis suggests UP and its two districts are in a more distressing situation with larger shares of households falling below the poverty threshold level. This pattern is however true for rural UP alone. Urban UP and its districts have performed relatively better.

They also perform better than Delhi slums. An interesting observation relates to a significant increase in the fraction of below poverty households after netting out the health expenses. This is very clearly visible by making a comparison between the two head count poverty levels — i.e., with and without expenses on medical care. The most visible effect of private spending on health may be found in rural and slum areas where the health services are scantier. While certain marginal increase may be noticed in the fraction of poor after health care expenses are deducted from the total PCMCE in most of the urban places, their magnitude is far less than those in villages and low-income slum areas. Even after three years of the NRHM, rural health care is seen to hold a much significant place in cross-movement of a big proportion of rural people from poverty to non-poverty statuses and vice versa.

The poverty gap clearly reveals the negative impact of health spending on consumption standards of individuals and households. It also acts to drive low income people deeper into poverty and may cause an added financial burden in lifting them above their status of poverty. Conforming to some of our earlier results, we observe rural parts of UP at a more disadvantageous position, though Urban Rajasthan is no less problematic. Similarly, the tribal households are also in a difficult situation and health spending makes them suffer with greater poverty gaps.

Health spending – which appears to constitute in many cases a much larger share of non-food consumption expenditure-makes the situation worst. After dropping health spending from the consumption basket, a big fraction of households are left with deeper poverty gaps. The situation compounds when the results are restricted to the poor households alone. Also, unlike the general perception, a slight modification in definition and composition of the consumption basket make urban population - in particular its poor and tribal segments - look highly vulnerable. As a whole, two broad observations follow from most of the results. One, out of pocket health spending still remains a serious issue for a large number of people in both the states and also for the slum households in Delhi. Second, the poor remain highly vulnerable after they pay for their accessed health care services

themselves. What component (or components) of health spending brings greater vulnerability to the people is indeed a significant question.

A clear message emanating from the Lorenz curves and a series of Gini coefficients computed with or without OOP spending on health is that the consumption and health inequalities are severely higher at most of the places under study. All the Lorenz curves show steep gaps between the diagonal line of 45 degrees and the area under the curve. At worst are the health inequalities, implying a group of households without any expenditure on health care. But there is perhaps nothing very surprising in these results. Based on the consumption expenditure survey for 2004-05, almost a similar trend and loss of wellbeing was reported by the NSSO in its Report Number 508 (December 2006). If some of our results are little different from that of the NSSO (2006), it may largely be on account of certain minor technical differences or lack of conformity between the two samples.

Our results suggest lesser disparities in per capita consumption of non-food items. A point however to notice is the disparities shown in mean expenditure on health care. Barring to a certain extent in Delhi, health inequalities are strikingly higher in most places, particularly in areas of UP. These results show that health care is accessed quite unevenly in most of the places, with almost no or negligible amount of spending on health by a group of people and vice versa. It also works to generate a significant amount of inequalities in total PCMCE.

Borrowings for Health Reasons: Prevalence and Sources

The analysis of data on the share of indebted households in our sample indicates that majority of rural households (52.4%) are under cash debt in combined villages of UP and Rajasthan. Urban households with cash debt obligations are, however, much lower in size; little over a quarter (26.7%) of the total sample. Jhansi in UP and Dausa in Rajasthan in our sample are the most indebted areas – the latter shows the highest incidence of borrowings among the urban households, and the former counts highest in terms of rural indebtedness. For, whatever are the reasons, the tribal households have appeared to be the least indebted among the four social groups in rural areas. Of the remaining three, more than 50 percent of

each group has reported to be under debt at the time of the Survey. Even the upper castes are no exception. Hindus and Muslim do conform closely to each other at least on this count.

Two broad reasons have been given by the responding households to secure loans— medical and non-medical; the latter combines all categories of loans including those for purely consumption purposes as also those required to finance productive needs of the families. With the exception of urban Dungar Pur (Rajasthan), we notice that loans for medical reasons are quite prevalent in most of the areas under study. More than a quarter of indebted households in urban areas have reportedly been driven to come under debt because of certain medical exigencies. The same in rural areas turns out to be little over 19 percent. Does it mean that public health care facilities in urban areas are insufficient or is it a reflection of easier loan accessibility for urban households? While a categorical answer to both of these questions may not be possible with the data available to us, these are indeed significant issues and need to be examined separately in all requisite details.

Tribal and Muslim households are also ahead in loan borrowing in their respective categories. The role of private money lending appears to be especially large in rural areas where informal family sources appear to work less effectively - perhaps due to widespread poverty and cash flow constraints. A big majority of rural households had borrowed from private moneylenders. Interestingly, urban households are not very far behind either. Almost 52 percent of them had to borrow from local moneylenders despite a growing emphasis in public pronouncements to improve medical care through involvement of remodeled watch dogs like Rogi Kalyan Samities.

As it has generally been perceived, the presence of private money lenders in medical borrowings is considerably high. Also, it turns out to be the case in most of the areas and population groups in question. The results indicate a very urgent need for an institutional mechanism to finance the health care needs of low income households in the country. Apparently, anti-poverty measures may not work to their real potential unless health services are scaled up to a considerable extent in every domain, disease occurrences are minimized,

and the health care system is brought to bear to the needs of persons forced to borrow from private money lenders.

The analysis of data about loan repayment status of households, both under medical and non-medical debts, indicates that the number of households deficient in capabilities to initiate loan repayment process is disturbingly large across all the categories of responding households. This has been particularly true for most rural households in both the districts of UP, and among the slum dwellers in Delhi. Muslims and most social groups including upper caste categories also fall in line. Rural-urban differentials in loan repayment reveal that rural households and most other economically backward households may not be able to initiate the loan repayment process immediately. A cooling period may be required by many of them. This may or not be possible depending upon the source of the loan. How far the micro credit institutions could lend support under these circumstances has to be considered. In addition, whether the micro-credit institutions can lend small amounts to meet medical contingencies also needs a detailed examination.

Differentials in Utilization of Health Care

There is a significantly large share of women in utilization of hospitalized treatment. In addition, it is true for non-hospitalized care as well. The reasons for an excess of health care access by women over men in this analysis is however not very difficult to identify. Our sample is inclusive of women in child bearing ages as well, and the overall hospitalization cases are based on all forms of ailments including pre or post natal care, delivery and gynaec-obstetric problems with most other normal health related issues and injuries. The same explanation holds for the non-hospitalized cases as well. This point is reiterated further by a perusal of the distribution of women accessing health care (both hospitalized and non-hospitalized) across five broad age categories: 0-4, 5-14, 15-39, 40-49 and 60 or over. We notice from this distribution that the share of women in 15-39 age groups – normally considered as prime years in the reproductive life span of women - is highest followed by those in 5-14 and 40-59 age groups.

The Survey results reveal that utilization of health care services by the poor (BPL) households — with or without hospitalization — is considerably less than the non-poor (APL). However, it may not be easy to comment on the correctness of these findings because of limitation in self reported morbidity by poor and illiterate and less informed households. It simply underscores the general observation of positive links between economic status and a better sense of suffering or ill health leading to a better reporting of ailments and utilization of in- or out-patient health care services.

Gender-wise differences in hospitalization are considerably large in both the districts of Rajasthan. The highest rate of women hospitalization may however be noticed in Delhi slums. The non-slum women too are in good numbers though they lagged behind their slum counterparts to a good extent. A possible inference may therefore be made that women at most of the places have begun to use institutional services for different reasons and their numbers may grow further with time, though such evidence is relatively weak in both the places of U.P. Muslims and tribal women are also some what lagging.

A men-women comparison of health care utilization across comparable age brackets reconfirms the male bias at least in early ages. The situation turns in favour of women in 15-39 age groups with higher child-bearing potentials. Women in 60+ age groups are also prone to more hospitalization than men. However, a generalization of these results may need further evidence based on larger sample size.

Non-poor utilize hospital care in greater proportions than the poor. But this is not decisively so in out-patient care and, in certain areas, poor outnumber non-poor in accessing physicians' care. This may particularly be noticed in Rajasthan. In U.P., however, non-poor appears to have greater access to non-hospitalized care as well and contribute to the general thinking that medical care and economic status go side by side.

As a whole, our results do confirm the existing notion of gender biases in utilization of health care with females, in general, at a disadvantageous position. However, if disaggregated over different age spans, our results indicate that younger women in their

prime child bearing ages have accessed health care in higher percentages than their male counterparts. This is indeed a somewhat interesting indication, and need to be re-examined with bigger sample size and more focused survey instruments detailing the causes of health care utilization.

The issues relating to the access of health care by poor and non-poor turned out to be more straight-forward and on expected lines. It may be noticed from our results that the poor lag considerably behind the non-poor in reported utilization of health services — both in- and out- patient care. Similar results have been obtained in most of the literature on rich-poor differentials in consumption of health services, particularly in India and its neighboring South Asian countries where public delivery of health care is both inadequate and less efficient.

Health Care Utilization and Disease Prevalence

Gender-wise differentials indicate a significantly large share of women in utilization of hospitalized treatment. It happens almost across the board. More or less the same is true for non-hospitalized care as well. The reason for an excess of health care access by women is the fact that women in child bearing ages utilize the health care facilities for pre or post natal care, delivery and gynecological/obstetric problems along with most other normal health related issues and injuries. The same explanation holds for the non-hospitalized cases as well.

This point was further reiterated by a study of age distribution of women accessing health care (both hospitalized and non-hospitalized). We notice that the share of women in 15-39 age groups – normally considered as prime years in the reproductive life span of women—is highest followed by those in 5-14 and 40-59 age groups. Gender-wise differences in hospitalization are considerably large in both the districts of Rajasthan (2.8 for men and 3.2 for women in Dausa, and 2.6 for men and 4.9 for women in Dungerpur). The highest rate of women hospitalization may however be noticed in Delhi slums where it turns out to be 5.7 percent. The non-slum women too are in good numbers though they lagged behind their slum counter parts to a good extent. A possible inference may therefore be that

women at most of the places have begun to use institutional services for different reasons and their number may grow further with time, though such an evidence is relatively weak in both the districts of UP.

Muslims and tribal women are also somewhat lagging. Healthcare utilization among males is comparatively higher in early ages. The situation turns in favour of women in 15-39 age groups who are in the child-bearing ages. Women in 60+ age groups are also prone to more hospitalization than men. However, a generalization of these results may need further evidence based on larger sample size. It may be noticed from the results that fraction of poor (BPL) households reporting utilization of health care services — with or without hospitalization — is considerably less than the non-poor (APL).

Spending on Health Care

Examining the size of health care expenditure by households in relation to their (i) total consumption budget comprising market goods and services, and (ii) non-food consumption expenditure, our results fail to compare with a few of the earlier studies suggesting an average of about 5 percent of the total consumption budget (and 10 percent of the non-food consumption budget) on OOP health care in India. Our data indicate a considerably higher OOP mean spending on medical bills in all the three states and their selected villages or towns. Also, this lack of comparison continues both in relation to total as well as non-food consumption budgets.

The mean OOP share of rural households is considerably large. Further, it exceeds the urban share as well. Among the rural households, for example, the mean OOP expenditure varies between 14 and 15 percent of the total budget. The same in the urban areas is drawn between 10.5 to a little over 11 percent. It may also be noticed from these results that the people from slums have on average spent a much larger share of their consumption budget than those from the non-slums (14 percent by the slum residents compared to only 9 percent by those from non-slums). It strongly suggests a regressive nature of spending if we could assume that all the non-slum households are essentially more affluent. This also reflects a significant departure from the existing body of evidence that suggests that the poor pay less than the non-poor.

We are nevertheless closer to the existing literature if we compare the mean OOP spending of households by consumption quintiles. While the magnitude of spending remaining large, the OOP shares of rich and poor differ significantly with highest quintile (or top 20 percent of households according to their PCMCE) spending almost a quarter of their total consumption budget on health. In contrast, the same for the bottom 20 percent is about 10 to 12 percent in rural and urban areas. The progressivism, as argued in the literature, is therefore maintained.

OOP differentials among four social (SC, ST, OBC and upper castes) and two religious categories — Hindus and Muslims—reveal that the lower castes communities incur a much higher OOP payment than their upper caste counterparts. In terms of religion the differentials are marginal — i.e., less than a percentage point (Hindus 13.5 percent of their total consumption expenditure while for Muslims it is given as 12.3 percent). The progressivism among 5 consumption quintiles has also been maintained.

A very high variation around the mean OOP has been observed. At almost every quintile level or socio-religious grouping, the coefficient of variation is more than 100 percent, which tends to indicate extreme values at almost every level, quintile or social groups. It also amounts to suggest that there are households in each category with negligible spending on health services — inpatient or ambulatory.

The differences between the two sets of results — our own and those in the literature cited above — raise an interesting question: do studies based on macro data, often regarded as more policy friendly, really provide the realities faced by impoverished households from poor districts or geographical locations? In all fairness, perhaps both have their own merits and ought to be supplemented by each other.

With the mean of OOP expenditure very high in relation to total consumption expenditure, the same in relation can easily be guessed for non-food consumption expenditure. It touches around 30 percent of the total in rural areas and 20 percent in urban

areas. In other words, the mean of OOP in relation to non-food expenditure is likely to stand double to that of the total consumption expenditure. The rest of the results follow exactly the pattern exhibited above and, therefore, bear more or less similar explanation.

Catastrophic Health Expenditure by Households

Using multiple threshold levels for both the catastrophes — total consumption budget (catastrophe 1) and non-food consumption budget (catastrophe 2) — the results clearly indicate that an overwhelming share of sample households have been facing serious catastrophic situation because of high out-of-pocket expenses on health. At the lowest threshold level (i.e., the health budget over 5 percent of total consumption expenditure), there are more than 67 percent of the rural and 51 percent of the urban households exceeding this limit. The same at the 10 percent threshold level, which is generally considered as a catastrophic health spending by most of the analysts, it turns out to be 49.5 percent in rural areas and 32 percent in urban areas. Furthermore, our results indicate that almost a fifth (18.5%) of the rural households and over a tenth (11.6%) of the urban households spend more than a quarter of their total consumption budget on health care. It reflects the inadequate rural health care services provided by the government. Lower caste people, particularly the Scheduled Castes (SC) communities, are also in the quandary for the same reason. Curiously, share of Muslim households incurring catastrophic spending on health are marginally lower than the Hindus. How far does this happen? Is it because of their insensitivities towards poor health? Or does it indicate their lack of resources to access health care? It could not, however, be judged on the basis of these results. Delhi slum residents are to some extent insulated because of better health care infrastructure in and around the capital city and, as a result, a lesser fraction of them are found incurring catastrophic payments. Deviations around the mean are relatively smaller at the higher threshold levels and vice versa.

Catastrophe head count 2, computed on the basis of non-sustenance (non-food) budgets of sample households, repeat the same grim reality and reiterate further that the rural households are worst affected due to inadequate health care infrastructure by the government. The lower caste SC households are at their worst. Very big percentages are shown to be incurring catastrophic payments, causing them to suffer from serious and highly

disproportionate loss of well-being. Interestingly, the study areas chosen from both the major states (UP and Rajasthan) are mutually close to each other in terms of their population shares facing consumption catastrophe due to private health payments.

One of the more alarming observations stemming from the preceding results is a considerably large fraction of households paying more than 60 percent of their non-food budget on medical care. In a situation like this, would it be possible for these households to come out of the morass created by their OOP payments? It's indeed a serious issue and warrants contemplating immediate remedial action by policy institutions like the Planning Commission. It also requires enhancing existing health care infrastructure, particularly in villages and low income areas of UP and Rajasthan. Our results also indicate very high variation around the mean values.

Intensity of Catastrophic Payments: Mean Positive Overshoots (MPOs)

Defined as the amount of excess payments (or overshoot) by which households exceeds catastrophic threshold, the analysis suggests that those paying over 5 percent of total consumption expenditure on health care, on an average spent 20.6 percent — i.e., (5% threshold level) + (15.6% overshoot). Similarly, those at threshold level of 15 percent of non-food budget, actually spent 43 percent (15% + 28%), which is indeed appalling. Interestingly, the mean overshoots turn out to be considerably large in most of the cases, irrespective of their residential pattern. This is true for households in non-slum areas of Delhi as well. While there are indications that the rural and slum households are exceeding their threshold limits considerably at a few specific values (e.g., at 15% and 25% of non-food budget shares, and 25% at the level of total consumption expenditure), there is however no specific pattern to suggest a clear cut differential across households drawn from various states and socio-religious categories. Coefficients of variation indicate large intra-household variations. It also indicates a good number of households with no or a negligible amount of spending on health.

Drugs and Medical Services in OOP Health Spending: A Decomposition of Households' Medical Budget

The distribution of OOP spending on drugs and other health care components shows the primacy of drugs in overall health care budgets. This has been noticed across all the sample of households — rural, urban, slum or non-slum—and irrespective of the districts or states they were located. Our results confirm largely the earlier findings on the subject (Sakthivel, 2005) suggesting more than three-fourths of the money spent on health is invariably going to the allopathic medicines.

Almost a similar distribution pattern of health budgets is observed across all the study areas with around four-fifths of the total OOP expenditure going to drugs followed by another 5 to 10 percent (depending upon rural-urban and in- or out-patient treatment) of the total expenses going to medical practitioners as their consultation fee. Expenditure on diagnostics remains in most cases between 5 to 7 percent of the total budget, and almost an equal amount is devoted to meet a few sundry expenses, especially transportation.

Between the groups of households drawn from UP and Rajasthan, share of money spent on consultation fee is shown to be much higher in the former, particularly in episodes requiring hospitalization. Relatively, however, their expenses on drugs are much less. Both of them however follow almost a similar expenditure pattern in cases where hospitalization was not required.

Moving to the OOP distribution for slum and non-slum households in Delhi, the former are almost at a competing edge with the latter in terms of their percentage expenditure on drugs and two major medical services, namely consultation and diagnostics. Rather, their share of expenditure on consultation fee is relatively higher – 2.7 percent as against 0.5 percent for the non-slum households. Also, they have shown to incur a larger share of expenditure on transportation than the non-slum households.

The results tend to portray certain degrees of equity between the slum and non-slum households in distribution of their health budgets. Two significant questions emerge from

these results: (i) does this equity represent certain peculiarities of Delhi alone or is it a wider phenomenon, and poor in general encounter similar situation in other places as well, and (ii) is there a safeguard to protect them?

Regarding the second question, safeguard perhaps lies in pooling the risk and offering certain form of health insurance mechanism — if not to all, at least to the poor. Another important safeguard derives from lowering inflation in the drug sector and pro-poor negotiations in the WTO. Particularly, most generic medicines and formulations need protection from strict patenting and royalty laws. This is particularly essential because of a very large share of medicines in overall household budgets on health.

Share of Drugs and Non-Drugs: A Distribution by Consumption Quintiles

Analysis of data reveals that the poorest 20 percent seeking out-patient treatment have spent a greater share of their health budget on medicines than any other quintile group. Further, it remains true for all the places covered in the study. Drug share of these households varies between 80 to 90 percent of the total and remained particularly higher among the slum and rural households. All other quintile groups spent a lesser share, although their differences in many cases remained marginal. Poorest groups have also spent in certain areas (slums and towns in UP and Rajasthan) a larger share of their health budget on medical consultation. The situation is however slightly reversed when it comes to hospitalized treatment. Nevertheless, the differentials are invariably small and the richest appear to have drawn certain advantages over the lower quintile groups.

A significant observation is that the poorer quintiles (poorest, next 20 percent and middle) are not only spending heavily on drugs and medicines, they also spend a considerable part of their budget on consultation and diagnostics. It may be noticed even in cases of hospitalization. A possible explanation may be: (i) people do not necessarily rely on public hospitals even if they require hospitalization and (ii) many diagnostic services in public facilities are on payment basis. Also there are chances of doctors in public hospitals going for moon lighting, especially in UP and Rajasthan.

Share of Drugs and Non-Drugs in OOP Budget: Catastrophic Households

The results highlight drugs as the single expenditure item with highest budget share (almost 80 percent of the total and above) followed by diagnostics and medical consultation. It is also interesting to note that in a few cases the share of expenditure incurred by rural households on transportation is relatively higher than the shares on medical services. In other words, it is an indication of poor access to medical facilities closer to some villages.

Another interesting observation is that the poor and slum dwellers spend in many cases a much larger share of expenditure on drugs and other medical items than the non-poor. And yet in no way these results imply that non-poor do not spend on health. They largely follow a similar pattern with a maximum of their health budget going to drugs and diagnostics. How far do they suffer in terms of their welfare losses due to these payments or to what extent their welfare losses differ with similar losses suffered by the poor may not be conjectured with the help of the data of the present study.

With all the differentials observed across the households, a point of major policy concern that emerges from the underlying discussion is: how to reduce the size OOP health care budget and shield poor households against high costs of drugs and medical services? Besides risk pooling and universal health insurance coverage, two other solutions may follow. First, a strict drug control policy coupled with a judicious demand-supply management of pharmacy products. And second, an improved health care delivery mechanism in public hospitals and facilities. It requires a well designed strategy to deploy medical personnel at different medical units, places, hospitals and dispensaries. Currently, physicians and medical personnel are deployed for several non-clinical activities as well. They are in many cases governed by the district administration and pushed regularly to serve politicians or day to day political events. All this makes their availability to essential clinical activities or designated hospitals scarce, and force ailing people to rely on private practitioners.

Correlates of Catastrophic Health Spending: A Probit Regression Analysis

Drawing upon the results indicating a very high incidence of catastrophic health spending by households in most of our study areas, we tried an econometric exercise based on a probit analysis to examine some of the major risk factors that are likely to build into the perils of such eventualities. The exercise was basically designed to highlight the latent characteristic/s of the households that may potentially be able to germinate into a catastrophe owing to certain beyond-a-point spending — in our case this spending relates to health. To ensure brevity, we have confined our estimations to only catastrophe 1, defined in relation to total (food and non-food) consumption expenditure of households. In addition, we have also restricted this exercise to only the lowest ($z = 5\%$) and the highest ($z = 25\%$) catastrophe thresholds. It may inter alia help us to examine if there are differences in factors related to the probabilities of having lower and higher catastrophic events.

The results indicate the effects of individual variables on the probability of having catastrophic spending by households in events of sickness episodes requiring in or out-patient care. Among all the variables, the per capita household consumption expenditure, which is generally considered as representing the economic status of the households, turns out to be one of the most significant correlates of catastrophic spending. Although household size does not prove to be significant, the sign of the variable clearly indicates that the probability of making catastrophic payments increases with increase in household size. Households with brick-made pucca houses have greater probability of making catastrophic payment at only 5 percent threshold level but have strong lower probability of such payments at higher thresholds such as 25 percent or more. In general, better living conditions in terms of drinking water and sanitation facilities lead to reduced probability of making catastrophic payments by households.

Socio-economic and religious background of households reflect a mixed picture, with a strong indication that secondary level education leads to lowering the probability of catastrophic payments. Higher workers ratio in households (i.e. lower burden of economic dependency) leads to lowering of the probability. It may as well be because of some sorts of

contributions from employers to health expenditure of households. However, the households with casual workers in social employment programs such as NREGA, as compared to those who do not participate in the NREGA scheme, do not enjoy the facilities of the employer's contribution and, therefore, run higher risks of making catastrophic payments. Further, the results clearly indicate that households belonging to lower castes and non-Hindu categories run higher probability of catastrophic expenditure.

With increase in the average age of family members the probability of catastrophic payment increases at the 5 percent threshold level but becomes insignificant at the higher thresholds. The households with infants and children below the age of 14 years have higher risk of making catastrophic payments at 5 percent threshold while most of these demographic variables are not significant at the higher threshold of 25 percent. The locational factors such as state and region indicate a comparatively vulnerable situation of households living in the remote and poorer regions. As compared to non-slum areas of Delhi, households in all other areas in our sample show a strong and positive association with probability of catastrophic payments. The relationship becomes even stronger with the higher threshold of 25 percent.

Utilization of Public Health Facilities

The analysis shows a very high dependence of households on private facilities despite creation of a vast public financed health care infrastructure in most rural and urban areas. Alarming, this dependence holds for most rural and low income areas covered in the study. Moreover a considerable share of poor population from the lowest quintile also appears to have relied on private providers. Catastrophic households follow a similar pattern. Furthermore, even the hospitalized treatment, where public sector had an edge, is losing its earlier sheen.

The share of private providers is particularly higher in U.P. where almost three quarters of both rural and urban health care seekers have relied on private practitioners for their routine outpatient care. Interestingly, this share has turned out to be relatively smaller

in the remaining states with the lowest in Rajasthan followed by Delhi. Nevertheless, nowhere the share of private practitioners in out patient care drops below 50 percent. It would be imperative for all the stake holders, in particular the health administrators, to raise the level of health care utilization in the public sector.

Contrary to the out patient services, public facilities appear to have a greater role in providing hospital care at most of the places under reference. The utilization of government hospitals is invariably higher among the tribal, low caste and low income people, especially from the slums and rural areas. Unfortunately, however, it doesn't prove to be conclusively so as quite a bigger fraction of inpatient care accessed by the people from non-slum and urban areas of Delhi and UP have been delivered by private hospitals and nursing homes. This is as well true for those belonging to the upper caste groups in the sample. These variations apart, it needs to be admitted that the public hospitals not only serve a big fraction of people from different strata and residential areas, they also serve to regulate the overall functioning of the private providers in more ways than one.

Distribution by Quintile Groups

A big majority of the outpatient care seekers, even from the two poorest consumption quintiles (bottom 20% and the next 20%), largely relies on private providers. It may imply that no amount of economic hardship makes even the poorest to feel adamant to use the private facilities. The other observation though reconfirms to a large extent the primacy of public facilities when it comes to hospitalization, underlies the fact that even the poorest may not be able to rely solely on public hospitals. The results reveal that a good fraction of persons from the two lowest consumption quintiles had to receive care from private providers. Admittedly, while such fractions may not be used conclusively to vindicate certain line of arguments, they however make out a case to go into such instances further and deeper. These are also the issues to be taken for consideration by the Rogi Kalyan Samities or such other patient welfare bodies currently working at the district and sub district levels.

Distribution by Catastrophic Households

It may be interesting to note from the profile of recipients of medical care with or without hospitalization, that catastrophe is not entirely the outcome of private hospitals or private medical practitioners. It occurs to patients of public facilities as well. In non-hospitalization cases, it mainly results because of private providers, from little less than two-thirds to over 73 percent of the total cases. In addition, it holds alike both for the rural and the urban areas. Contrasting to this, it is also revealed that hospitalization driven catastrophe is also generally higher among the patients treated in public hospitals. This is particularly true for the low-income households. Somewhat disappointing, but public medical facilities are shown to have pushed a good majority of rural and slum households to face catastrophe. Besides, these results also indicate that a fraction of public hospital patients have also ended up with most oppressive form of catastrophe ($z = 25\%$), presumably because many of the services in public hospitals are now on payment basis. These are over and above the cost of drugs and medicines – some of them may not be essential.

While some of these results are constrained by a limited number of observations, they appear to be still useful for drawing a few inferences at the policy level. Two issues are apparently more significant on policy considerations and may need to be discussed at length. First, why even those who were treated for ailments in public hospitals and other facilities could not save themselves from catastrophe?, and second, why many low income slum and rural people don't go to the public facilities? In other words, what makes many of them wary of public facilities? A related question may as well be: is the National Rural Health Mission (NRHM) believed to fill many of the voids in rural healthcare system, or able to induce people to rely more on public facilities?

Factors in Non-utilization of Public Health Facilities: Respondents Views

Those who preferred not to access public hospitals facilities found justification in four commonly known reasons: (i) public facilities are too far (ii) public hospitals are inefficient (iii) most drugs prescribed by the in-house doctors are either out of stock or for self-purchase, and (iv) public hospitals are invariably very crowded. While most of these factors are fairly known and oft repeated, it may be noted that medicines and efficiency in

service delivery by public facilities are the two major expectations that need to be ensured by the government and its health apparatuses.

Another point to be noted in this context is that despite these perceptions, a very small fraction of respondents had complained against doctors' behavior or growing burden of paid hospital services. Apparently, efficiency in service delivery and subsidized drugs may act to bring substantial relief to a large number of low income health seekers in public hospitals.

Similarly, patients needing non-ambulatory (or outdoor) care have also held three major constraining factors responsible for non-utilization of consultation services provided by primary or secondary health centers or city hospitals. These are: (i) misbehavior by hospital staff including doctors and paramedics, (ii) distant locations of public facilities, and (iii) overcrowding and non-availability of drugs. It implicitly suggests that the users of health care facilities tend to substitute public healthcare in favor of the private providers owing to some of these basic constraints. Particularly, non-availability of drugs and a drag on time are the two serious issues for many low income health care seekers. And yet it seems that the time factor remains diluted when it comes to hospitalization. Yet another interesting observation relates to the affordability as a criterion to access private medical care. Many of those who decided not to utilize the public facilities were able to afford the cost of private consultation. In other words, there is a possible trade-off between the private and public healthcare facilities — largely because of the latter's inefficient service delivery, non-availability of medicines and cost of transportation.

Role of National Rural Health Mission (NRHM)

The Survey revealed a low level of awareness about NRHM as smaller fractions of people from both the states, in particular from Rajasthan, knew about the NRHM or the priorities attached to improved child health and institutional delivery. Between the two states, residents of Unnao and its villages appear to be better informed about the NRHM. About a fifth of the total respondents in Unnao have reported their awareness about the Mission. The same in Rajasthan was below 10 percent. People from upper caste categories

and economically better-off respondents (e.g., above poverty or higher quintile households) have however shown a greater awareness about this programme and a couple of its intended objectives, although even their shares do not exceed beyond a fifth or a quarter of their respective numbers. Interestingly, however, despite so much of unawareness about the NRHM or its basic concerns, a much bigger fraction of respondents have not only reported satisfaction with the services provided by the primary health units, but have also reported visible improvements in delivery of health services over the preceding two or three years. To be more specific, they further confirmed improvements in services covering reproductive and child health. On the flip side, these responses have remained considerably large across all the households distributed according to their socio-economic (social groups, quintile groups, etc.) characteristics. Even the two categories of catastrophic households, mild and severe, have also felt the same way. Some other interesting observations stemming from the survey data include:

- PHC doctors visit regularly; it was reported by more than 80 percent of the respondents.
- ASHA workers already in place; confirmed by almost three-quarters of the sample households.
- Between 30 and 64 percent of households from different socio-economic and religious categories has received help from the ASHA workers. Interestingly, shares of low income and catastrophic households among them were considerably large.
- As for vitamin tablets, ORT or some other common medicines, respondents agreed to have received them from the health workers and their PHCs.
- Barring a sample of households from Dunder Pur (Rajasthan), economically better-off and higher caste households, very small fraction of respondents have used AYUSH services. The share of AYUSH users remain invariably below 20 percent of the respective samples. Muslims and residents of Unnao are the worst off on this count.

From the findings of the Survey relating to NRHM, which may have partly suffered because of limited time gap between its initiation and this study, two diametrical messages are emerging. On the one hand a large share of responding households (even a majority in many cases) do not find it worthwhile to rely on facilities provided by the government,

particularly for non-ambulatory or out-patient care. On the other, we notice that rural people did appreciate the services provided by the primary health units. They also report favorably about the PHC doctors, ASHA and certain qualitative improvements in rural healthcare services since the NRHM. The question then is: why so much of health related catastrophe or apathetic attitude among the service users towards public facilities? Answers appear to lie at two levels: First, rural healthcare has largely been confined to a particular age segment. In addition, it restricts to a particular health domain as well. A number of diseases falling beyond the reproductive health and its domains have remained poorly managed. As those diseases cause catastrophe to a very large extent, government will have to consider ways to bring significant improvements in delivery of secondary and tertiary healthcare services as well.

Conclusions of the Study and Policy Directions

Major Findings

Most of this analysis was broadly directed to focus on following concerns: (i) OOP health payments and attendant issues of poverty and inequality, (ii) catastrophic health payments and some of its correlates, (iii) decomposition of health payments and share of drugs/medicines in total health expenditure, (iv) share of public health services in hospitalization and out-patient care, (v) public health care utilization and catastrophic payments, (vi) extent of untreated ailments mainly because of high health care costs, (vii) attention generated by the NRHM among the rural households and their views on recent improvements in delivery of health services, etc.

Revolving around the issues noted above, a number of observations have been drawn. One of the more critical perhaps was the role played exclusively by the OOP health payments in adding to the overall poverty level and bringing vulnerability to a significant fraction of the rural and slum households. It was also noticed that households at the fringe of poverty level may easily shift their economic status from above to below poverty level due to no or very limited affordability in terms of health payments. An analysis of household indebtedness in Chapter 3 has shown that more than a quarter of indebted urban households

had borrowed to meet medical exigencies. The same in rural areas turns out to be little over 19 percent. Chapter 3 also indicates a big share of private money lenders in those borrowings. Does it mean to suggest that the health care services in the country are not affordable in their present form by a significant percentage of households? While a categorical answer to this question may need further and more in-depth studies, this is indeed an issue that needs to acquire a greater consideration, especially from the health policy mandarins.

Moving to the issues of catastrophic health payments, this analysis indicates that the catastrophe cut-off levels, as frequently used in the international literature, make no or a very limited sense for the observed sample of households. This is to a greater extent true at the higher cut-off levels. With the share of non-food consumption expenditure in many cases as low as observed in the present analysis, any fraction of OOP health expenditure may not only look catastrophic, it would rather overshoot the defined catastrophe limit. Yet another significant observation in this context was that even the users of public healthcare facilities are not able to save themselves from catastrophic payments.

These results ultimately raise a very basic question: what component/s of health spending drives the households to face a catastrophe? Intuitively, this question may have a role in pinning down a few policy interventions to minimize the catastrophic incidences. In a response to this question it was attempted to compute the shares of (i) consultations fee, (ii) expenditure on drugs and medicines, (iii) expenses on diagnostics, and (iv) cost incurred on commutation and other related expenses in total health expenditure of households under study. In a large number of cases, our computations reveal drugs as the biggest expenditure, and in some cases it turns out to be around 90 percent of the total health budget. Even in normal situations, drugs and medicines account for over three-fourths of the total OOP spending on health. This result is in consonance with some other studies recently conducted at the all India level. This raises many serious issues from the view point of policy. Two factors need to be seriously considered. First, most public medical facilities do not provide medicines to their patients including the poor patients. Even in many cases, these facilities expect service users to provide sundry items like cotton or bandages. These are in addition

to items such as registration fee, costs of various diagnostic tests and transportation. Besides being a push factor to catastrophe, it also dissuades even poor service users to use public facilities, especially in non-hospitalization cases. The second relates to the drug pricing, and growing concerns have already been raised in many national and international literature regarding the World Trading Organizations (WTO) Agreement on Trade-Related Aspects of Intellectual Property rights (TRIPS). These negotiations and agreements have clearly set minimum standards for the protection of intellectual property. It has also helped to generate considerable gains for the pharma companies.

Where does the solution lie? This is perhaps a complex issue and requires a deft handling of TRIPS negotiations along with a serious policy make-over in regard to making medicines available to the patients at subsidized prices. To be precise: would it be possible for the government to find enough resources and to provide medicines? While a clear cut answer to this question may not be found in this analysis, it may however be pointed out that all the three, i.e., the OOP health expenditure, most of its attendant issues, and the drug pricing, are mutually inter-linked. And, therefore, none of them may be decided independently.

Somewhat alarming but a fairly known issue in the context of health delivery is the poor utilization of public health care facilities by health seekers – both ambulatory and non-ambulatory. Reasons remain primitive, long hours of wait, non-availability of drugs, poor outreach, lack of emergency services in local (village level) health centres and improper behavior by the medical staff. And yet, a number of respondents have been disposed-off fairly well and have started taking note of the NRHM and its services. There has especially been a positive response towards the role played by the ASHA health workers, availability of PHC doctors and distribution of certain medicines required by women and children. How far the mission is able to cover the health care needs of those in non-reproductive ages is not clear from this study and, therefore, an area worth of exploration in future research. The incidence of catastrophic health spending raises doubts about the versatility of the NRHM. Also there appears to be very limited utilization of consultation facilities provided by the AYUSH practitioners in many healthcare centres.

Respondents' Views on Critical Policy Issues

Survey respondents were basically asked to comment mostly on issues on which they were expected to have a better understanding. A few of those respondents, especially in rural areas, were also given certain background information, particularly on operational aspects of health insurance. Some of the more important questions included: (a) you feel that the health services have become costlier over the past one year? (b) Do you think doctors generally over prescribe medicines/diagnostic tests? (c) In your opinion, would a low premium health insurance be a workable solution, and finally (d) If required, would you be willing to subscribe to such an insurance scheme? The last two questions were asked against the backdrop of a recent initiative by the government to launch a Rashtriya Swastha Bima Yojna (RSBY) for a segment of the below poverty households.

A large number of respondents, almost 8 to 9 out of ten, have agreed that the health services have become expensive by more than 50 percent over the preceding 12 months. When asked about the health insurance, it may be interesting to notice that those with better access to health care do not mostly subscribe to the idea of buying an insurance product. We notice from the discussion in Chapter 8 that the (i) richest quintile, (ii) Delhi respondents, and (iii) upper caste persons have favored such a scheme in much smaller fractions. Those who endorsed the health insurance idea were however in majority among other categories of respondents including the rural and urban households of UP and Rajasthan. Almost a similar response has emerged from the last question – Would you be willing to join an insurance system on self-payment basis? Following from the earlier question, those with better access or affordability to health care largely showed disinterest. Others have however favored. But still, it may be surmised that a self-paid health insurance is a strong possibility if the government is able to regulate the system well, particularly against the menaces of exclusions and cartelization among medical professionals, service providers and major pharma companies.

Policy Directions

There is an indication from the results that the supply side management of the health market in India remains mired because of the growing dependence among health seekers on private providers. In several cases, public sector facilities do not prove to be a close substitute to the private providers. This is particularly true for out-patient services. Even in hospital services, a large segment of people depend on private providers. All these affect the private medical services and their price determination system. This has aptly been summarized by the respondents when they report over 50 percent escalation in their medical budget over a brief period of the past 12 months. A related point may be noticed from the perception that doctors over prescribe medicines. Does it reflect certain laxity in administration of medical rules? Also there is a serious problem with the medical ethics in the country. Medical profession is now largely guided by corporate practices with the core objective to maximize profit through increased occupancy rates or patients' consultation. An apprehension has also been made that the RSBY may further aggravate the situation, particularly for the uncovered families. Health policy makers may have to take some of these factors into consideration to bring down the cases of catastrophe. Public facilities will have to become efficient, client responsive and a close substitute to private services. The recent initiative to appoint Rogi Kalyan Similties will have to be strengthened.

Patients of public hospitals facing catastrophe need to be examined. Drug pricing and availability of essential drugs to patients in public facilities warrant serious consideration. Deployment of manpower and management of public hospitals need considerable fine tuning. Especially, there is a need to minimize non-clinical responsibilities of medical doctors in most public facilities. If at all viable, certain hours may be fixed in a week for every medical doctor to devote to their clinical responsibilities. Poor patients-doctor or patients-health worker relationship is a perennial issue and needs serious consideration. Medical ethics is another area to bear serious consideration.

Beyond all this, perhaps a most potent issue for consideration is to work on a comprehensive risk pooling arrangement, covering both in and out-patient treatments. While the RSBY is apparently a good initiative, it simply covers a very small segment of poor population (roughly 12 million). In addition, it's directed only to the hospitalization (including day care) cases. Given a very high prevalence of ailments requiring non-ambulatory care — around 15 percent as against 2.5 to 3 percent requiring hospitalization — the non-coverage of out-patient care may leave most of the problems unresolved. Moreover, our study has highlighted that expenses on out patient care has been equally catastrophic in nature, which is worth covering under schemes like the RSBY.

Patenting rights, TRIPs and TRIPs Plus negotiations require very serious understanding about the health status of the country's population. To achieve some of these objectives, there is a very strong need to undertake a series of micro-level studies to know about the health status of poor and low income people, especially from economically low performing districts and states

Chapter 1

Introduction

For over past sixty years or even more, health has perhaps been among the few issues in India that has received unceasing attention from planners, intellectuals and the Indian leadership. Plagued by the unacceptably high levels of morbidity and mortality, and malnutrition, low standards of public health, short life expectancy (both at birth and at later stages of the life span), poor access to health care services, (particularly in rural areas) there has been a series of attempts at various levels to find ways and means to help bring about a turn around in the situation. One of the earliest attempts in this direction was initiated years before the country gained independence from British rule in 1947. A Health Survey and Development Committee were constituted under the chairmanship of Sir Joseph Bhore¹ as far back as 1943 to suggest measures for improvements in delivery of health care to a vast populace in the country, especially in rural areas. The network of the primary and community health centers that exists now in most of the rural areas draws its origin from the recommendations of this Committee (1943-46).

The Bhore Committee was followed in subsequent years by a series of other high powered committees and commissions² and, more recently, by the two National Health Policies (NHP) — the former was adopted by the Government in 1983 with a focus on health for all by 2000, while the latter was legislated in 2002 with an explicit recognition of strong linkages between health and the overall growth objectives of the economy. Despite these concerns and a series of policy initiatives over the past decades, health remains a critical issue with a growing concern in recent years about the high burden of diseases, premature deaths and functional incapacitations; all of these cost the nation dearly both socio-economically as well in terms of its international rankings.

Some of these concerns have further been highlighted in a detailed report prepared recently by the National Commission on Macroeconomics and Health, constituted by the

¹ For more references, see, <http://www.nihfw.org/ndc-nihfw/html/Committe>.

² A few of these Committees, include Mudaliar Committee (1959-61), Chadha Committee (1963), Mukherjee Committee (1966), Kartar Singh Committee (1975) and subsequently the first National Health Policy adopted by the Parliament in 1983 with a focus on health for all by 2000.

Government of India under the chairmanship of Mr. P. Chidambaram and Dr. A. Ramadoss, Union Ministers of Finance and Health, respectively. The Commission submitted its report in 2005 with a comprehensive review of major health issues and the contemporary situation in the country. The major issues raised by the Report include inadequate health expenditure by the Centre and state governments, inefficient delivery and poor utilization of health services delivered by most public healthcare services, demand-supply mismatch of medical professionals including paramedics and grass root health workers. The other issues highlighted are rising drug prices which are expected to grow further under the new patent and intellectual property rights regime (TRIPs – Plus), disproportionate burden of health cost on poorer households with far reaching implications for their economic security and levels of consumption expenditure — both food and non-food. Drawing upon inferences based on recent health surveys, the Commission’s report is among the few public documents which have clearly agreed that the private out-of-pocket (OOP) health expenditure often pushes low-income households to face catastrophe and force many of them to slip below the poverty line. In many situations, it may as well clog intergenerational flows with severe implications for the co-residing old, especially women.

1.1. Existing Health Situation: A Few Stylized Facts

Of late, and with the resurgence of the market forces in countries like India, health has increasingly been considered as one of the causal factors with a decisive role in fostering growth and development. This recognition has also promoted a wider debate among health professionals and economists by linking health with individuals’ overall economic well-being and, in particular, with their poverty status. As an offshoot, this debate has also been directed towards conjuring up the question whether poor health leads to poverty or of it is a symptom of poverty.

Although the health-poverty nexus and its surrounding debate has never been without its takers in India (Dreze and Sen, 1995; Fuchs, 1986; Behrman and Deolalikar, 1988; Osmani, 1990) ; it came to its greater visibility, especially at the policy level, only after the Cairo International Conference on Population and Development (ICPD, September

1994). This recognition was reiterated further in two subsequent policy documents of the Government of India – the National Population Policy (2000), and the National Health Policy (2002).

From these accounts, it may not be very implausible to infer that human health has hardly ever lacked attention in India as a broader policy concern. And yet, a number of significant issues have either missed attention, especially at micro level or remained on the sidelines for one or the other reason. It may, for example, be noticed that a great deal of health infrastructure in India, especially in most rural areas, has largely been directed to achieve fertility reduction, improve contraception level and make people aware about the needs of smaller families. More recently a few additional, but interlinked, activities have also been added with an objective to fulfill a few of the Millennium Development Goals such as reduction in maternal, infant and child mortality and improvement in level of institutional deliveries. In the process, however, general or post-50 health care, required by a large percentage of poor in rural and urban areas, is/was left to market providers — a very large fraction of them consists of quacks. As poverty is still persistent in most rural areas and urban slums, reliance on private health providers is fraught with serious economic consequences, especially for low income households engaged in the informal economy.

Another significant issue, which dissuaded analysts to examine the health-poverty nexus, especially at the micro level, relates to lack of adequate data and information. Admittedly, the National Sample Survey Organization (NSSO) does provide data on health spending at the household level as part of its (annual and quinquennial) consumption surveys; these are generally considered reliable at the state level. The same at the district or the sub-district level may cause problems peculiar to studies suffering from a limited number of observations. More recently, there have been attempts by the Ministry of Health and Family Welfare (MoH&FW) to supplement the data sources on major health issues — particularly on access to and utilization of health services both in the public and private sectors — most of them are once again confined to reproductive health.³

³ More prominent among these data sources with a cross country coverage and large sample size are the three different rounds of the National Family & Health Survey (NFHS – 1, 1992-93; NFHS – 2, 1998-99; and NFHS

Against this backdrop, there is now a realization that the health situation in India is seriously entrenched in the following. First, despite its rising economy, India is still a country with wide spread poverty, malnutrition and enormous disparities in almost every sphere of human life including health; women and the old suffer the most. This is particularly true for the rural areas where the per capita monthly consumption expenditure — an important indicator of poverty — is alarmingly low (Alam, 2008). Moreover, there is hardly any significant change in real per capita consumption level of rural households over the past decade (Alam, 2008). Second, disease prevalence — both communicable and non-communicable — is invariably large among the low income rural and urban households for poor socio-economic conditions and inadequate access to public health facilities. Third, the growing role of market in delivery of health and diagnostic services with a very high out-of-pocket expenditure by seekers of health care, many of them, as has already been noted, at the lowest deciles of consumption levels. Fourth, the major contributory factor resulting into severity of health issues in India relates to various infrastructural bottlenecks suffered by health services provided by the Centre, state or local governments. These bottlenecks go beyond the physical or financial resources and cover whole aspects of hospital administration including large-scale deployment of medical doctors to non-clinical services due to the interference of the local bureaucracy. Such deployments not only cause a considerable amount of dissatisfaction among users of public services but also force a shift to private medical services and incur out-of-pocket expenses.

Clearly, all these issues are not only detrimental to the economic well-being of a large number of poor households or their family members, they are also in direct contradiction to the two most significant national policy documents – the National Population Policy (2000), and the National Health Policy (2002). In addition, these are in contradiction to the country's new economic regime as well.

– 3, 2005-06), and the District Levels Health Surveys (generally known as the RCH surveys) designed to assess various population parameters including utilization of health services required during the pre and post natal phases along with the nutritional details and immunizations of children against certain early life diseases. Much of these information and data sources however concentrate on programme variables without making explicit concerns about the outcome variables.

1.2: Health Indicators: India and States

Three issues are often reported to have largely clouded the health indicators of the country and bring them directly in contradiction to the stated objectives of the country's population and health policies.⁴ These are:

1. High prevalence of communicable and non-communicable diseases in the country causing premature deaths and loss of healthy life;
2. Inadequate public health expenditure – especially if judged by using the price adjusted expenditure data; and
3. Increasing role of private sector in health care delivery causing very high out-of-pocket expenses on drugs (both common and life saving) and other components, borne out disproportionately by the low income households with grave risks of being pushed to: (i) serious welfare losses, (ii) catastrophic conditions, and (iii) indebtedness. It also creates a divide between the health care allocations by the government and the private needs.

We will deal briefly with some of these issues in the following discussion and provide a few corroborating evidences; a few of them have already been produced by the Commission on Macroeconomics and Health in its report.

Major Indicators of Health: All India

A perusal of Table 1.1 reveals that the annual population growth rate is declining. It was 1.7 per cent per annum during the period 1990 to 2005. The infant mortality rate at 58 per thousand live births is comparatively at a higher level and registered only a marginal decrease during the recent decade. The maternal mortality rate at 301 per 1 lakh live births is quite high in international comparison. The UN Millennium Development Goals have included reduction of IMR and MMR for priority attention. The NRHM has also laid stress on increase in institutional deliveries for reduction of IMR and MMR, but still the percentage of domiciliary deliveries is quite high. Another cause of concern is the high level of anemia among children and pregnant mothers; it was 56.2 per cent in case of children in

⁴ See National Population Policy (2000), and National Health Policy (2002).

the age group of 6 to 35 months and 57.9 per cent in case of women in the age group of 15 to 49 years as per National Family Health Survey-3 for 2005-06.

Table 1.1: Major Indicators of Health: All India

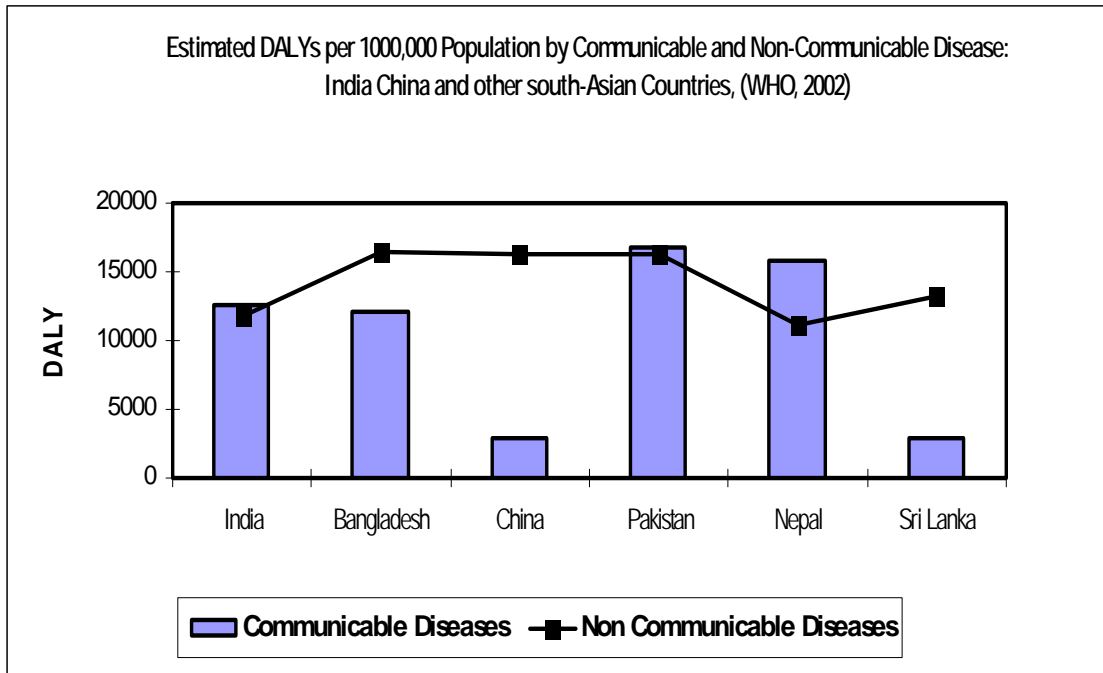
Annual growth of GDP per capita: (long term) 1990 – 2005 (%)	4.2 ^d		
Annual Growth of Population: 1990 – 2006 (%)	1.7 ^c		
IMR per 1000 live births, 2007	55 ^f		
Life Expectancy: M/F (projected for 2001-06)	63.9/66.9 ^a		
MMR per 100,000 live births, 2004-06	254 ^g		
TFR: 2005	2.7 ^h		
Crude Death Rate per 1000 population, 2005	7.4 ^f		
Population served per government doctor, 2007	14,743 ^e		
Nurses per 1000 population: 2005	0.17 ^e		
Pharmacists per 1000 population: 2006	0.03 ^e		
Total Hospital Beds/Population served per Hospital Bed (government sector), 2006	492,698/2,257 ^e		
Non-institutional Deliveries, 2005-06	59.3 ^h		
Public Expenditure on Health as percent of GDP: India, China and Sri Lanka, (2005)	1.0	1.8	1.9
Anemic children age 6 – 35 months (%): NFHS - 2/NFHS - 3	51.2/56.2		
Pregnant Anemic Women age 15 to 49 (%): NFHS – 2/NFHS - 3	49.7/57.9		

Sources: **a:** 11th Five Year Plan, **b:** Census of India, 2001, **c:** World Bank (World Development Indicators, 2008), **d:** Human Development Report (2007/08), **e:** National Health Profile (MoHFW), 2006. **f:** SRS Bulletin, October 2008. **g:** Special Bulletin on Maternal Mortality in India (2004-06), SRS, Registrar General & Census Commissioner's Office, New Delhi. **h:** National Family Health Survey (NFHS – 2 and NFHS – 3 for the years 1998-99 & 2005–06).

Disease Burden and Deaths: WHO Estimates (DALYs Rates & Death Rates)

A comparison of the WHO estimates of DALYs rates (Figure 1.1) reveals that the disease burden as regards the communicable diseases in India is quite higher than in China and Sri Lanka, although it is lower than Pakistan and Nepal and about equal with Bangladesh. As regards the non-communicable diseases, it is equal to the level in Nepal, but quite lower than in other South Asian countries (as well as China — though China is not considered to be part of South Asia). But WHO seems to have clubbed China with other South Asian countries—so should be fine.

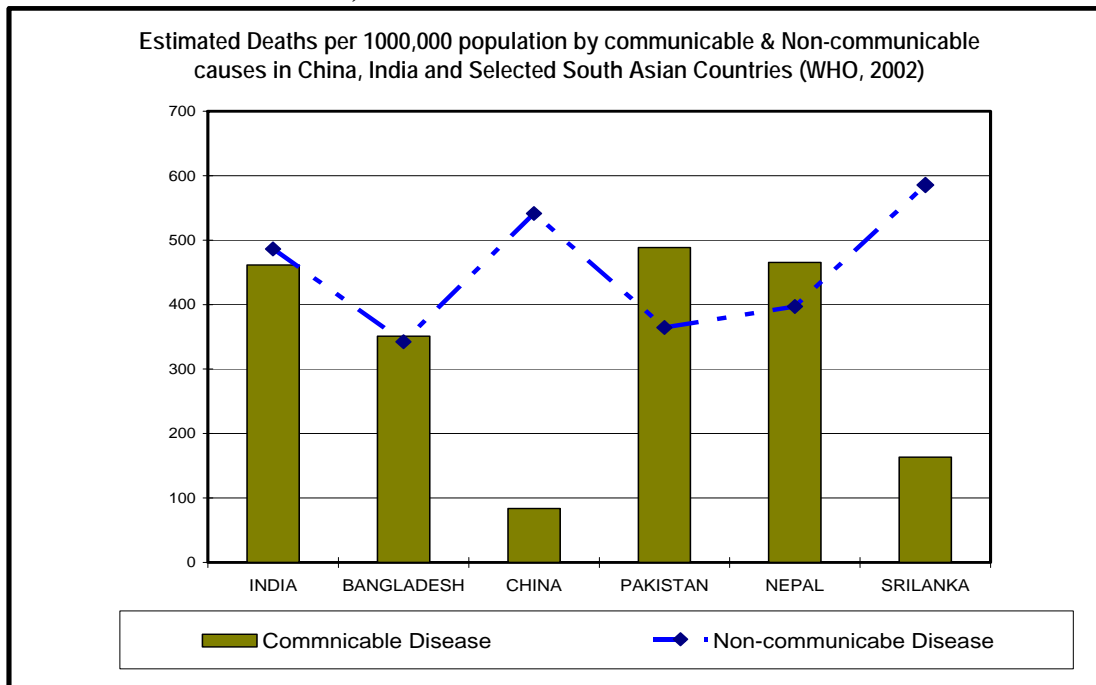
Figure 1.1: Estimated DALYs by Communicable and non-communicable Diseases: India, China and Other South Asian Countries



Source: WHO (Department of Measurement and Health Information, December 2004}
<http://www.who.int/healthinfo/statistics/bodgbdeathdalyestimates.xls> (Accessed December 2008).

The estimate per million deaths by communicable diseases in India, China and a few other South Asian countries (Figure 1.2) reveal that India is the second highest; highest being Pakistan. India is more or less equal to Nepal. The other three countries including Bangladesh, Sri Lanka and China have lower estimated deaths in that order. The deaths by non-communicable diseases are the highest in Sri Lanka, followed by China, India, Nepal, Pakistan and Bangladesh. These statistics clearly suggest a high burden of diseases (BoD) and a high incidence of deaths by communicable diseases.

Figure 1.2: Estimated Deaths by Communicable and non-communicable Diseases: India, China and Other South Asian Countries

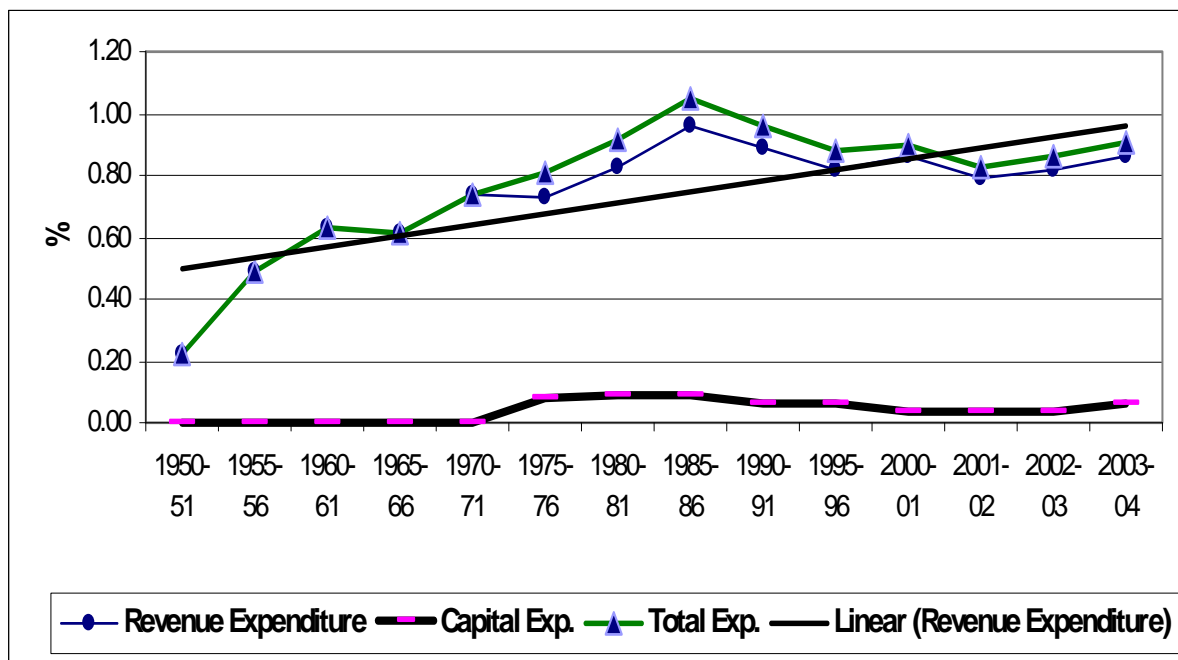


Source: WHO (Department of Measurement and Health Information, December 2004}
<http://www.who.int/healthinfo/statistics/bodgbdeathdalyestimates.xls> (Accessed December 2008).

Health Financing by the Centre and States: An Overview

Public health expenditure as a percentage of GDP showed a rising trend; from merely 0.20 per cent in 1950-51, it increased to a little over 0.60 per cent in 1960-61 to a highest of over 1 per cent in 1985-86 (Figure 1.3). Then it started declining, the lowest point of 0.80 per cent was reached in 2001. It marginally increased to about 0.85 in 2003. The capital expenditure has been at a very low level; it was virtually at zero level up to 1970-71, increased to a highest level at about 0.1 per cent in 1980s, and then started falling continuously up to 2002-03, with a marginal increase in 2003-04. The trend of revenue expenditure has matched the general trend as the share of revenue expenditure has been very high in the total expenditure.

Figure 1.3: Public Health Expenditure as Percent of GDP: All India (Nominal)

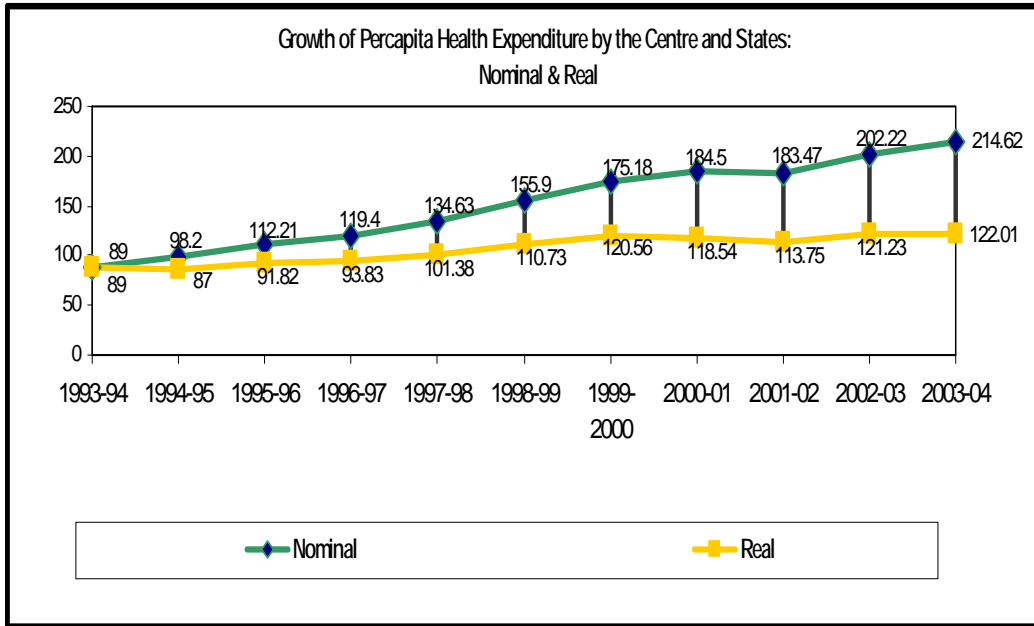


Source: Cited in its report by the National Commission on Macroeconomics and Health, Table 2.16, p. 71. http://www.whoindia.org/LinkFiles/Commission_on_Macroeconomic_and_Health_Financingof_Health_in_India.pdf (Accessed December 2008).

Per capita Health Expenditure in the post Reform period

The growth rate in the per capita health expenditure has been rising continuously from 1993-94 to 2003-04 at nominal prices. It has risen from 89 per cent in 1993-94 to 214.62 per cent in 2003-04 (Fig. 1.4). At the real price level, however, the growth rate is marginally lower than at nominal prices, but the trend remains more or less the same. The growth of per capita health expenditure at real prices increased from 89 per cent in 1993-94 to 122 per cent in 2003-04.

**Figure 1.4: Post Reform Growth in Per Capita Health Expenditure:
All India (Nominal and Real)**



Source: Report of the National Commission on Macroeconomics and Health, Table 2.16, p.71.

Share of Health in Revenue Budget: Centre and States

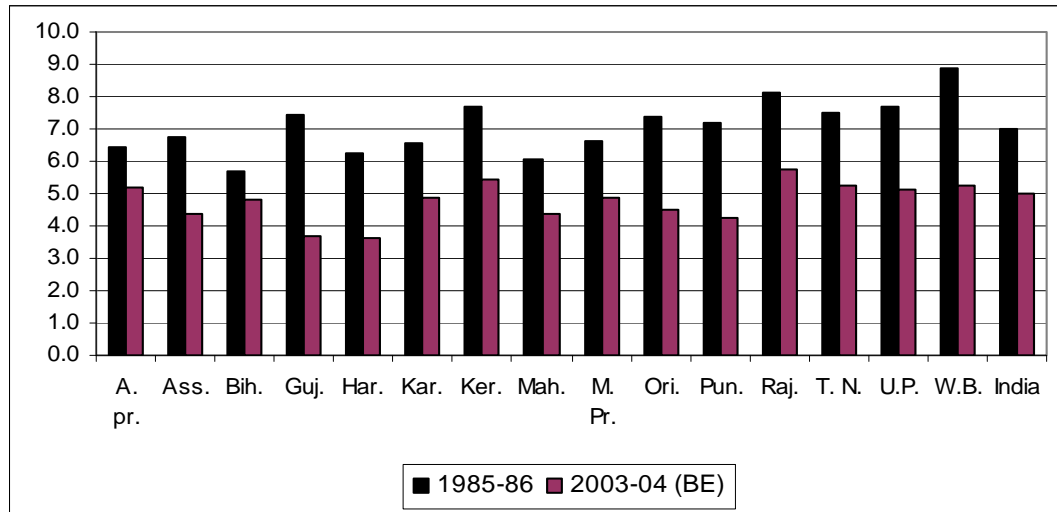
The share of health in the Revenue budget at the all India level has been continuously declining from 7.02 per cent in 1985-86 to nearly 5 per cent in 2003-04 (see Table 1.2). The states have also represented more or less the all India pattern. However, there are marginal variations in cases of Bihar, Haryana, Madhya Pradesh, Punjab, Tamil Nadu and Uttar Pradesh. The share of health in revenue budget of Bihar has increased to 7.8 per cent in 1995-96 from 5.7 per cent in 1991-92, but again came down to 6.3 per cent in 1999-2000, and further to 4.8 per cent in 2003-04. In case of Haryana, the share went down to as low level as 3 per cent in 1995-96 from 4.2 in 1991-92, went up to 4.1 per cent in 1999-2000 and again to a low of 3.6 in 2003-04. In Tamil Nadu, the share of health went down drastically from 7.5 per cent in 1985-86 to 4.8 per cent in 1991-92, increased again to 6.4 per cent in 1995-96, and came down further to 5.3 per cent in 2003-04 (see, Table 1.2). Figure 1.5 displays this trend very clearly. It is also clearly visible from this figure that the share of health in revenue budget has fallen substantially in Gujarat, Haryana, Orissa, Punjab and West Bengal over the years under reference.

Table 1.2: Share of Health in Revenue Budget of the Centre and States: 1985/86 – 2003/04 (%)

	1985-86	1991-92	1995-96	1999-00	2003-04 (BE)
Andhra pr.	6.41	5.77	5.7	6.09	5.21
Assam	6.75	6.61	6.08	5.25	4.39
Bihar	5.68	5.65	7.8	6.3	4.84
Gujarat	7.45	5.42	5.34	5.21	3.68
Haryana	6.24	4.19	2.99	4.08	3.63
Karnataka	6.55	5.94	5.85	5.7	4.85
Kerala	7.69	6.92	6.81	5.95	5.42
Maharashtra	6.05	5.25	5.18	4.59	4.39
Madhya Pr.	6.63	5.66	5.07	5.18	4.89
Orissa	7.38	5.94	5.42	5.03	4.47
Punjab	7.19	4.32	4.56	5.34	4.27
Rajasthan	8.1	6.85	6.18	6.39	5.75
T. Nadu	7.47	4.82	6.4	5.51	5.26
Uttar pr.	7.67	6	5.73	4.42	5.13
W. Bengal	8.9	7.31	7.16	6.3	5.23
All India	7.02	5.72	5.7	5.48	4.97

Source: Cited in its report by the National Commission on Macroeconomics and Health, Table 2.17, p. 72.

Figure 1.5: Declining Share of Health in Revenue Budget of Major States: 1985-86 & 2003-04



Source: Table 1.2.

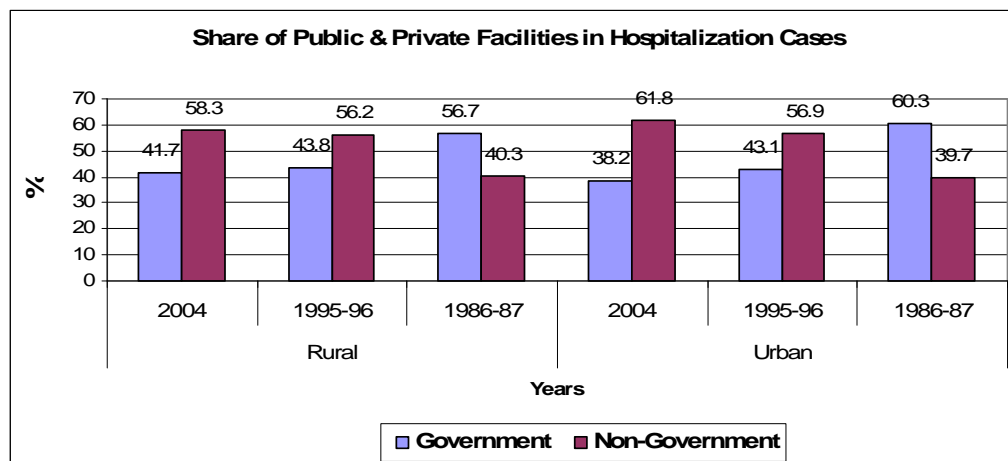
Utilization of Public and Private Health Facilities

A perusal of Table 1.3 reveals that the country-wide share of total cases treated in private hospitals was 58.3 percent in rural areas, while the same for the urban areas was given as 61.8 per cent. State level differentials reveal that rural Bihar had the highest share of treatment in private hospitals; over 85.6 per cent of the total cases in rural areas were treated in private facilities. This is followed by 79.4 per cent in Haryana, 72.7 per cent in Andhra Pradesh, and 71.3 per cent in Maharashtra. In contrast, Orissa, West Bengal and Himachal Pradesh were at the other end with a greater share of total cases going to the public hospitals. Is it a reflection of better health care delivery by public hospitals in these states? We refrain from commenting on that.

In the urban areas as well the highest percentage of 78.5 per cent is in Bihar, followed by 73.9 in Gujarat and 73.6 in Punjab. On the other hand the lowest of 10.5 per cent of the cases were treated in private hospitals in Himachal Pradesh, 13.5 per cent in Jammu & Kashmir, and 26.9 per cent in Orissa. The lower utilization of private hospitals in many cases, and particularly in Orissa, may be due to widespread poverty.

The trend of the utilization of public and private facilities in hospitalization cases can be seen in Figure 1.6. In this Figure the share of public and private facilities in hospitalization cases are given on three points of time from the NSS data; 1986-87 (42nd round), 1995-96 (52nd round), and 2004 (60th round). A clear declining trend is visible, both for urban and rural areas as far as utilization of public facilities is concerned. In rural areas, the share of utilization of public facilities has declined from 56.7 per cent in 1986-87 to 41.7 per cent in 2004, while in urban areas, the share has declined from 60.3 per cent in 1986-87 to 43.1 per cent in 1995-96 to only 38.2 per cent in 2004. The declining utilization of public facilities in hospitalization cases has quite serious implications on the out-of-pocket expenses on medical care.

Figure.1.6: Utilization of Public Facilities in Hospitalized Care: Rural-Urban Distribution



Source: NSS 60th Round (January-June, 2004), Statement 24.

Table 1.3: Share of Public and Private Hospitals in Treated Cases: Major States 2004

States	Rural		Urban	
	Govt. Hospital	Priv. Hospital	Govt. Hospital	Priv. Hospital
AP	27.2	72.7	35.8	64.2
Assam	74.2	25.8	55.4	44.6
Bihar	14.4	85.6	21.5	78.5
Delhi	-	-	37.3	62.7
Gujarat	31.3	68.7	26.1	73.9
Harayana	20.6	79.4	29	71
HP	78.1	21.9	89.5	10.5
J & K	91.3	8.7	86.5	13.5
Karnataka	40	60	28.9	71.1
Kerela	35.6	64.4	34.6	65.4
MP	58.5	41.5	48.5	51.5
Maharastra	28.7	71.3	28	72
Orissa	79.1	20.9	73.1	26.9
Punjab	29.4	70.6	26.4	73.6
Rajasthan	52.1	47.9	63.7	36.3
Tamil Nadhu	40.8	59.2	37.2	62.8
UP	26.9	73	31.4	68.6
WB	78.6	21.3	65.4	34.6
India	41.7	58.3	38.2	61.8

Source: NSS 60th Round (January-June, 2004), Statement 24.1.

Clearly, the preceding discussion underscores the argument that despite its persistent efforts and inputs received from a number of specially constituted bodies, India is critically lagging in terms of its longstanding commitments towards building a healthy society based on certain norms of equity and efficiency. The country, as may be noticed from the data presented above, is turning out to be much severely constrained due to high proportions of immature deaths as well as diminution in healthy life caused by a distressing combination of both communicable and non-communicable diseases. A more or less similar observation follows from the rest of the figures. The country has especially failed to enhance health sector finances in real terms. It has also failed to ensure the health care access for as many households — forcing many to shift eventually from the public to the private deliverers.

While a great deal of these facts are now beginning to emerge from the studies conducted in recent years to highlight a range of physical, financial and manpower anomalies suffered by the public health facilities in India, how these anomalies have affected the low income households, particularly in backward districts of high poverty states, remains almost completely neglected. Many of these studies have also failed to examine the nature of households and their income level who are trapped into a poverty syndrome or experience catastrophe as a result of losses suffered due to expenditure on health care services – especially drugs and medicines - in poverty ridden rural and urban areas of the country. This study is basically designed to highlight some of these neglected issues using data from a uniformly designed household survey in three states.

1.3: Objectives of the Study

As is evident, despite being a country with a high economic potential and an impressive GDP growth over the recent past, India remains seriously confronted with malfunctioning of its health system with serious implications for low-income rural and urban households, particularly in states and districts where the poverty situation is acute and the shares of population below the designated poverty line have been large. This is largely corroborated from a number of recent studies (Alam, 2007; Chaudhury, Hammer and others, 2005; World Development Report, 2004; Berman and Khan, 1993) and surveys with focus on delivery of services in various health domains (NFHS-3, 2005-06; NSS 60th round,

January-June 2004; NSS 52nd round, July 1995-June 1996). These studies also suggest a gradual decline in utilization of public sector facilities, often on account of dissatisfaction with the service quality (Ager and Pepper, 2005; Misra, Chatterjee and Rao, 2003; Babu, Chhotray and others, 2000). This slippage, in other words, implies a growing dependence of households on private medical facilities resulting into disproportionately higher out-of-pocket expenses on diagnostics and other components of medical care. Studies reveal that the poorest 10 percent of the country's population rely on sale of their assets or on borrowings to access and meet the cost of medical services.

Besides generating a whole range of debate around the paucity of public health financing and market failure risks, this whole phenomenon has a number of other important social dimensions as well as significant implications for the well being of individuals from low-income households. The entire issue becomes further complicated if other medical expenses, in particular the costs of drugs and medicines are also accounted for.⁵ There are apprehensions that the cost of medical drugs are likely to grow further with on-going changes in drugs pricing mechanism (alteration in list of essential drugs and changes in nature of disease-mix) and also under the complex regime of patenting and Trade Related Intellectual Property (TRIP) rights.⁶

Two important documents — the 60th round of the National Sample Survey on Morbidity, Health Care and the Conditions of the Aged (January-June 2004), and the report of the National Commission on Macroeconomics and Health (September 2005, Ministry of Health and Family Welfare, Government of India) — bring out some of these facts in considerable details. To illustrate, the 60th round of the National Sample Survey (electronic version) clearly reveals very poor utilization of the health facilities provided by the government. Contrasted with earlier findings, these results indicate a significant decline even in utilization of in-patient facilities offered by the state run hospitals. The National Commission on Macroeconomics and Health (September 2005) too has made more or less

⁵ Reportedly, households in India spend 50 percent of their total health expenditure on drugs.

⁶ Many believe integration with the global pharma market will help in acquiring latest technology. It may however increase prices and hinder many from accessing a number of essential drugs, especially in a situation when over 75 percent of the drugs in India are outside the price control regime..

similar observations⁷, suggesting a disproportionately higher out-of-pocket spending on health services by the low-income rural and urban families.

Despite the reverberating nature of these apprehensions and their contributions towards the growing debate on the need for a greater and more effective role of public sector in delivery and financing of health services, the emerging literature has however failed to decompose the effects of health expenditure by some of its major components — diagnostics, medical consultations and drugs or medicine, etc. — on the coping up strategies of rural and urban households in general, and those engaged in low-paid casual employment in particular. Several of these issues may be aggravated further if the households are located in high poverty districts with inadequate income generating opportunities.

The proposed study is essentially drawn on some of these considerations, and designed to examine private out-of-pocket expenditure on treatment of ailing family members by its various components — drugs/medicines, diagnostics and other expenditure items including consultations. In addition, attempts have also been made to assess the extent of borrowings used to finance medical expenditures, and their consequences for households' abilities to meet the basic food and non-food requirements of the family or household members. Opaquely though, one of the important value additions of this study may also be noticed if judged from the view point of an ever growing debate in public policy arena on drug pricing and enlisting of medicines commonly used by low income rural and urban households.

To be more explicit, the study focuses more conclusively on the following specific issues:

1. An analysis of the patterns of treatment of short (past 30 days) and long (past 365 days) duration morbidity under different socio-economic and ethnic settings. A part of the analysis was also devoted to examine the role of health expenditure in pushing households to fall below the poverty line and face catastrophe — amounting to a significant decline in over all welfare and non-food consumption expenditure of households. There was also concern in regard to the prevalence, intensity and causal risk factors associated with catastrophic health spending of households.
2. An assessment of the total and disaggregated expenditure incurred in treatment of short and long duration ailments, and the sources used to generate the requisite

⁷ See, for example, the *Financing and Delivery of Health Care Services in India*, National Commission on Macroeconomics and Health, Ministry of Health & Family Welfare, Government of India, (August 2005).

finances including past savings, asset liquidations, borrowings from money lenders and assistance drawn from informal support networks.

3. A review of expenditure on the purchase of medical drugs (including life saving drugs and general medicines) as a proportion of total health budget for the treatment of short (without hospitalization) and long (hospitalization) duration ailments. This analysis was basically conducted to derive host of policy options required to reduce out-of-pocket health spending and its size. If drug expenses constitute bulk of private health spending, leading many to face catastrophe, government has to become more vigilant in terms of its drug pricing policy. Over prescription of medicines and other malpractices may also need attention.
4. Resources mobilized by households to meet medical expenses, especially those on drugs, medicines and other services.
5. If the NRHM (National Rural Health Mission, 2005) has in anyway helped in protecting poor households from the adverse economic consequences of illness episodes in rural areas.

The study will specially attempt to identify policy interventions to help the low-income rural, urban and slum households during disease episodes and reduce the out-of-pocket expenses.

Study Areas

This study has been conducted in selected districts of two special focus states of – Uttar Pradesh (UP) and Rajasthan. In addition, an attempt has also been made to include Delhi as one of the study areas for its wider representation of population from different parts of the country. Further, coverage of Delhi was also considered to help in broadening the scope of this study by a brief review of the situation faced by slum dwellers in a city as significant as Delhi.

Choice of U.P., and Rajasthan as the states to examine some of the preceding issues was made on two specific considerations: (i) because of their higher poverty levels (the real per capita monthly consumption expenditure in Rajasthan was Rs. 165 in 1995-96 and grew to Rs. 177 in 2004; the same for U.P. turns out to be Rs. 143 and Rs. 163 respectively), and (ii) a relative weaker demographic status (CBR, CDR and e^0 for Rajasthan: 29.0, 9.1 and 63

years in 2001, while for U.P. it was reported as 31.7, 10.9 and 60.4 respectively). The former has particularly been among the states with weak socio-demographic indicators and many of its districts with a very large fraction of people below the poverty level.

Yet another consideration in selection of these two states was their locational proximity making data collection and associated logistics simpler. There was also no insurmountable language problem.

1.4: Collection of Primary Data: Survey Design and Selection of Households

Considering the inadequacy of town or village level data to examine in-depth the nature of health care services accessed at the time of a disease incidence by households of different socio-economic denominations, what means do they bring to meet the cost of these health services, and to what economic ramifications does it lead to, this study was largely conducted with the help of a survey in selected districts of two Northern states — U.P., and Rajasthan. As was noted, both of these states have not only suffered from higher poverty ratios, they were also stymied because of their poor demographic performance. In order to complete the regional configuration, and also to examine the issues faced especially by the slum households, it was subsequently decided to include the capital city of Delhi as well.

Selection of Study Area and Sample Design: UP and Rajasthan

Confining somewhat narrowly in scope to only the country's northern belt (U.P., Rajasthan and Delhi), and also to a predetermined sample size of 2010 rural and urban households, a multi-stage sampling procedure was adopted for the collection of field data. The primary survey unit (PSU) remains the household. To begin with, it was decided to select two districts each from both the major states. These districts were chosen on the basis of poverty measurements derived by the Ministry of Rural Development on the basis of its 2002 BPL Survey, using a set of about 13 critical attributes indicating level of deprivation

and poverty at the unit level.⁸ The same criterion and data source were used to select the districts in both the states.

Of the two districts, one was drawn from the high poverty population — i.e., from the cluster of districts with more than 50 percent population or families above the officially defined poverty norm. A reverse is followed to decide on the second district. To be more precise, the criteria adopted for selection of districts were as below:

District: 1 Selected from the group of districts with more than 50% population (or families) below officially defined poverty level.
All the districts ranked in descending order and a median district chosen.

District: 2 Selected from the group of districts with less than 50% population (or families) below officially defined poverty level.
All the districts ranked in descending order and a median district chosen.

Appendix Tables 1.1 and 1.2 respectively provide a list of districts in each state and their corresponding below poverty populations arranged in descending order. Based on this criterion, a total of four districts were selected from U.P. and Rajasthan:

U.P.	High Poverty District:	Unnao (59.5 percent below poverty population)
	Low Poverty District:	Jhansi (29.2 percent below poverty population)

Rajasthan	High Poverty District:	Dungerpur (57.1 percent below poverty families)
	Low Poverty District:	Dausa (17.6 percent below poverty families)

Second stage of the sampling was to select a tehsil (or town) from each of the four identified districts in both the states. These tehsils were later used for selection of villages and urban blocks from where the primary sample units of households were drawn.⁹ The tehsils were chosen purposively to ensure easier access to the PSUs as the survey was conducted during the peak summer months — April to June 2007 — to avoid rains or busy agricultural season and also to minimize the risks of high seasonal diseases.

⁸ Unlike the National Sample Survey Organization (NSSO), the poverty estimates provided by the Ministry of Rural Development are based on total count data and therefore considered more reliable for application at district or sub district levels. There are however questions about the adequacy of the deprivation indicators used to decide poverty. Further improvements in the list of indicators are currently in progress.

⁹ Towns and villages were drawn on the basis of 2001 Census records.

At the third stage, a set of villages and urban municipal wards were selected from every town by employing a circular systematic sampling (CSS).¹⁰ A total of five urban wards and 15 villages from U.P., and 3 urban wards and 10 villages from Rajasthan were considered to derive the sample households (or PSUs). Finally, a sample of 50 households from each of these villages and urban ward were selected — again by using the CSS method. Figure 1.7 summarizes this entire sampling procedure.

Selection of Sample Households: Delhi

Using district-wise shares of population in all the nine Census districts of Delhi, we have distributed a pre-determined sample of 360 urban households across the city by covering a little over 28 percent of them from the census identified slums. The remaining non-slum households combined a mix of all the income categories, social groups and residents from different localities.

¹⁰ The circular systematic sampling (CSS) method was suggested as part of the NSS instructions to field workers in 1952 and the National Sample Survey Organization has been using the CSS method since then. This method regards total (N) units of wards, villages or households as arranged around a circle, and consists in choosing a random start from 1 to N instead of from 1 to k, where k is the integral value nearest to N/n , where n is number of sample units. To illustrate, let $N = 14$, $n = 5$, and k (i.e., N/n) be taken as 3. If random start r ($1 \leq r \leq 14$) is 7, then the sample units with serial numbers 7, 10, 13, 2 and 5 are included. The CSS has two principle Advantages: (1) It provides constant sample size, and (2) Sample mean remains unbiased estimator of population mean (Murty, 1967). Diagrammatically, this method may be represented as below.

Figure 1.7: Circular Systematic Sampling Procedure

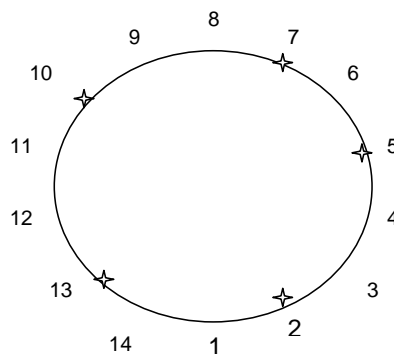
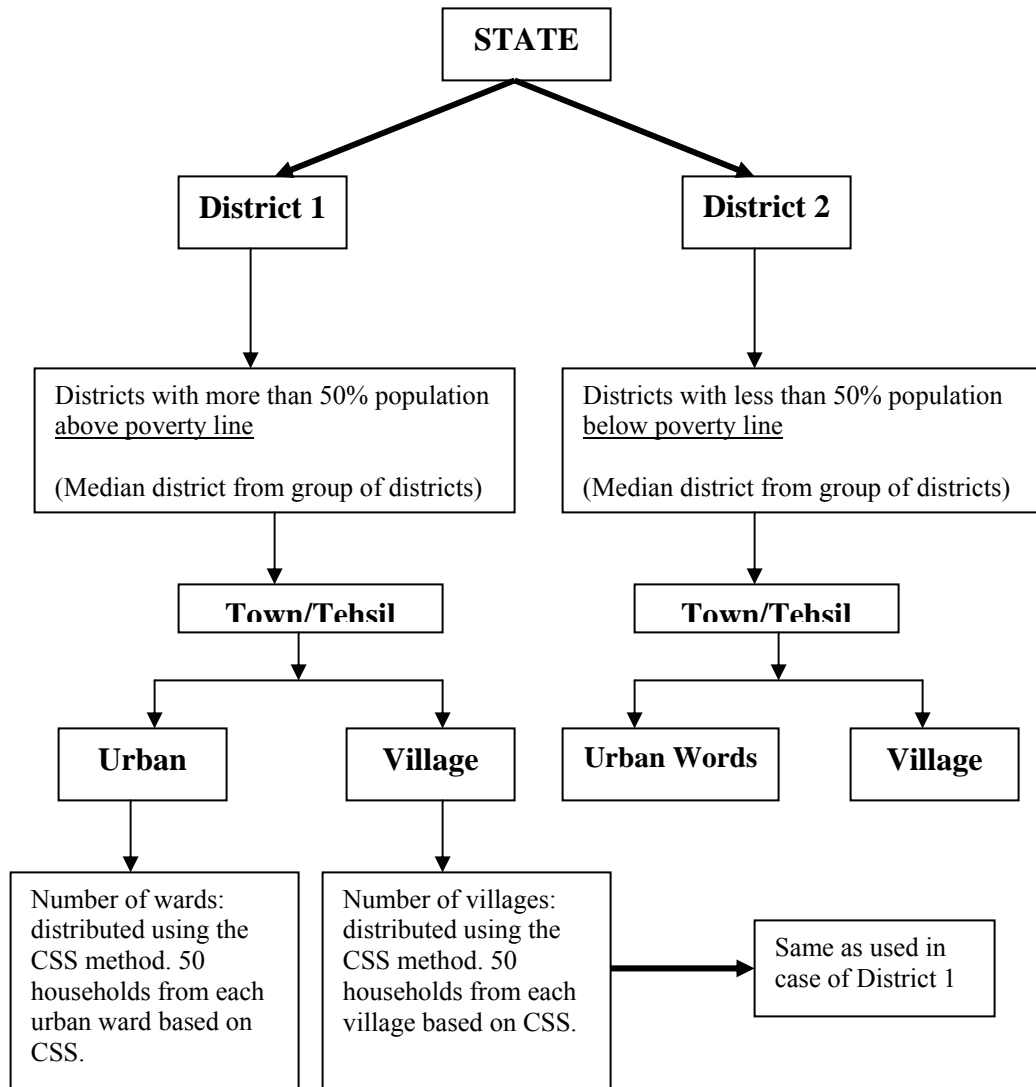


Figure 1.8

Selection of PSUs in U.P. and Rajasthan



Distribution of Total Sample

A final distribution of sample households across three different states and identified districts, towns, villages, slums and non-slums are given in Table 1.4 (also see Figure 1.8). It may be noticed that the biggest share of the pre-determined

Table 1.4: Distribution of Sample Households: UP, Rajasthan and Delhi

UP: Sample Households - 1000 250 Urban & 750 Rural				RAJASTHAN: Sample Households - 650 150 Urban & 500 Rural			
Urban Sample: UNNAO		Urban Sample: JHANSI		Urban Sample: DUNGER PUR		Urban Sample: DAUSA	
Unnao Town (MB)	Sample Wards = 3	Maurani Pur Town (MB)	Sample Wards = 2	Sagwara Town (MB)	Sample Wards = 2	Bandikui Town (MB)	Sample Wards = 2
Municipal Wards = 25	CSS N/n = 25/3 K = 8 Sample HHDs = 150	Municipal Wards = 25	CSS N/n = 25/2 K = 13 Sample HHDs = 100	Municipal Wards = 20	CSS N/n = 20/2 K = 10 Sample HHDs = 100	Municipal Wards = 15	CSS N/n = 15/1 K = 15 Sample HHDs = 50
Rural Sample: UNNAO		Rural Sample: JHANSI		Rural Sample: DUNGER PUR		Rural Sample: DAUSA	
Unnao Tehsil	Sample Villages = 9	Mauranipur Tehsil	Sample Villages = 6	Sagwara Tehsil	Sample Villages = 5	Baswa Tehsil	Sample Villages = 5
Total Villages = 288	CSS N/n = 288/9 K = 32 Sample HHDs = 450	Total Villages = 152	CSS N/n = 152/6 K = 25 Sample HHDs = 300	Total Villages = 203	CSS N/n = 203/5 K = 41 Sample HHDs = 250	Total Villages = 211	CSS N/n = 211/5 K = 42 Sample HHDs = 250
DELHI: No. of Sample Households by Census Districts – Total HHDs 360 (all urban)							
Census Districts	Pop. Share (%)	No. of Slum HHDs	Non-Slum HHDs	District Total			
1. North-West District	18.6	15	52	67			
2. North Delhi	5.5	6	14	20			
3. North-East District	12.8	14	32	46			
4. East Delhi	12.8	18	28	46			
5. New Delhi	1.1	1	3	4			
6. Central Delhi	4.7	5	12	17			
7. West Delhi	15.0	17	37	54			
8. South-West Delhi	9.4	1	33	34			
9. South Delhi	20.0	25	47	72			
Total	100.0	102	258	360			

sample of households was assigned to UP because of its size followed by Rajasthan and Delhi. Rural households have received primacy as was expected because of the rural complexion of both the states. The reverse is true for Delhi.

In addition to our own unit level data from high and low poverty districts of the selected states, several secondary data sources, in particular the 60th and the 61st rounds of National Sample Surveys (NSS) and town and village directories of the Census 2001, have

also been used for the analysis. The NSS reports and the household data obtained from them were primarily used to understand the broader picture and also to check for the accuracies of our own results. We nevertheless agree that the NSS data do not hold for making comparisons at the district or the sub-district levels.

1.5: Survey Questions and Profile of Districts under Study

Questionnaire and Its Issues

A comprehensive, structured and multi-part questionnaire was used to collect information from selected rural and urban households (PSUs) in UP, Rajasthan and Delhi. From beginning to end, the entire protocol was divided into 14 different parts, covering almost 5 major groups of information. These include:

- Socio-economic details of the households and their members including their age–sex profiles, relationship with the head of the households (usually the basic point of consultation), educational attainments, work status, residential characteristics (rural-urban), housing conditions, access to public health facilities, road links with the primary health centers, possession of consumer durables, land holdings for agricultural purposes (both arable and fallow), etc.
- Households’ accesses to selected health and non-health facilities run by the government. Some of the questions included in this part of the questionnaire have also been directed to explore – although cursorily – any improvements in delivery of services experienced by households since the inception of National Rural Health Mission (NRHM) and the National Rural Employment Guarantee Scheme (NREGS).
- Food and non-food consumption expenditure of the households based on dual reference periods – namely, past 30 days and past one year as was usually followed by the NSSO. Attempts have also been made to examine the debt incidence among the sample households, type of money lenders accessed by them and purpose of borrowings differentiated by taking into consideration events such as health, education, investment, and major consumption requirements including marriages. All these information were used to examine the poverty status of the households and health catastrophe suffered by them over the period of study. Some attempts have also been made to examine the household transfers to meet the health care needs of the elderly (65 years or more) family members by sex.
- Disease episodes, both with and without hospitalization, utilization of public/private health facilities, choice of health providers and other related details including itemized health care expenditure and share of money spent on medicines, diagnostics and so on.

- Last few sections of the survey protocol were devoted to understand the views of the households on measures required to improve the health delivery mechanism in the country by public bodies. These households were also asked to give their views on introduction of a universal and low premium health insurance system and their participation in such a scheme.

Districts' Profile

District Unnao

Situated between the two important cities – Lucknow a cultural centre, and Kanpur an industrial city – and flanked by rivers Ganga and Sai, Unnao is a part of central UP with a total population of 27, 00,426 in 2001. The District is divided into five Tehsils — Unnao, Hasanganj, Safipur, Purwa and Bighapur — and sixteen development blocks including Ganj Moradabad, Bangarmau, Fatehpur Chaurasi, Safipur, Miyanganj, Auras, Hasanganj, Nawabganj, Purwa, Asoha, Hilauli, Bighapur, Sumerpur, Bichia, and Sikandarpur Sirausi, and Sikandarpur Karan. Primarily sustaining on agriculture, about 92 per cent of the district area is under cultivation.

The District is roughly a parallelogram in shape and lies between Latitude 26°8' N and 27°2' N and Longitude 80°3' E and 81°3' E. It is bounded on the north by district Hardoi and on the east by District Lucknow, on the south by district Rae Bareli and in the west by the sacred river Ganga which separates it from districts Kanpur and Fatehpur.

District Jhansi

Jhansi is another historically significant district of UP and the gateway to economically backward and drought prone region of Bundelkhand. The area grew in popularity during the reign of the Maratha rulers and its valiant queen Rani Lakshmi Bai who fought with the Britishers during the 1857 revolt.

Jhansi already apparent the administrative seat of the entire Bundelkhand Division. The famous national highway project of the Central government has resulted in good economic progress of the district. It has also helped to bring down the overall poverty level of the region and the Jhansi district by the end of 1990s. Unfortunately, however, because of serious drought conditions and slower pace of the highways project, the entire region has once again reverted back to poverty conditions and severe economic strain. We have

decided to include this district in our analysis because of the rising concern expressed by the planning bodies about its poor economic conditions and growing poverty levels.

Dausa District

A district of Jaipur Division in North-eastern Rajasthan, Dausa district has a total population of over 1.32 million according to 2001 Census. Almost a third of this population was completely illiterate. Dausa is bounded by several important districts including Alwar, Bharatpur, Karauli and Jaipur — most of them are among famous tourist destinations of Rajasthan. The entire district is divided into five tehsil—Baswa, Dausa, Lalsot, Mahwa and Sikrai. The Sawa and Ban Ganaga rivers run through the district.

Agriculture is the main occupation of the local people and the main crops grown in the district are wheat, bajra, rapeseed, mustard and groundnuts.

Dungarpur District

Dungarpur is situated in the southernmost part of Rajasthan. On the eastern and northern sides of the district are Banswara and Udaipur respectively. The southern and the western sides adjoin the state of Gujarat. Dungarpur is the smallest district of Rajasthan with a population size of about 1.11 million; more than half of this population (i.e., 51.4 percent) is illiterate. Most of the district is hilly with poor soil quality. The overall land productivity in the district is therefore rated very low with more than 50 percent of the families living below the poverty level. The economic situation is slightly better in areas adjoining Gujarat state.

Delhi and Its District

The capital city of Delhi, which in many ways holds the status of a full state, is situated in the northern part of India and stands on the west bank of river Yamuna. The bounded is on one side by Uttar Pardesh, and on the north, west and southern sides by Haryana. Delhi is spread over an area of 1483 sq. kilometers and has an urban population of about 12.9 million as shown in 2001 Census. A very large proportion of this population is

constituted by migrants from nearby states with a sizeable share of them engaged in low-income informal economic activities and residing in scattered slums all across the urban parts of the city.¹¹ Most of them are without adequate civic facilities, in particular water, power and sewage. Delhi is also the fifth most populated urban area in the world.

As was noted earlier, the entire state of Delhi has officially been divided into nine administrative districts.¹² These districts, divided further into 27 sub-divisions, include North, Central, New Delhi, North-East, South, East, North-West, West and South-West; New Delhi (1.1%) and South Delhi (20%) are the smallest and the largest in terms of population size respectively. The survey conducted for this study has attempted to cover all the nine districts and their slums, however due to very small sample size for a few smaller districts we finally decided to combine them with neighbors to avoid null cells.

Delhi has the advantage of a mixed population originating not only from the neighboring states but also from most of the country and its regions. The people from neighboring states however outnumber the rest. This makes the Delhi multi-ethnic, multi-cultural and multi-linguistic.

¹¹ Around 16 percent of the total population in urban Delhi was residing in slums as reported by the Census 2001 (Census of India 2001, Slum Population, Series – 1, Statement 1.1).

¹² More or less the same geographical distribution was followed for Census purposes as well.

**Appendix Table 1: Districts by Size of Population below Poverty Line: 2002
Uttar Pradesh: Rural**

Percent

Districts by Share of Population Below Poverty Line (BPL): Descending Order							
BPL: 50 % and more		BPL: Below 50%					
1. Kaushambi	74.65	18. Kanpur (Nagar)	49.93	39. Gonda	36.95	60. Hathras	17.91
2. Hardoi	74.00	19. Pratapgarh	49.09	40. Kannauj	35.85	61. Etah	17.26
3. Bahraich	72.11	20. Lucknow	49.06	41. Balrampur	35.69	62. Mathura	16.24
4. Mirzapur	68.38	21. Ghazipur	48.50	42. Azamgarh	32.87	63. Aligarh	14.64
5. Sonbhadra	64.53	22. Jalaun (Orai)	48.34	43. Farukhabad	32.64	64. Firozabad	13.61
6. Kanpur Dehat	60.87	23. Faizabad	48.22	44. Rampur	31.83	65. Budaun	12.24
7. Shravasti	60.53	24. Basti	47.64	45. Maharajganj	30.76	66. Muzaffarnagar	11.68
8. Unnao	59.51	25. Etawah	46.34	46. Lalitpur	30.47	67. Deoria	11.67
9. Ambedkar Nagar	59.15	26. Barabanki	46.15	47. Jhansi	29.19	68. Bulandshahar	10.34
10. Rae Bareli	57.78	27. S. K. Nagar	45.99	48. Gorakhpur	28.24	69. Meerut	8.38
11. Sitapur	57.46	28. Hamirpur	45.32	49. Allahabad	28.17	70. Ghaziaabad	7.12
12. Chitrakoot	55.13	29. Pilibhit	45.23	50. Bareilly	27.50	71. Baghpat	6.66
13. Sultanpur	54.62	30. Jaunpur	43.65	51. Saharanpur	24.56		
14. Shahjahanpur	54.11	31. Mau	43.34	52. J.P. Nagar	24.45		
15. Ballia	51.55	32. Orraiya	43.23	53. Varanasi	24.24		
16. Lakhimpur Kheri	51.01	33. Chandauli	43.10	54. Bijnor	23.67		
		34. Fatehpur	42.77	55. S.R. Nagar	22.74		
		35. Siddharth Nagar	42.74	56. Mahoba	21.33		
		36. Kushi Nagar	42.66	57. Moradabad	19.77		
		37. Mainpuri	42.52	58. Agra	19.43		
		38. Banda	40.85	59. G.B. Nagar	19.00		

Source: Ministry of Rural Development, Government of India, BPL Survey 2002.

Source: http://www.ansiss.org/doc/seminar2007July20-22/a_k_singh.doc

**Appendix Table 2: Share of BPL families by Districts in Rajasthan: 2002
Rural-Urban Combined**

S. No.	Districts	Percentage of BPL families
District with more than 50 percent BPL Families		
1	Dungarpur	57.05
District with less than 50 percent BPL Families		
1	Banswara	45.30
2	Barmer	36.45
3	Udaipur	36.27
4	Bikaner	32.56
5	Jalor	31.59
6	Karauli	27.17
7	Rajsamand	26.10
8	Jaisalmer	25.49
9	Baran	24.09
10	Ganganagar	21.01
11	Sawai Madhopur	18.93
12	Bundi	18.54
13	Hanumangarh	18.10
14	Dhauipur	17.94
15	Bhilwara	17.92
16	Dausa	17.59
17	Churu	17.48
18	Jodhpur	17.22
19	Jhalawar	17.09
20	Chittaurgarh	15.73
21	Pali	13.55
22	Sirohi	13.52
23	Bharatpur	13.22
24	Nagaur	11.90
25	Tonk	10.89
26	Kota	10.22
27	Alwar	8.26
28	Jaipur	6.99
29	Sikar	6.31
30	Ajmer	6.03
31	Jhunjhunun	3.39

Source: Ministry of Rural Development, Government of India, BPL Family Survey 2002.

Cut off income to decide the BPL population:

<u>State</u>	<u>Rural</u>	<u>Urban</u>
Delhi	410.38	612.91
U.P.	365.84	483.26
Rajasthan	374.57	559.63

References

Alam, Moneer, *Ageing, Socio-economic Disparities and Health outcomes: Some Evidence from Rural India*, IEG Working Paper Series No. E/290/2008, 2008.

Behrman, Jere R., and Deolalikar, Anil B., 1988, Health and Nutrition, in Chenery and Srinivasan (ed.) *Handbook of Development Economics*, Vol. I, Amsterdam: North-Holland.

Casanovas, Guillem Lopez, Breta Rivera, and Luis Currais, eds., *Health and Economic Growth: Findings and Policy Implications*, Cambridge, MA.: The MIT Press, 2005.

Census of India 2001, *Slum Population, Series – 1*, Office of the Registrar General and Census Commissioner, India

Dreze, Jean and Sen Amartya, *India: Economic Development and Social Opportunity*, Delhi: Oxford University Press, 1995.

Human Development Report. *Fighting Climate Change: Human Solidarity in a Divided World*, UNDP, New York: Palgrave Macmillan, 2007-08.

Ministry of Health and Family Welfare, National Health Profile, Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and FW, Government of India, pp.116 & 128, 2006.

Ministry of Rural Development, Government of India, BPL Survey 2002 (http://www.ansiss.org/doc/seminar2007July20-22/a_k_singh.doc)

Ministry of Rural Development, Government of India, Total BPL Families, BPL Family Survey, 2002 (http://tempweb225.nic.in/st_rep/st_scst.php?)

National Commission on Macro Economics and Health, Report of the National Commission on Macro Economics and Health, Ministry of Health and FW, Government of India, August 2005.

NSS 60th Round, *Morbidity, Health Care and the Condition of the Aged*, National Sample Survey Organization (NSSO), Report No. 507, Jan-June, 2004, various statements.

Osmani, Siddiq R., *Nutrition and Poverty*. Oxford: Clarendon Press, 1992.

Preker, Alexander S and Guy Carrin, eds, *Health Financing for Poor people, Resource Mobilization and Risk Sharing*, Washington D.C.: The World Bank, 2004.

Special Bulletin on Maternal Mortality in India (2004-06). SRS, Office of Registrar General (India), April 2009.

World Development Indicators. The World Bank, Washington D.C., 2008.

World Health Organisation, Organisation Mondiale de la Sante` Department of Measurement and Health Information December 2004
<http://www.who.int/healthinfo/statistics/bodgbdeathdalyestimates.xls>. (Accessed in October 2008)

Chapter 2

Sample Households and Population: Size, Composition and Socio-Demographic Profile

Characteristically, perhaps there may not be too many commonalities to make the three underlying states mutually comparable. Among the few that make them to a certain extent comparable is that each of these states belongs mostly to the Northern belt of the country and they largely remain monolingual with Hindi as the dominant language of daily usage. In most other cases, all the three states are mutually far apart with Delhi being the smallest in terms of population size and UP the largest. Compared to U.P. and Rajasthan, Delhi provides much better socio-economic opportunities to its residents and has a considerably higher per capita income with better access to medical and public healthcare services. These inter-state differences are expected to embody the socio-economic and health conditions of individuals and households described in the rest of this or in subsequent chapters.

2.1: Sample Households and Composition of Sample Population

Distribution of households in all the three states and their respective districts is given in Table 2.1. Three locational categories of households have been analyzed in

Table 2.1: Distribution of Sample Households by States and Districts

Sample Districts & States	Rural		Urban		
	No. of Villages	No. of HHDs	No. of Urban Wards	No. of HHDs	
Unnao	9	450	3		150
Jhansi	6	300	2		100
<i>1. UP</i>	<i>15</i>	<i>750</i>	<i>5</i>		<i>250</i>
Dausa	5	250	1		50
Dungarpur	5	250	2		100
<i>2. Rajasthan</i>	<i>10</i>	<i>500</i>	<i>3</i>		<i>150</i>
			Slums	Non-Slums	Total HHDs
West Delhi	-	-	17	37	54
Central Delhi	-	-	5	12	17
South Delhi	-	-	25	47	72
East Delhi	-	-	18	28	46
New Delhi	-	-	1	3	4
North West	-	-	15	52	67
North Delhi	-	-	6	14	20

South West	-	-	1	33	34
North East	-	-	14	32	46
<i>3. Delhi</i>	-	-	<i>102</i>	<i>258</i>	<i>360</i>

rest of the analysis for their out-of-pocket spending on diseases with or without inpatient care. These are, as noted earlier, a total of 1250 rural and 400 urban households from U.P. and Rajasthan, and 360 households from Delhi. Delhi households were further broken into slums and non-slums with the latter numbering 258 and the remaining 102 were drawn from the identified slums. In all, rural households constituted over 62 percent of the total sample while the rest came from slums and non-slums of the urban locations.

Table 2.2: Population Size and Religious Composition of Sample Households

States/ Dist.	No. of HHDs	Size and Sex Composition of Sample Population			Average HHD Size	Religion-wise Distribution of Sample Population (%)				
		Persons	Male	Female		Hindu	Muslim	Sikh	Christian	Others
Unnao	600	3436	53.3	46.7	5.7	92.17	7.67	0.00	0.17	0.00
Rural	450	2635	53.2	46.8	5.9	91.56	8.44	0.00	0.00	0.00
Urban	150	801	53.8	46.2	5.3	94.00	5.33	0.00	0.00	0.00
Jhansi	400	2167	52.6	47.4	5.4	83.00	16.75	0.25	0.00	0.00
Rural	300	1601	52.5	47.5	5.3	84.67	15.33	0.00	0.00	0.00
Urban	100	566	52.8	47.2	5.7	78.00	21.00	1.00	0.00	0.00
<i>UP</i>	<i>1000</i>	<i>5603</i>	<i>53.0</i>	<i>47.0</i>	<i>5.6</i>	<i>88.5</i>	<i>11.3</i>	<i>0.10</i>	<i>0.10</i>	<i>0.00</i>
Dausa	300	1704	52.7	47.3	5.7	91.67	8.33	0.00	0.00	0.00
Rural	250	1394	52.8	47.2	5.6	94.80	5.20	0.00	0.00	0.00
Urban	50	310	52.3	47.7	6.2	76.00	24.00	0.00	0.00	0.00
D. Pur	350	1819	52.4	47.6	5.2	92.00	3.71	0.00	0.00	4.29
Rural	250	1311	52.3	47.7	5.2	99.60	0.40	0.00	0.00	0.00
Urban	100	508	52.8	47.2	5.1	73.00	12.00	0.00	0.00	15.00
<i>Rajasthan</i>	<i>650</i>	<i>3523</i>	<i>52.6</i>	<i>47.4</i>	<i>5.4</i>	<i>92.00</i>	<i>3.71</i>	<i>0.00</i>	<i>0.00</i>	<i>4.29</i>
Slum	102	569	47.5	52.5	5.6	74.50	24.50	0.00	1.00	0.00
Non-slum	258	1368	52.3	47.7	5.3	89.53	4.65	3.49	1.94	0.39
<i>Delhi</i>	<i>360</i>	<i>1937</i>	<i>50.9</i>	<i>49.1</i>	<i>5.4</i>	<i>85.27</i>	<i>10.28</i>	<i>2.50</i>	<i>1.67</i>	<i>0.28</i>

Population size, sex and religious composition of the households covered in the study are provided in Table 2.2. While all other distributions in this table are on expected lines, the share of women in the sample of all the four districts in UP and Rajasthan is smaller — implying more men in many of the sample households than women. The slum households of Delhi are however the only exception where women constitute over 52

percent of the sample. In a situation of growing male migration, these results may look somewhat arbitrary. They however match fairly closely with the Census figures for 2001.

Hindus dominate the overall distribution of the sample population followed by the Muslims. Sikhs are only visible in Delhi. No other religion seems to have any significant presence in study areas selected from U.P. and Rajasthan. In terms of social groups, the sample represents the low and the backward castes (SC and OBC) fairly well; the former, for example, turns out to be over a fifth (22.6 percent) of the total sample while the latter is nearly double of that (38.7 percent) (see Table 2.3). The share of upper castes in the sample is relatively much smaller in Dausa (Rajasthan) due to the primacy of the lower castes and Scheduled Tribes in the region. As a whole, however, the upper castes constitute around a fourth of the total sample (Table 2.3).

Table 2.3: Share of Different Social Groups in Sample Population

Percent

Districts/States	Social Groups				Total
	SC	ST	OBC	Others	
Uttar Pradesh	23.90	2.60	51.70	21.80	100
Unnao	23.00	0.17	55.50	21.33	100
Jhansi	25.25	6.25	46.00	22.50	100
Rajasthan	20.46	33.08	29.23	17.23	100
Dausa	29.67	30.00	34.67	5.67	100
Dungarpur	12.57	35.71	24.57	27.14	100
Delhi	23.06	2.22	19.44	55.28	100
Slums	35.29	3.92	21.57	39.22	100
Non-Slum	18.22	1.55	18.6	61.63	100
Total Sample	22.64	12.39	38.66	26.32	100

2.2: Age-Sex Distribution of Sample Population, Average Household Size and Nuclearization of Families: Rural and Urban Areas

Age distribution of the sample population in all the districts (Table 2.4, Panel 1) reinforces the pattern observed for most of the country with very high share of working age populations in the 15 – 59 years age group, implying a large-scale pressure of jobseekers in coming years on the clearance mechanism of the labour market. As the current economic regime in the country is either incapable of creating adequate employment opportunities for such a high proportion of a billion plus population or capable of creating new opportunities only in low-wage informal economy, the issues of poverty, working poor and income

inequalities are likely to be more commonly prevalent in many of the areas under study.¹³ Out-of-pocket expenses on health and inadequate health provisioning obviously are of a much serious concern under these settings. We will examine some of these issues in subsequent chapters of this study.

Table 2.4: Age Distribution of Sample Population by Districts and States

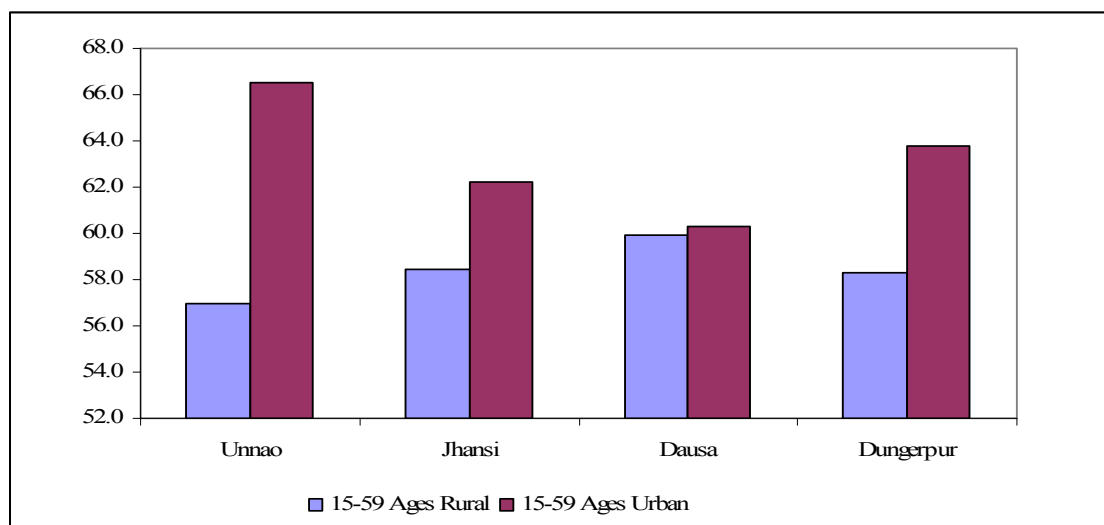
Percent

Panel 1: Age Distribution by Districts							
Districts/State	0 - 4	5 - 14	15 - 24	25 - 39	40 - 59	60 & more	Total
<i>Uttar Pradesh</i>	9.46	23.93	20.92	21.22	17.15	7.32	100.0
Unnao	9.14	24.56	21.57	20.58	17.05	7.10	100.0
Jhansi	9.97	22.93	19.89	22.24	17.31	7.66	100.0
Chi2 (6): 6.615				Pr. 0.358			
<i>Rajasthan</i>	9.42	24.55	20.92	22.17	16.80	6.13	100.0
Dausa	8.57	25.35	22.59	20.25	17.14	6.10	100.0
Dungarpur	10.23	23.80	19.35	23.97	16.49	6.16	100.0
Chi2 (6): 14.240				Pr. 0.027			
<i>Delhi</i>	8.42	20.39	21.48	22.20	19.51	8.00	100.0
Non-Slum	7.16	18.13	19.96	23.90	21.35	9.50	100.0
Slum	11.42	25.83	25.13	18.10	15.11	4.39	100.0
Chi2 (6): 52.577				Pr. 0.000			
Panel 2: Age Distribution of Sample Population by Rural and Urban							
<i>Unnao (UP)</i>							
Rural	9.94	26.41	21.25	19.77	15.94	6.68	100.0
Urban	6.49	18.48	22.6	23.22	20.72	8.49	100.0
Total	9.14	24.56	21.57	20.58	17.05	7.1	100.0
Chi2 (5): 38.904				Pr. 0.000			
<i>Jhansi (UP)</i>							
Rural	9.93	23.92	19.80	21.61	17.05	7.68	100.0
Urban	10.07	20.14	20.14	24.03	18.02	7.60	100.0
Total	9.97	22.93	19.89	22.24	17.31	7.66	100.0
Chi2 (5): 3.969				Pr. 0.554			
<i>Dausa (Raj)</i>							
Rural	8.25	25.47	22.96	19.44	17.50	6.38	100.0
Urban	10.00	24.84	20.97	23.87	15.48	4.84	100.0
Total	8.57	25.35	22.59	20.25	17.14	6.10	100.0
Chi2 (5): 5.445				Pr. 0.364			
<i>Dunger Pur (Raj)</i>							
Rural	10.60	24.41	19.76	22.88	15.64	6.71	100.0
Urban	9.25	22.24	18.31	26.77	18.70	4.72	100.0
Total	10.23	23.80	19.35	23.97	16.49	6.16	100.0
Chi2 (5): 8.515				Pr. 0.130			

¹³ For interesting discussions on some of these issues, see Rodgers (2007), Chakravarty and Mitra (2009), Carr and Chen (2004), RoyChowdhury (2007), etc.

Social Groups	Panel 3: Age Distribution of Sample Population by Social Groups						
SC	9.56	24.85	22.09	20.23	16.59	6.67	100.0
ST	10.29	28.36	20.28	21.09	15.14	4.85	100.0
OBC	9.43	23.91	21.66	21.59	16.9	6.5	100.0
HIGH CASTE	8.24	19.33	19.4	23.47	20.22	9.34	100.0
Total	9.27	23.51	21.02	21.69	17.45	7.06	100.0
Chi2 (15): 105.604							Pr. 0.000

Figure 2.1: Rural-Urban Differences in Shares of Working Age (15-59) Population



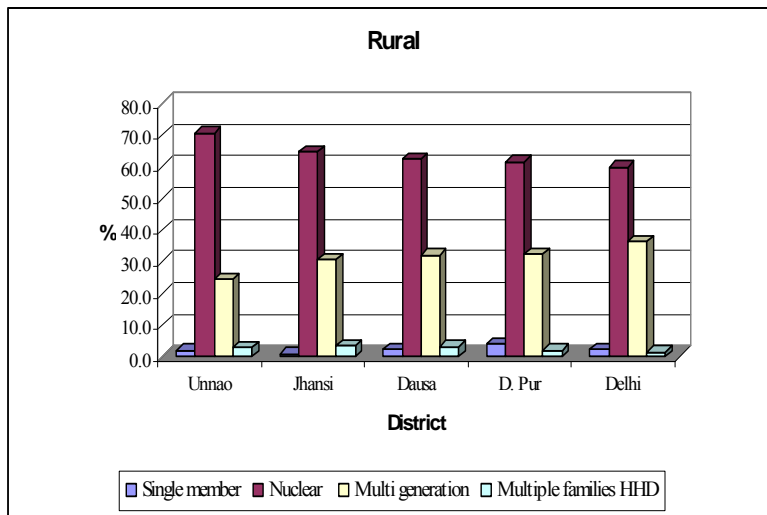
Source: Table 2.4, Panel 2.

Another notable observation stemming from Table 2.4 (Panel 2, see also Figure 2.1) relates to the differentials in rural-urban age composition of populations. The higher proportions of 15-59 populations in all the four urban locations (Figure 2.1) are indicative of the following: (i) there appears to be a considerable degree of migration to cities by working age rural people, and (ii) the pattern of age distribution given in Table 2.4 (Panel 2) is indicative of the pattern of health care services required in areas under study. A higher proportion of 15-59 population may, *inter alia*, bring greater demand for reproductive and child care services. Similarly, a growing proportion of the older persons (considered in this analysis as those over 60) may press for geriatric services required for treatment of older persons. Significance of χ^2 in several cases indicates location (i.e. rural/urban) and caste (see panel 3 of Table 2.4) as influencing factors to bring differentials in age composition of populations.

Table 2.5: Type of Sample Households

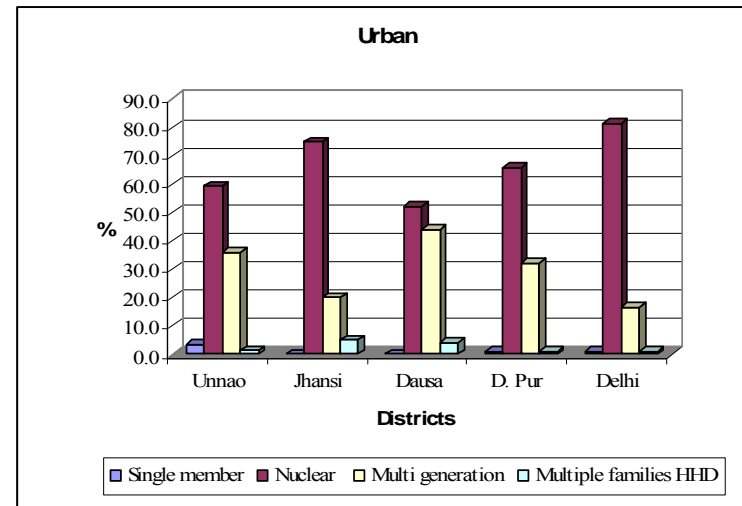
Type of Households	Unnao			Jhansi			Dausa			Dunger Pur			Delhi		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Slum	Non-slum	Total
Single Member	2.2	3.3	2.5	1.0	0.0	0.8	2.4	0.0	2.0	4.0	1.0	3.1	2.3	1.0	1.9
Nuclear	70.4	59.3	67.7	64.7	75.0	67.3	62.4	52.0	60.7	61.6	66.0	62.9	59.7	81.4	65.8
Multigenerational	24.4	36.0	27.3	30.7	20.0	28.0	32.0	44.0	34.0	32.4	32.0	32.3	36.4	16.7	30.8
Multi-families	2.9	1.3	2.5	3.7	5.0	4.0	3.2	4.0	3.3	2.0	1.0	1.7	1.6	1.0	1.4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Chi2(3) = 9.193 Pr. = 0.027			Chi2(3) = 5.572 Pr. = 0.134			Chi2(3) = 3.788 Pr. = 0.285			Chi2(3) = 2.686 Pr. = 0.443			Chi2(3) = 15.336 Pr. = 0.002		
Female Headed HHDs (%)	7.0	8.7	7.5	4.7	4.0	4.5	8.0	6.0	7.7	7.2	7.0	7.1	10.8	10.9	10.8

Fig. 2.2(a): Type of Households: Rural



Source: Table 2.5

Fig. 2.2(b): Type of Households: Urban



Source: Table 2.5

From the viewpoint of living arrangement, India is fast moving toward becoming a nuclear household society and this has emerged from various data sources including the most recent National Family Health Survey (NFHS-3) conducted across the country in 2005-06. The NFHS-3 revealed that 60.5 percent of the households at the all India level were nuclear and only the remaining 40.5 percent were either multigenerational or constituted by other forms of households. What was, however, to some extent surprising is that states like U.P. and Rajasthan, generally considered as traditional with older values still in practice, have also been turning to become dominantly nuclear with families comprising parents and dependent children. This may be noticed from Table 2.5 and its two graphs shown in Figures 2.2a and 2.2b. U.P. appears to be more nuclear than Rajasthan, though a more definitive argument cannot be made on the basis of this data. On hindsight, however, it appears that irrespective of location, families are changing their traditional roles and turning to participate more in income generating activities. This may however pose many serious questions including the one that arises from the growing need for elderly care or caring for the sick and disabled family members.

Average size of the sample households stood between 5 and 6 with the lowest (5.3) relating to the non-slum urban households in Delhi (Table 2.2). The share of female-headed households is also relatively higher in Delhi (Table 2.5), though a big majority of them comes from the loner (or one person) households.

Appendix Table 2.1**Distribution of Sample Populations in Delhi: Slum and Non-Slum Households**

Districts	Sample Population: Non-Slum			Sample Population: Slums		
	Male	Female	Total	Male	Female	Total
West Delhi	14.0	14.3	14.1	15.9	12.0	13.9
Central Delhi	4.9	4.4	4.7	5.9	3.0	4.4
South Delhi	18.0	17.6	17.8	24.8	24.4	24.6
East Delhi	11.3	11.3	11.3	17.0	18.7	17.9
New Delhi	1.0	1.2	1.1	1.1	1.3	1.2
North West Delhi	20.5	21.0	20.8	13.3	14.0	13.7
North Delhi	6.3	5.5	5.9	7.0	9.4	8.3
South West Delhi	10.1	11.3	10.7	1.1	0.7	0.9
North East Delhi	14.0	13.2	13.6	13.7	16.4	15.1
Total Delhi (Nos)	716	652	1368	270	299	569

Source: OOP Spending on Health Survey, 2008

References

Chakravarty, Sangeeta and Arup Mitra, Is Industry still the engine of growth? An econometric study of the organized sector employment in India, *Journal of Policy Modeling*, Vol. 35, pp. 22-35, 2008.

Carr, Marilyn and Martha Chen, *Globalization, Social Exclusion and Work: with special Reference to Informal Employment*, World Commission on the Social Dimension of Globalization, Background Paper, Policy Integration Department Working Paper, No. 20, 2004 International Labour Organisation (ILO), Geneva.

RoyChowdhury, Supriya, Informality in Globalized Form of Production, *The Indian Journal of Labour Economics*, Vol. 50(4), 2007, pp. 765-74.

Rodgers, Gerry, Decent Work, Social Inclusion and Development, *Indian Journal of Human Development*, Vol. (1): 2007, pp. 21-32.

National Family Health Survey (2005-06), *National Family Health Survey (NFHS-3)*, Ministry of Health and Family Welfare, Government of India and International Institute for Population Sciences, September 2007, Volume 1, p. 23.

Socio-Economic Variations, Consumption Poverty and Health Generated Inequalities in Sample Population

3.1: Socio-Economic Characteristics of Sample Population

The preceding chapter highlights a few socio-demographic attributes of the sample households drawn from selected districts/tehsils in U.P., Rajasthan and Delhi. It was noticed from the analysis of these attributes that the capital city of Delhi has certain advantages over the rest, although there appears to be some notable differences between its slum and the non-slum households. The two, for example, differed largely in terms of sex distributions. To be more specific, of all the locations and districts covered in the study, a higher fraction of female population may only be noticed in the slum households in Delhi. In addition, the share of their youth population in 15-24 age groups is also relatively higher, indicating certain differentials in their fertility behavior with the rest.

All along these spatial differentials, there is another interesting phenomenon emanating from the same discussion – i.e., a large-spread and abounding nuclearization of families even in villages of U.P. and Rajasthan where many traditional values are still in vogue. This phenomenon of fast growing changes in family norms and erosion of traditional forms of living may cause difficulties to many - especially while coping with serious family matters such as prolonged ailments or long-term care provisioning for the aged, diseased or functionally disabled. There may be added complexities if the households and its members are also goaded with poor literacy levels, lack of participation in remunerative economic activities, poor consumption levels and forced to rely on their own to meet expenses borne out by unexpected events like ailments and medications. We try to examine some of these issues focusing on sample of populations described in the preceding chapter. A great deal of this chapter is particularly devoted to overall and health driven poverty among the sample population.

Educational Status of Sample Population

The educational distribution of sample population in Table 3.1 does in no way contribute to the perception of any marked improvement in social status of populations in districts of both the major states under consideration. The same may as well be true for the slum households in Delhi.

Table 3.1: Literacy Level of Sample Populations (Percent)

Educational Level	Panel 1: U.P.					
	Unnao			Jhansi		
	Male	Female	Total	Male	Female	Total
Illiterate	23.7	41.7	32.1	22.9	45.0	33.4
Lit. without formal edu	2.1	2.0	2.0	2.4	1.0	1.7
Up to 5 th Standard (Primary)	34.5	27.8	31.4	28.4	28.3	28.4
7 th - 8 th standard (Middle)	17.7	13.7	15.8	23.8	13.7	19.0
Matriculate	9.7	6.1	8.0	8.7	5.1	7.0
Higher Secondary	5.7	4.9	5.3	6.5	3.7	5.2
Graduates & Above	5.6	3.2	4.5	6.0	3.0	4.6
Diploma/Certificate	0.6	0.2	0.4	1.1	0.2	0.7
Degree in Tech/Prof edu	0.4	0.4	0.4	0.2	0.0	0.1
Total Literacy Level	76.3	58.3	67.9	77.1	55.0	66.6
Literate + Illiterate	100.0	100.0	100.0	100.0	100.0	100.0
Chi Sq.(9)	Chi Sq. (9) = 136.421 Pr. = 0.000			Chi Sq. (9) = 153.224 Pr. = 0.000		
	Panel 2: Rajasthan					
	Dausa			Dungerpur		
	Male	Female	Total	Male	Female	Total
Illiterate	21.2	49.4	34.5	22.9	38.8	30.5
Lit. without formal edu	1.0	1.0	1.0	1.6	2.4	2.0
Up to 5 th standard (Primary)	28.6	28.6	28.5	30.3	28.2	29.3
7 th - 8 th standard (Middle)	27.3	15.4	21.7	19.3	14.7	17.1
Matriculate	11.8	4.5	8.3	10.1	7.9	9.0
Higher Secondary	5.5	0.9	3.3	6.9	4.2	5.6
Graduates & Above	4.5	0.3	2.5	6.6	3.0	4.9
Diploma/Certificate	0.1	0.0	0.1	0.4	0.0	0.2
Degree in Tech/Prof edu	0.2	0.1	0.2	2.0	0.8	1.4
Total Literacy Level	78.8	50.6	65.5	77.1	61.2	69.5
Literate + Illiterate	100.0	100.0	100.0	100.0	100.0	100.0
Chi Sq. (9)	Chi Sq. (9) = 212.086 Pr. = 0.000			Chi Sq. (9) = 74.900 Pr. = 0.000		
	Panel 3: Delhi					
	Non-Slum			Slum		
	Male	Female	Total	Male	Female	Total
Illiterate	9.5	19.6	14.3	25.9	44.5	35.7
Lit. without formal edu	0.4	1.4	0.9	1.5	1.3	1.4
Up to 5 th standard (Primary)	25.2	20.7	23.1	43.3	39.2	41.1
7 th - 8 th standard (Middle)	13.0	11.5	12.3	15.2	9.4	12.1
Matriculate	15.5	13.0	14.3	9.3	4.4	6.7
Higher Secondary	11.9	12.0	11.9	3.3	1.0	2.1
Graduates & Above	16.8	16.7	16.7	1.5	0.3	0.9
Diploma/Certificate	1.0	1.5	1.2	0.0	0.0	0.0
Degree in Tech/Prof edu	6.8	3.5	5.3	0.0	0.0	0.0
Total Literacy Level	90.5	80.4	85.7	74.1	55.5	64.3
Literate + Illiterate	100.0	100.0	100.0	100.0	100.0	100.0
	Chi2 (9) = 41.068 Pr.= 0.000			Chi2 (7) = 38.386 Pr. = 0.000		

Admittedly, while none of these samples are representative in character and may not therefore be used to make generalizations, there is indeed an indication that a very large percentage of people in smaller towns and low income residential areas of places like Delhi are either illiterate or semi-literate with their educational attainments perhaps not

adequate to prevent poor health and poverty. Table 3.1 brings out these facts very clearly. Broadly, about a third of the total sample population (i.e., between 30 to 36 percent) in most of these places is shown as completely illiterate with the highest level of illiteracy being found among the slum residents in Delhi. Another 50 percent of them are below matriculate with a large fraction being simply educated up to the primary level or even less. Only about a twentieth of the total respondents were holding a degree from higher educational institutions. There was also a very small fraction of respondents in all the three states with a degree or diploma in professional courses (Table 3.1).

Another significant, though a long drawn, observation stemming from Table 3.1 is a considerably higher gender gap in levels of educational attainment. That the sex of an individual does have a role in educational attainment is clearly evident from the Chi2 test as well (see χ^2 values in Table 3.1).

The usual rural-urban divide in terms of educational status of populations has remained clearly visible from our sample as well, with residents living in urban areas being better educated, than their rural counter parts. These details are given in an Appendix Table both for the entire sample as well as for two major states under consideration. Like sex, individuals' place of residence is also an important source of differentials in educational status, and the χ^2 values in Appendix Table 1 reflect this significantly.

Indeed, while most of what has been described in the preceding discussion may not look different from many other studies or help to find an out-of-box solution to these long drawn and well recognized issues (see, for example, Probe Team Report, 1999; Shekhar and Rani, 2003; Dreze and Murthi, 2001), they may nevertheless prove as a marker to substantiate the argument that the country and its planning bodies may not be able do much in terms of health as long as states like U.P. and Rajasthan — with a considerably high weightage in country's overall population — remain educationally weak. In addition, the current regime of the National Rural Health Mission (NRHM), believed to work wonders in improving the health status of rural people, may or may not go beyond a certain limit. A more holistic regime covering post-primary education and all other health domains beyond reproductive health may need to be developed.

Work Status of Sample Population

Functional status of the sample population has been obtained by going into the following details. Initially, all the respondents were asked to provide their activity status – namely, working or non-working. Those who reported working were again classified into ‘main’ and ‘marginal’ workers — with the former including men and women engaged physically or mentally in certain income generating activities for most of the year (those with a lesser duration of paid work were categorized as the marginal workers). Finally, all the workers were re-grouped into: (i) regular workers, (ii) casual workers with uncertain length of employment, (iii) those working on their own or engaged in small family businesses, and (iv) persons employed under the ongoing National Rural Employment Guarantee Act (NREGA).

Table 3.2: Activity Status of Household Population (N = 11, 063)

Activity Status	U.P. (Unnao + Jhansi)			Unnao			Jhansi		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Working	49.1	7.7	29.6	48.3	7.0	29.1	50.2	8.9	30.6
Not Working	50.9	92.3	70.4	51.7	93.0	71.0	49.8	91.2	69.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N (Number)	2972	2631	5603	1833	1603	3436	1139	1028	2167
Chi2	1.1E+03	Pr	0.0E+00	709.444	Pr.	0.000	435.442	Pr	0.000
	Rajasthan (Dausa + D. Pur)			Dausa			Dunger Pur		
Activity Status	Male	Female	Total	Male	Female	Total	Male	Female	Total
Working	48.2	16.3	33.1	45.6	8.1	27.8	50.6	24.1	38.0
Not Working	51.8	83.7	66.9	54.5	91.9	72.2	49.4	76.0	62.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N (Number)	1852	1671	3523	898	806	1704	954	865	1819
Chi2	402.014	Pr	0.000	297.182	Pr.	0.000	136.084	Pr	0.000
	Delhi (Slum + Non-slum)			Slum			Non-Slum		
Activity Status	Male	Female	Total	Male	Female	Total	Male	Female	Total
Working	48.4	11.7	30.4	49.3	10.0	28.7	48.0	12.4	31.1
Not Working	51.6	88.3	69.6	50.7	90.0	71.4	52.0	87.6	68.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N (Number)	986	951	1937	270	299	569	716	652	1368
Chi2	3.1E+02	Pr.	0.000	106.802	Pr.	0.000	202.194	Pr.	0.000

Drawing upon the criteria noted above, functional status of the sample population is described in the rest of this discussion with two specific points to bear underlined clearly. First, the results of this analysis suggest a somewhat lower activity status of the population under reference; however, in several cases, it matches fairly closely with the

Census figures obtained for corresponding districts in 2001 Census (see Appendix Table 3.2). And second, the female activity status in our case appears to be at a lower side and may therefore be an underestimate. Such issues however arise in surveys focusing on non-labour issues.

Table 3.3: Functional Status of Sample Population by Rural-Urban and Social Groups

Analytical Variables	Working (%)	Not Working (%)	Row Total (%)	N (Number)	Chi 2	
					Value	Pr.
Panel 1: Rural - Urban						
Unnao						
Rural	28.7	71.3	100.0	2,635	0.550	0.458
Urban	30.1	69.9	100.0	801		
Jhansi						
Rural	31.4	68.6	100.0	1,601	1.668	0.197
Urban	28.5	71.6	100.0	566		
U.P. Total	29.6	70.4	100.0	5,603		
Dausa						
Rural	28.2	71.8	100.0	1394	0.538	0.463
Urban	26.1	73.9	100.0	310		
Dunger Pur						
Rural	40.6	59.4	100.0	1311	13.386	0.000
Urban	31.3	68.7	100.0	508		
Rajasthan Total	33.07	66.93	100.0	3523		
Delhi Slum	28.7	71.3	100.0	569	1.114	0.291
Delhi Non-slum	31.1	68.9	100.0	1368		
Delhi Total	30.4	69.6	100.0	1937		
Panel 2: Total Sample (U.P., Rajasthan & Delhi) by Sex and Rural-Urban						
Male	48.7	51.3	100.0	5,810	1.8e+03	0.000
Female	11.2	88.8	100.0	5,253	DF (1)	
Male-Female Combined	30.9	69.1	100.0	11,063		
Rural	31.5	68.5	100.0	6,941	3.202	0.074
Urban	29.8	70.2	100.0	2,185		
Rural-Urban Combined	30.9	69.1	100.0	11,063		
Panel 3: Social Groups						
Scheduled Caste (SC)	30.2	69.8	100.0	2,531	17.687	0.001
Scheduled Tribe (ST)	35.5	64.5	100.0	1,361		
Other Backward (OBC)	29.6	70.4	100.0	4,367		
Upper Caste (HC)	31.2	68.8	100.0	2,804		

DF = Degrees of freedom.

It appears from the figures given in Table 3.2 that less than a third of the total sample population in majority of cases is economically active with considerable gender differentials. Barring Dunger Pur in Rajasthan, nowhere the shares of working women exceed over 13 percent of their reported total population. With almost a quarter of total women engaged in one or the other economic activities, Dunger Pur has indeed remained

distinct from all other districts under study (Table 3.2). The χ^2 values also indicate gender as an important distinguishing factor between men and women in their functional status.

Unlike gender, place of residence apparently plays hardly any significant role in pushing families and households to become economically more engaged. The figures given in Table 3.3 do not show too many major differences in activity status of rural and urban households recruited from different districts/tehsils. Barring Dunder Pur where differentials in activity status between rural and urban areas is considerably large (see panel 1 of Table 3.3), there is no similar example from any other places covered in the study. In all other cases, the observed differentials remained marginal. This is true for the slums and non-slums in Delhi as well.

A distribution of sample population into four social groups – SC, ST, OBC and High Castes – reveals that the highest fraction of ‘working’ people belonged to the Scheduled Tribes category with more than 35 percent of them having reported themselves as economically active (Panel 3, Table 3.3). The rest three (in particular SC and OBC) were significantly behind and the size of their working males and females were in the vicinity of 30 to 31 percent of their respective populations.

About three quarters (74.2 percent) of the working males have reported themselves as the main workers – implying they had paid employment for about 180 days or more during most of the preceding 12 months. The rest however failed to meet this criterion and reported being unemployed for a greater part of the year. They were therefore considered as marginal workers (Table 3.4, Panel1). Women, as usual, suffered from double jeopardy; only a fewer of them were working, and those working were mostly in low-quality unskilled employment (Panel 2, Table 3.4).

Table 3.4: Workers by Type and Nature of Activities: Gender, Rural-Urban and Social Groups

Analytical Variables	Type of Workers			Nature of Work			
	Total Workers	Main Workers	Marginal Workers	Regular	Casual	Own Account*	NREGS**
Panel 1: Total Sample							
Tot. Sample	3,414	74.2	25.8	29.1	35.6	7.7	27.7
Male	2,827	80.4	19.6	29.5	38.3	30.3	1.9
Female	587	44.3	55.7	26.9	22.2	15.3	35.6
Rural	2,184	63.4	36.6	18.5	45.0	24.6	12.0
Urban	1,230	93.4	6.6	47.9	18.8	33.3	0.1
Panel 2: Distribution by Gender & Place of Residence							
Unnao							
Male	886	73.1	26.9	24.5	35.3	2.3	37.9
Female	112	49.1	50.9	29.5	42.0	0.0	28.6
Chi2	27.576	Pr.	0.000	chi2 (3)	7.082	Pr.	0.069
Rural	757	64.9	35.1	17.8	40.4	39.1	2.6
urban	241	88.0	12.0	47.7	22.4	29.9	0.0
Jhansi							
Male	572	75.9	24.1	12.2	56.3	30.4	1.1
Female	91	46.2	53.9	17.6	61.5	17.6	3.3
Chi2	34.246	Pr.	0.000	chi2 (3)	9.544	Pr.	0.023
Rural	502	67.3	32.7	10.8	64.7	22.7	1.8
Urban	161	85.7	14.3	19.9	32.9	47.2	0.0
Dausa							
Male	409	74.8	25.2	20.8	56.5	22.3	0.5
Female	65	23.1	76.9	10.8	20.0	6.2	63.1
Chi2	68.685	Pr.	0.000	chi2 (3)	266.832	Pr.	0.000
Rural	393	64.1	35.9	19.3	54.5	15.3	10.9
Urban	81	85.2	14.8	19.8	37.0	43.2	0.0
D. Pur							
Male	483	85.9	14.1	40.2	32.5	22.4	5.0
Female	208	18.3	81.7	12.0	3.4	5.3	79.3
Chi2	294.697	Pr.	0.000	chi2 (3)	406.866	Pr.	0.000
Rural	532	56.9	43.1	25.9	25.9	12.6	35.5
Urban	159	94.3	5.7	50.9	16.4	32.7	0.0
Slum							
Male	133	96.2	3.8	45.9	27.8	25.6	0.8
Female	30	100.0	0.0	43.3	13.3	43.3	0.0
Total	163	96.9	3.1	45.4	25.2	28.8	0.6
Chi2 (1)	0.164	Pr.	0.281	Chi2 (3)	4.983	Pr.	0.173
Non-Slum							
Male	344	99.4	0.6	60.2	7.0	32.9	0.0
Female	81	98.8	1.2	79.0	3.7	17.3	0.0
Total	425	99.3	0.7	63.8	6.4	29.9	0.0
Chi2 (1)	0.399	Pr.	0.528	Chi2 (3)	10.070	Pr.	0.007
Panel 3: Distribution by Social Groups							
Social Gr.							
SC	764	72.0	28.0	29.7	44.6	19.5	6.2
ST	483	53.2	46.8	16.6	49.1	9.1	25.3
OBC	1,292	73.3	26.7	23.0	38.2	33.8	5.0
UC	875	89.0	11.0	44.3	16.3	36.1	3.2
Total	3,414	74.2	25.8	29.1	35.6	27.7	7.7
Chi2 (3)	214.143	Pr.	0.000	Chi2 (9)	598.717	Pr.	0.000

* Including those working in family businesses. ** Persons employed under the National Rural Employment Guarantee Scheme.

A considerably large fraction of the unskilled employment created under the National Rural Employment Guarantee Act (NREGA, September 2005) to improve

livelihood conditions of rural households has seemingly gone to women, especially in both the districts of Rajasthan. In contrast however a bulk of employed women in U.P. is engaged in highly unsecured casual employment. In addition, they were also reportedly working in small home-based activities as self-employed or were own-account workers. Both underscore the earlier argument suggesting women being a lower partner in economic well-being.

In addition to women, many of those engaged in lower category employment invariably comprise persons from the lower echelons of the caste hierarchy including the SC (29.7 percent in regular employment and the rest as casuals, self-employed or NREGS created activities), ST (16.6 percent in regular employment) and OBC (23 percent in regular employment) (Table 3.4, Panel 3).

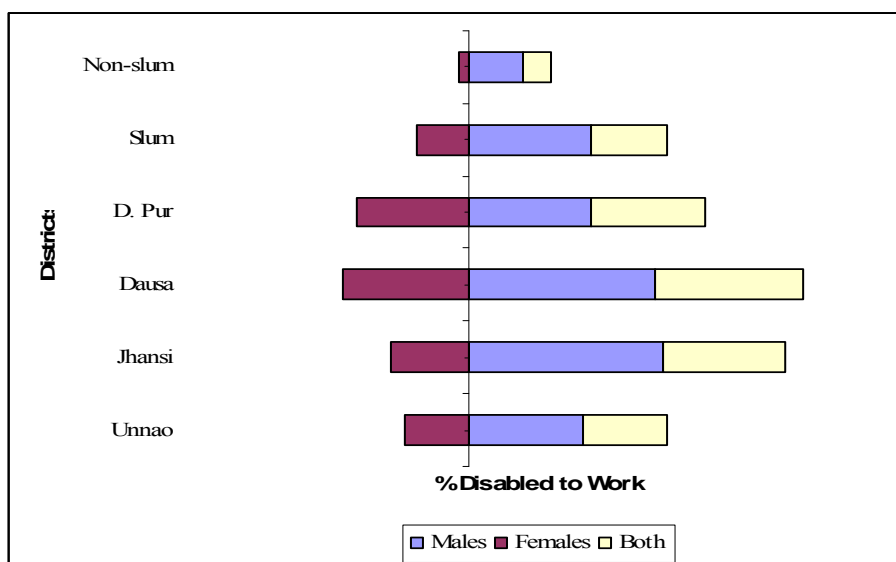
Table 3.5: Distribution of Non-Working Sample Population by States and Districts (%)

	Unnao			Jhansi		
	Males	Females	Both	Males	Females	Both
Retired	4.5	1.9	2.9	1.6	0.1	0.7
Weak, Frail, Disabled, Mentally Weak	4.0	2.3	3.0	6.9	2.8	4.3
Students	57.1	30.9	41.1	58.1	27.4	39.0
Unemployed	11.9	8.5	9.8	8.5	4.9	6.3
Housewives	0.2	44.3	27.2	0.2	48.5	30.3
Non-school going children	21.5	11.5	15.4	21.7	13.3	16.5
Others/Voluntarily unemployed	0.6	0.6	0.6	3.0	3.0	3.0
<i>N</i>	947	1,491	2,438	566	937	1,503
Chi2 (8)	577.408 Pr. 0.000			406.016 Pr. 0.000		
	Dausa			Dunger Pur		
Retired	1.6	0.4	0.9	3.0	0.2	1.3
Weak, Frail, Disabled, Mentally Weak	6.6	4.5	5.3	4.3	4.0	4.1
Students	66.6	30.9	45.1	59.7	35.2	45.4
Unemployed	5.1	6.9	6.2	5.9	4.0	4.8
Housewives	0.2	46.4	28.1	0.0	40.8	23.8
Non-school going children	19.3	10.1	13.8	27.0	13.4	19.1
Others/Voluntarily unemployed	0.6	0.8	0.7	0.2	2.6	1.6
<i>N</i>	488	741	1,229	471	657	1,128
Chi2 (8)	340.051 Pr. 0.000			284.681 Pr. 0.000		
	Delhi Slum			Delhi Non-slum		
Retired	1.5	0.4	0.7	8.6	2.1	4.67
Weak, Frail, Disabled, Mentally Weak	4.3	1.9	2.7	1.9	0.4	1.0
Students	54.4	28.6	37.4	64.8	30.1	43.8
Unemployed	15.9	9.7	11.8	5.1	4.0	4.5
Housewives	0.7	33.8	22.6	0.3	44.0	26.7
Non-school going children	21.0	19.0	19.7	13.2	8.8	10.5
Others/Voluntarily unemployed	2.2	6.7	5.2	6.2	10.7	8.9
<i>N</i>	138	269	407	372	571	943
Chi2 (8)	71.772 Pr. 0.000			259.581 Pr.0.000		

Non-Working Population

Table 3.5 presents a few important underlying factors responsible for a big majority of the respondents to be out of the workforce. One of the most significant factors keeping a big majority of the younger population out of workforce is the participation in educational activities. It turns out to be the case in all the districts including slums and non-slums. It may however be interesting to note a big gender gap in reporting education as a reason for non-participation in labour force activities. Also this gap exists irrespective of the places under study and includes even households from the non-slum areas of Delhi. Another dominant reason for not being able to work is unemployment, especially among the people of Unnao in U.P. and slums of Delhi. A significant proportion of people at both the places do not work for lack of employment.

Figure 3.1: District-wise Share of Men and Women Disabled to Work



A more disturbing factor to notice from Table 3.5 is the share of non-school going children in almost every district and slums. While a big majority of those children (i.e., over three quarters) were too young and below 4 years of ages, almost a fifth of them were grown up and in higher ages as well.¹⁴ Their not attending schools, that too in most places, may look problematic. At stake in a situation like this may be the future of the demographic bonus India is expected to harness in coming years to add to its economic prospects.

¹⁴ A further scrutiny of this data reveals that around 80 percent of them were in 0-4 age group. The rest were however between 5-14 years of age.

Those adding to the size of non-working household population also include a fraction of persons comprising mentally or physically challenged. A small number of persons have also reported to withdraw from active work force because of post sickness frailty or senescence. Males in most of these cases outnumber females (Figure 3.1), perhaps partly on account of the reporting biases. Dausa in Rajasthan reports such cases more than U.P. or Delhi.

3.2: Quality of Life, Consumption Poverty and Inequalities among Sample Households

Three broader issues are subjected to a brief examination in the underlying discussion. First, quality of life of households in terms of selected physical assets owned by groups of people under study and their access to various services relevant on health considerations including domestic power, cooking fuel, sources of water for drinking purposes, toilet system, nearby ponds/river/nullah causing dampness and mosquito breeding, scavenging, waste disposal, drainage facilities through public means, telephone communication, and access to banking facilities, etc. The other two issues to be examined in the underlying context include the levels and differentials in per capita consumption expenditure of the sample households, which are later used to draw inferences about existing inequalities, consumption poverty and health outcomes of households drawn specifically from high poverty locations and states. To the extent possible, most of these issues are examined by allowing for differentials between the rural-urban and the slum-non-slum households. Interpretation of our results must however be within the constraints imposed by a small and purposive sampling procedure.

Quality of Life: Housing Conditions, Possessions and Access to Basic Services

Given the broader concerns of this study — which *inter alia* requires examining the size and burden of self-paid health care accessed by households from low income rural, urban and slum areas of three selected states — it may not be very unlikely to expect a slant in favour of households with poor or moderate living conditions. This comes out very clearly from the bivariate tables given in most of this section to highlight the quality of houses and the facilities availed to the sample population. Table 3.6 and its two sub-tables (i.e., Tables 3.6a and 3.6b) bring out very clearly the poor economic background of most households under consideration. Each of these three tables indicates

a very modest living by a big majority of the respondents, most of them residing in non-bricked (*kutch*a) dwellings and without most of the facilities required for a healthy living.

The three preceding tables have clearly revealed that a very large number of families in rural and urban areas still reside in *kutch*a or semi-*kutch*a houses without many of the basic amenities like better (smoke free) cooking fuel, drainage system, toilet facilities, scavenging and so on to their access (see tables 3.6a and 3.6b). The situation is far worse among the rural residents where almost 9 out of 10 houses are non-bricked and their residents survive without an in-house toilet or scavenging facilities. These and most other facts emanating from Table 3.6a clearly raises many big questions about the health prospects of rural people who are apparently torn between two basic issues — first, a more or less complete lack of preventive mechanism like drainage, regular scavenging, pit/flush toilets, smoke free cooking fuels and so on. The other significant issue arises due to lack of concern among health officials about the need for non-reproductive health care services, leaving a big fraction of rural households in the clutches of private health care providers. The former, which indicates a lack of preventive mechanism, is also an issue that needs to be examined by keeping in mind the financial status of urban and rural bodies which are largely responsible for disease preventive services like scavenging, waste disposal and creation of all weather drainage system. As most of the local governments/bodies are generally constrained because of poor governance and suffer from inadequate finances (partly because of their inelastic tax revenues), they usually remain non-functional in terms of services required to prevent many non-life-style diseases.

Urban areas, as expected, remained considerably better and have been able to offer many of the basic facilities to a much bigger fraction of the sample population. And yet, many of the respondents did report poor housing conditions and lack of civic services like choked drainage and infrequent scavenging (Table 3.6b). Inequalities in access to many of these facilities may as well be noticed across socio-religious groups.

Table3.6: Quality of Houses and Access to Daily Life Services & Amenities: Total Households

Variables	N	Kutch a & Semi-Kutch a	Pucca House	Percent											
				Lighting Arrangement		Cooking Fuel		Toilet			Drainage (Kutch a Nali)	Safe Drinking Water	Scavenging		
				Electricity	Kerosene & Others	LPG	Coal, Firewood, Kerosene	Flush Toilet	Pit Toilet	Field & Others			Weekly	Monthly	Rarely
Total Sample	2010	60.3	39.7	53.6	46.4	30.9	69.1	14.6	25.9	59.5	12.8	96.3	46.9	5.8	47.3
UP	1000	74.8	25.2	28.8	71.1	19.9	79.1	10.5	17.3	72.2	50.5	97.4	29.8	10.7	59.5
Unnao	600	70.3	29.7	28.8	71.0	24.7	74.3	17.5	12.7	69.8	51.3	96.7	22.7	13.1	64.1
Jhansi	400	81.5	18.5	28.8	71.3	12.8	86.3	0.0	24.3	75.8	49.3	98.5	43.8	6.0	50.3
Rajasthan	650	62.2	37.9	66.6	33.1	20.3	78.8	0.0	29.1	70.9	24.0	92.5	55.1	10.1	34.8
Dausa	300	65.7	34.3	60.7	39.0	10.7	88.7	0.0	21.7	78.3	20.0	96.3	61.3	8.1	30.7
Dungarpur	350	59.2	40.9	71.7	28.0	28.6	70.3	0.0	35.4	64.6	27.4	89.1	51.0	11.5	37.5
Delhi	360	16.7	83.3	99.2	0.8	80.3	8.9	40.3	44.2	15.6	48.6	100.0	73.4	8.3	18.3
Slums	102	46.1	53.9	97.1	2.9	46.1	22.6	0.0	64.7	35.3	76.5	100.0	50.0	7.3	42.7
Non-slum	258	5.0	95.0	100.0	0.0	93.8	3.5	54.3	36.1	9.7	37.6	100.0	80.9	8.6	10.6
Religion															
Hindu	1789	61.1	38.9	52.8	47.0	29.7	67.5	12.3	24.2	63.5	39.1	95.9	47.0	10.4	42.6
Muslim	188	62.8	37.2	53.2	46.8	30.3	66.5	9.0	36.7	54.3	63.3	98.9	37.8	7.4	54.8
Social Gr.															
SC	455	65.9	34.1	48.4	51.7	21.8	73.4	7.5	22.4	70.1	56.7	97.1	100.0	0.0	0.0
ST	249	85.1	14.9	37.8	61.9	6.4	92.0	1.2	6.8	92.0	4.8	85.9	0.0	0.0	100.0
OBC	777	69.0	31.0	45.1	54.7	23.9	74.4	6.7	24.5	68.9	49.2	97.2	38.9	5.6	55.6
Upper Caste	529	31.0	69.0	78.3	21.7	60.3	36.7	30.4	40.1	29.5	42.7	99.1	33.3	11.9	54.8

Table3.6a: Quality of Houses and Access to Daily Life Services & Amenities: Rural Households
(Percent)

Instrumental Variables	Sample Households (N)	Kutcha & Semi Kutcha House	Pucca House	Lighting Arrangement		Safe* Drinking Water	Cooking Fuel			Toilet			Drainage	Scavenging	
				Electricity	Kerosene & Others		LPG	Firewood	Others	Flush toilet, inside	Pit Toilet	Field & Others	Kutcha Nali	Frequently	Rarely
Total Rural	1250	81.4	18.6	28.8	71.2	94.2	6.2	93.0	0.8	3.6	9.7	86.7	30.1	4.4	95.6
UP	750	87.3	12.7	9.6	90.4	96.8	4.3	94.9	0.8	3.5	6.4	90.1	44.9	7.2	92.8
Unnao	450	85.8	14.2	8.2	91.8	95.6	6.7	92.7	0.7	5.8	3.8	90.4	52.4	8.5	91.5
Jhansi	300	89.7	10.3	11.7	88.3	98.7	0.7	98.3	1.0	0.0	10.3	89.7	33.7	4.0	96.0
Rajasthan	500	72.4	27.6	57.6	42.4	90.2	9.2	90.0	0.8	0.0	14.6	85.4	7.8	4.9	95.1
Dausa	250	69.6	30.4	54.0	46.0	95.6	5.6	94.0	0.4	0.0	12.4	87.6	7.2	10.0	90.0
Dungarpur	250	75.2	24.8	61.2	38.8	84.8	12.8	86.0	1.2	0.0	16.8	83.2	8.4	0.0	100.0
Religion															
Hindu	1152	81.3	18.8	29.3	70.7	93.8	6.2	93.0	0.9	1.7	9.5	88.8	28.2	8.0	92.0
Muslim	98	82.7	17.4	22.5	77.6	99.0	7.1	92.9	0.0	6.1	12.2	81.6	52.0	0.0	100.0
Soc. Gr.															
SC	291	82.8	17.2	23.0	77.0	96.2	3.1	95.9	1.0	0.3	8.3	91.4	35.1	2.8	97.2
ST	231	88.3	11.7	33.3	66.7	84.9	3.0	96.1	0.9	0.0	3.5	96.5	1.7	0.0	100.0
OBC	527	84.1	15.9	23.5	76.5	95.8	5.5	93.7	0.8	2.7	7.4	89.9	37.4	7.8	92.2
U. Caste	201	64.2	35.8	45.8	54.2	97.5	16.4	83.1	0.5	5.5	24.9	69.7	36.3	11.0	89.0

* Includes piped water and water from hand pipes and covered well.

Table3.6b: Quality of Houses and Access to Daily Life Services & Amenities: Urban Households

Instrumental Variables	Sample Households (N)	Kutcha & Semi Kutcha House	Pucca House	Lighting Arrangement		Safe* Drinking Water	Cooking Fuel			Toilet			Drainage	Scavenging	
				Electricity	Kerosene & Others		LPG	Firewood	Others	Flush toilet, inside	Pit Toilet	Field & Others	Kutcha Nali	Frequently	Rarely
Total Urban	760	25.7	74.3	94.5	5.5	99.7	71.3	22.8	5.9	32.8	52.6	14.6	60.5	85.9	14.1
UP	250	37.2	62.8	86.4	13.6	99.2	66.8	31.6	1.6	31.6	50.0	16.4	67.2	94.0	6.1
Unnao	150	20.7	76.0	90.7	9.3	100.0	78.7	19.3	2.0	52.7	39.3	6.0	48.0	91.9	8.1
Jhansi	100	57.0	43.0	80.0	20.0	98.0	49.0	50.0	1.0	0.0	66.0	32.0	96.0	97.0	3.0
Rajasthan	150	28.0	72.0	96.7	3.3	100.0	57.3	41.3	1.3	0.0	77.3	22.7	78.0	87.2	12.8
Dausa	50	46.0	54.0	94.0	6.0	100.0	36.0	62.0	2.0	0.0	68.0	32.0	84.0	97.6	2.4
Dungarpur	100	19.0	81.0	98.0	2.0	100.0	68.0	31.0	1.0	0.0	82.0	18.0	75.0	81.3	18.7
Religion															
Hindu	637	24.7	75.4	95.3	4.7	99.8	72.4	21.5	6.1	31.4	50.9	17.7	58.7	89.1	10.9
Muslim	90	41.1	58.9	86.7	13.3	98.9	55.6	37.8	6.7	12.2	63.3	24.5	75.6	73.8	26.2
	164	36.0	64.0	93.3	6.7	98.8	54.9	33.5	11.6	20.1	47.6	32.3	69.5	84.1	15.9
Soc. Gr.	18	44.4	55.6	94.4	5.6	100.0	50.0	38.9	11.1	16.7	50.0	33.3	44.4	91.7	8.3
SC	250	37.2	62.8	90.4	9.6	100.0	62.8	33.6	3.6	15.2	60.4	24.4	74.0	86.5	13.5
ST	328	10.7	89.3	98.2	1.8	100.0	87.2	8.2	4.6	45.7	49.4	4.9	46.7	89.0	11.0
OBC	250	37.2	62.8	86.4	13.6	99.2	66.8	31.6	1.6	31.6	50.0	16.4	67.2	94.0	6.1
U. Caste	150	20.7	76.0	90.7	9.3	100.0	78.7	19.3	2.0	52.7	39.3	6.0	48.0	91.9	8.1

Barring to some extent in Delhi, house ownership in most places is either through inheritance or built and owned by the head of household. Both the patterns jointly account for more than three quarters of house ownerships in the sample (Table 3.7). Inherited houses are found to be the maximum in U.P. (67.5 percent) followed by Rajasthan (57.2 percent). Delhi, in contrast, stands lowest on this criterion (merely 25.8 percent). However, the percentage of houses owned by the head of family is considerably large in Delhi. This is particularly true for the slum dwellers (73.5 percent). An inference may therefore be made that the house ownership acts decisively in holding the rein of the family. It holds true for different social groups as well (Figure 3.2).

Table 3.7: State-wise House Ownership Status of Sample Households

States/ Districts	House Ownership: Total Sample			House Ownership: Rural			House Ownership: Urban		
	Ancestral House	HHD Owned	Others	Ancestral House	HHD Owned	Others	Ancestral House	HHD Owned	Others
Total Sample	56.7	35.1	8.2	70.5	27.2	2.3	34.1	48.0	17.9
UP	67.5	26.0	6.5	73.6	23.5	2.9	49.2	33.6	17.2
Unnao	58.7	32.2	9.1	67.1	28.4	4.4	33.3	43.3	23.4
Jhansi	80.7	16.8	2.5	83.3	16.0	0.7	73.0	19.0	8.0
Rajasthan	57.2	39.3	3.5	65.8	32.8	1.4	28.7	60.7	10.6
Dausa	68.3	30.3	1.4	72.0	27.2	0.8	50.0	46.0	4.0
Dungarpur	47.7	46.9	5.4	59.6	38.4	2.0	18.0	68.0	14.0
Delhi	25.8	52.8	21.4	-	-	-	-	-	-
Slums	13.7	73.5	12.8	-	-	-	-	-	-
Non-slum	30.6	44.6	24.8	-	-	-	-	-	-
Religion									
Hindu	57.3	34.9	7.8	70.1	27.9	2.0	34.1	47.7	18.2
Muslim	54.8	34.6	10.6	74.5	20.4	5.1	33.3	50.0	16.7

Figure 3.2 House ownership Status by Social Groups: Total Sample

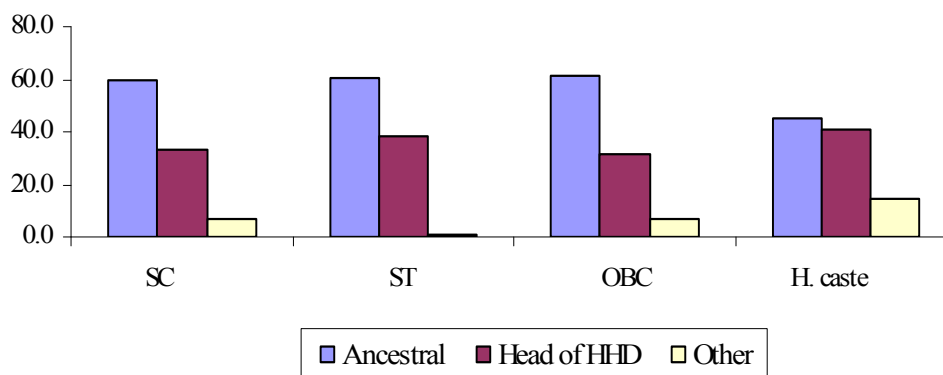


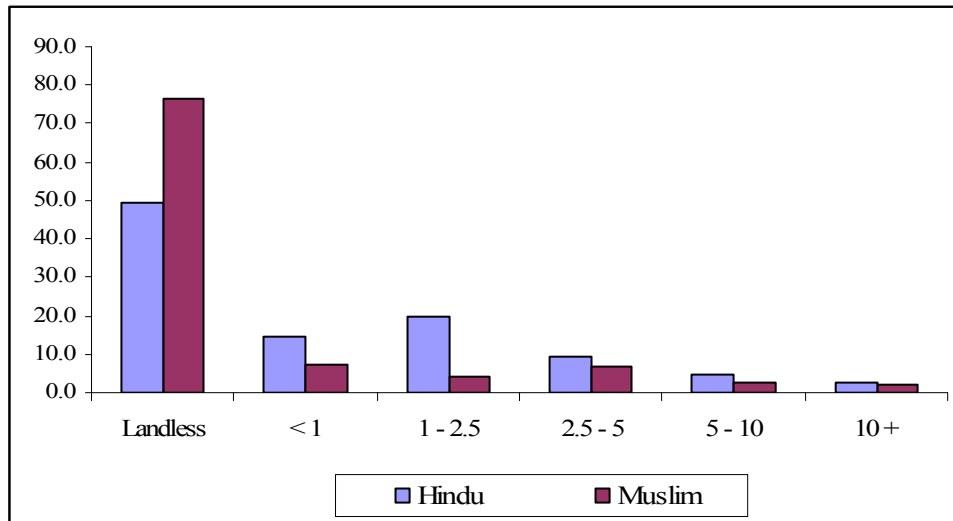
Table 3.8: Land Holdings by Sample Households

Size of Landholding (In acres)*	Panel A: Distribution by Study Areas			
	UP	Rajasthan	Delhi	Combined
Landless	42.6	42.8	98.1	52.6
< 1	15.7	18.6	0.0	13.8
1 - 2.5	20.4	23.7	0.6	17.9
2.5 - 5	11.2	10.6	0.6	9.1
5 - 10	6.1	3.5	0.6	4.3
10 +	4.0	0.8	0.3	2.3
N	2010	1,000	650	360
	Panel B: Distribution by Place of Residence: Rural-Urban			
	U.P.		Rajasthan	
	Rural	Urban	Rural	Urban
Landless	30.3	79.6	27.4	94.0
< 1	19.5	4.4	23.6	2.0
1 - 2.5	24.8	7.2	30.4	1.3
2.5 - 5	13.7	3.6	13.2	2.0
5 - 10	6.8	4.0	4.4	0.7
10 +	4.9	1.2	1.0	0.0
N	750	250	500	150
	Panel C: Distribution by Social Groups			
	SC	ST	OBC	Upper Caste
Landless	56.5	27.3	50.6	64.1
< 1	14.5	21.3	16.6	5.7
1 - 2.5	19.1	35.3	15.4	12.3
2.5 - 5	6.8	12.9	9.9	8.1
5 - 10	3.1	2.8	5.3	4.5
10 +	0.0	0.4	2.2	5.3
N	455	249	777	529

1 acre = 1.6 bigha

Source: IEG Survey on OOP Expenditure on Health, April-June, 2008.

Figure 3.3: Land Holdings by Hindus and Muslims: Total Sample



Distribution of sample households by size of land holding is given in panels A, B and C of Table 3.8. A point to notice from this distribution is the size of landless households. Even if we ignore Delhi for obvious reasons, the remaining two states — with considerable dependence on agriculture — present a worrisome picture. Almost half of the rural households in both the states are either landless or own a small piece of land measured below an acre in size (Table 3.8, Panels A and B). The fraction of households with land holding size over 5 acres is amazingly low in both the states — e.g., little over 10 percent in UP and over 4 percent in Rajasthan. While it needs to be admitted that the slant in favour of relatively poor districts and households in our sample may have ended up in pulling some of our results down, it may as well be recognized that these results may help to cause some alarm among concerned departments with perhaps a greater realization about the health risks of people in these districts and their necessary health delivery infrastructure. Simply a programme with much of its focus being directed to reproductive and (certain domains of) child health may not suffice.

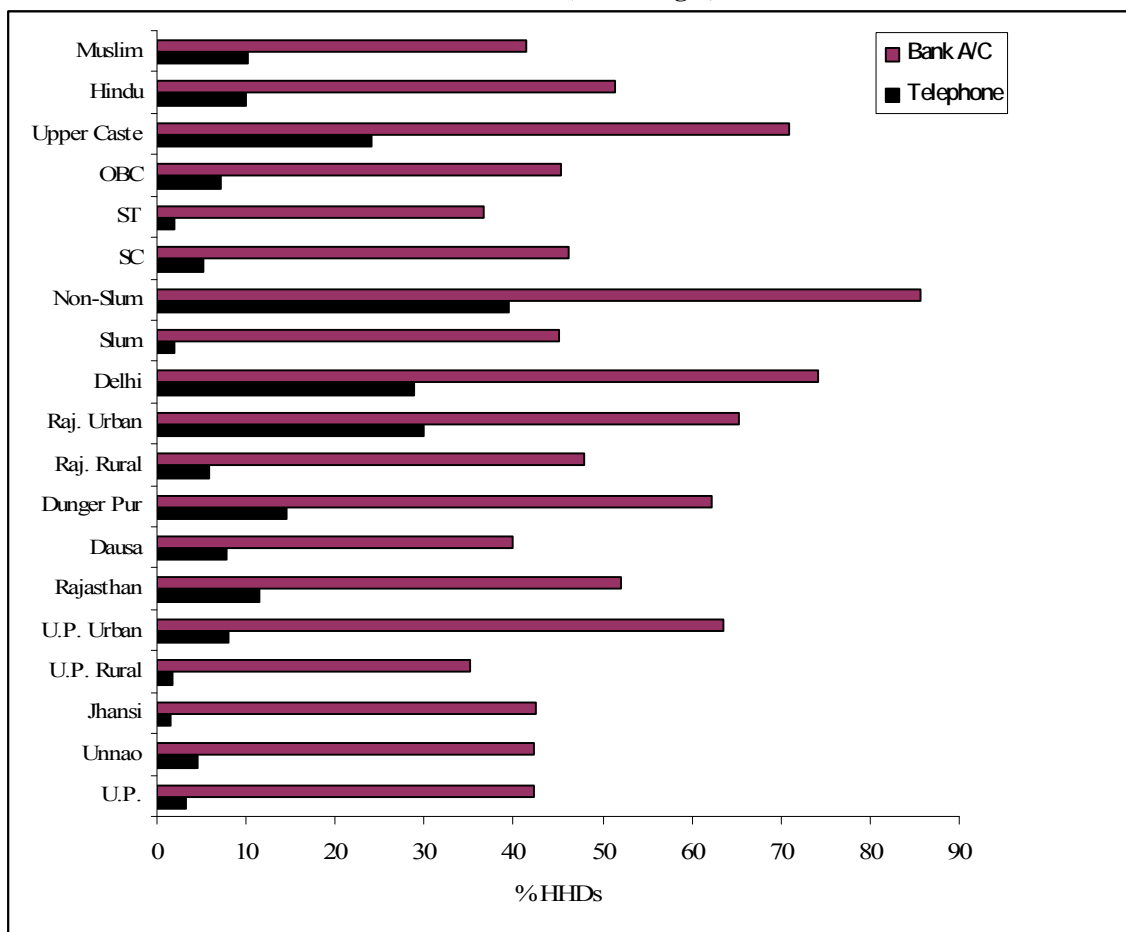
The situation doesn't improve either even if we look at the land ownership status of the upper caste households in the sample. It may be observed from Panel C of Table 3.8 that about two-thirds of them are landless, which is even worse than the other lower caste categories. They are nevertheless slightly better off when it comes to bigger land holdings; more than 5 percent of the total higher caste households owned land above 10 acres in size.

Conforming to the general perception, Muslims are found way behind Hindus; more of them are landless and their land holdings are also relatively smaller.

Of the two other quality of Life services — the telephone connection and a bank account — the former appears to be much less commonly possessed by the population under study than the latter (Figure 3.4). Considering the growing penetration of mobile phone services in most of the country including U.P and Rajasthan, our results may not be accepted at their face value. A possible explanation of this underestimation may be found in certain confusion among survey teams between the land line and the mobile telephone connections. Disregarding this, the bank account data seems interesting as it indicates a good number of people in most areas, particularly in Delhi and Rajasthan, holding a bank account. Muslims, rural U.P. and Scheduled Tribe households are the exceptions. With 86 percent of the total

respondents having a bank account, Non-slum Delhi is obviously far ahead than many others.

Figure 3.4.: Households with Telephone and Bank Account (Percentages)



Source: IEG Survey on OOP Expenditure on Health, April-June, 2008.

3.3 Level of Consumption, Poverty and Inequalities among Sample Households

This section brings two critical issues under investigation. First, it attempts to provide the socio-economic status of sample households determined on the basis of their food and non-food consumption expenditure — with and without health care. This may inter alia help us to identify the share of those below an officially designated cut-off poverty level. A part of this discussion is also directed at examining certain forms of inequalities prevalent among the responding households in rural and urban areas under consideration. The other issue relates to the out-of-pocket (OOP) health spending of households. This issue – one of the

critical concerns of the study - is likely to shed some light on the question: how does the OOP spending on health affect the over all socio-economic status of households? In other words, how does this spending push many of the border line non-poor households in different states below the threshold level of poverty. There must however be a word of caution. The analysis bears two important data caveats:

- (i) Most of our data used to analyze the poverty and other related issues are obtained on the basis of a compressed consumption schedule (see Appendix Table 3.3). This lends us to the risks of some under-estimation in the overall consumption level of the respondents. It may in certain cases tend to inflate the poverty level, and
- (ii) Given the micro level of our survey, that too with a tilt in favour of the poor households in relatively high poverty districts of economically less developed states, our poverty estimates may not be comparable strictly with studies drawn on the basis of the National Sample Survey or other similar data sources. Also, the poverty lines in our analyses are not district specific and relate to the state as a whole.

A part of the analysis in this section is also devoted to making assessments about the households facing a catastrophic situation due to out-of-pocket spending on treatment of disease episode/s in the family. A more decomposed analysis of OOP health care spending will be taken up in subsequent chapters.

In all, four interlinked issues are discussed below:

- First, we briefly present the share of households in each of the five (arbitrarily chosen) per capita monthly consumption expenditure (PCMCE) categories: i.e., from the lowest category of Rs. 500 or below a month to the highest of Rs. 10,001 and above in each of the three states under discussion.
- This is followed by a discussion on sample households below or above the official cut-off levels of poverty (hereafter denoted by Z). Two alternative formulations are used to measure poverty levels among the sample households. Poverty type 1 was considered at the combined level after taking into consideration the over all consumption in the household including food, non-food and all health related out-of-pocket expenses (PCMCE - Z)¹⁵. The other (poverty type 2) relates to the households' expenditure after deducting their OOP spending on health. The latter was inter alia computed with a view to make assessments as to how the OOP expenditure on health bring non-poor

¹⁵ All yearly non-food data have been converted into monthly format before calculating the PCMCE.

households to a poverty situation or, in other words, pushes them to poverty from a non-poverty position.

- Thereafter we move to the inequalities among the sample households both with and without spending on health care.

Households facing indebtedness because of health and non-health expenses will be discussed at the end.

Table 3.9: Distribution of Households by Per Capita Monthly Consumption Expenditure (PCMCE) Categories: U.P., Rajasthan & Delhi

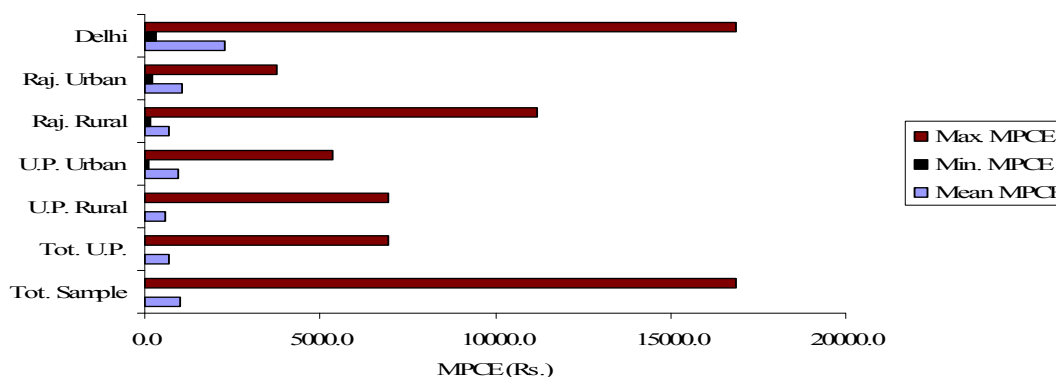
Households Consumption Items	Distribution of Households by PCMCE Levels (%)					N Row-wise
	< Rs. 500	Rs. 500 - 1500	Rs. 1501 – 5000	Rs. 5001 - 10000	Rs. > 10000	
<i>a. Total Consumption</i>						
U.P.*	50.1	43.9	5.7	0.3	0.0	1,000
Rajasthan*	42.6	46.6	10.6	0.0	0.2	650
Delhi**	3.6	48.6	37.5	9.4	0.8	360
Combined States	39.4	45.6	13	1.8	0.2	2,010
<i>b. Food Exp.</i>						
U.P.*	88.4	11.4	0.2	0.0	0.0	1,000
Rajasthan*	85.54	14.31	0.15	0.0	0.0	650
Delhi**	28.61	58.06	13.33	0.0	0.0	360
<i>c. Non-Food Exp.@</i>						
U.P.*	83.1	14.2	2.6	0.1	0.0	1,000
Rajasthan*	75.7	19.4	4.8	0.0	0.2	650
Delhi**	40.3	30.3	25.6	3.6	0.3	360
<i>d. Health Exp.</i>						
U.P.*	95.1	4.1	0.7	0.1	4.1	1,000
Rajasthan*	95.7	3.1	1.2	0.0	3.1	650
Delhi**	88.9	8.3	2.8	0.0	8.3	360
<i>e. Place of Residence</i>						
Rural#	54.3	40.7	4.8	0.1	0.1	1,250
Urban^	14.7	53.7	26.5	4.7	0.4	760
Delhi Slum	10.8	77.5	11.8	0.0	0.0	102
Delhi Non-Slum	0.8	37.2	47.7	13.2	1.2	258
<i>f. Social Groups (Total consumption)</i>						
SC	41.8	51.0	7.0	0.2	0.0	455
ST	65.1	29.7	4.4	0.4	0.4	249
OBC	45.6	45.7	8.5	0.3	0.0	777
Upper Castes	16.1	48.4	28.7	6.2	0.6	529
<i>fl. Social Groups (Health Exp.)^^</i>						
SC	93.1	5.2	1.5	0.3	0.0	404
ST	97.3	2.7	0.0	0.0	0.0	221
OBC	94.5	4.1	1.3	0.0	0.0	677
Upper Castes	89.9	7.9	2.2	0.0	0.0	456
<i>g. Religion (total Consumption)</i>						
Hindu	39.5	45.7	12.7	2.0	0.2	1789
Muslim	44.2	46.8	8.5	0.5	0.0	188

*rural-urban combined. ** Combined slum and non-slum households. # Combined rural from U.P. & Rajasthan. ^ Including slums and non-slums. @ Including health expenditure. ^^ Excluding HHDs without any health expenditure during the reference period.

Consumption levels of Sample Households

A simple distribution of households into five broad levels of monthly per capita consumption expenditures is given in Table 3.9. This table reconfirms a large-scale poverty situation in the two districts of UP (Unnao and Jhansi) with 50 percent of its sample households reporting a total of Rs. 500 or less as their total per capita monthly consumption expenditure including food, non-food and health care. Even allowing for some overestimation due to data limitations, the fact that a large number of people in the state survive at Rs 17 a day or less is a scary picture. Rajasthan (Dausa and Dunger Pur) is however in a slightly better situation with a lesser fraction of people in Rs. 500 (or Rs. 17 a day) consumption band; its poverty situation is no way less alarming. Another interesting point to notice in both of these states is the fact that almost 90 percent of their households belong to the first two PCMCE categories. Delhi turns out to be considerably better than both of them (Table 3.9). Rest of the estimates is being mostly on the expected lines with the share of households in lowest per capita consumption category being highest both in slums and in rural areas. This is true for the tribal and low caste households as well. Muslims trail behind the Hindus as was expected.

Figure 3.5: Descriptive Statistics: PCMCE of Sample Population in U.P., Rajasthan and Delhi



Apart from low per capita monthly consumption expenditure, a large number of households also suffer from serious inequality issues. While we propose to consider this issue more explicitly later, Fig. 3.5 clearly brings out considerable disparities between the minimum and the maximum consumption levels of households or their mean consumption levels in all the three states under reference. The max-min differences are found to be the highest in Delhi (see also Appendix Table 3.4).

Poverty Head Count Ratios

The discussion to follow uses two most commonly derived poverty measures to bring out the points in argument: (i) poverty head count, and (ii) poverty gap. Both the measures are applied by taking the total PCMCE into consideration and the PCMCE used after netting out the health care expenses from the former. The latter, as was explained earlier, is expected to highlight the fraction of additional households slipping below the poverty level due to private expenses on health.¹⁶ These measures may also help to judge differences in head count ratios of below poverty households (H) in different states or by rural-urban and socio-religious groups. The fact that all of these measures are drawn at a very micro level adds to some of the value additions of this study and may also serve in drawing useful insights for making evidence-based policy interventions at the local level. A brief note on both the measures of poverty is in order.

Poverty Head Count (H)

As was described before, this measure (hereafter referred to as H) provides the share of population below a defined poverty line (Z).¹⁷ In other words, it provides the share of population or households below a defined income or consumption level (in our case: $H = Z - PCMCE$). Going by this definition of poverty, the head count index (H) is: q/n ; where q is number of persons with $PCMCE < Z$ and n is the size of total population (also see Box 1). Two measures of H are brought under discussion; one is with and the other is without OOP expenses on health.

Poverty Gap (PG)

Poverty gap (PG), which is generally considered a measure representing the severity of poverty or poverty deficits, is the mean distance separating any population from the poverty line (Z). Also it assumes the non-poor or above poverty individuals (i.e., $PCMCE > Z$) at a zero poverty deficit. Like in the case of poverty head count ratios (H), here also we make two separate computations, i.e., with and without the households' spending on

health. Algebraically, the PG may be expressed as: $PG = 1/n \sum_{i=1}^q \left[\frac{Z - PCMCE_i}{z} \right]$

¹⁶ It ought to be pointed out that this study has nowhere tried to differentiate between emergency and non-emergency health care items or expenditure.

¹⁷ The defined poverty line for the 3 states were: UP: Rural = 365.24 and Urban = 483.26; Rajasthan: Rural = 374.57 and Urban = 559.63; Delhi: Urban = 612.91 (Poverty Estimates given by the Planning Commission for 2004-05, released by Press Information Bureau, Government of India).

Table 3.10: Head Count of Consumption Poverty with and Without OOP Expenditure on Health: UP, Rajasthan and Delhi Samples

Percentage

Households Characteristics	Consumption Poverty: 1 (with total consumption expenditure)		Consumption Poverty: 2 (without OOP expenditure on health)	
	Rural	Urban	Rural	Urban
<i>a. U.P. Total</i>	36.0	25.6	49.60	29.60
Unnao	34.7	20.0	48.89	22.00
Jhansi	38.0	34.0	50.67	41.00
<i>b. Rajasthan Total</i>	28.4	28.6	41.80	38.00
Dausa	21.6	38.0	34.00	56.00
Dunger Pur	35.2	24.0	49.60	29.00
<i>c. Delhi Total</i>	-	10.0	-	16.11
Delhi Slums	-	26.5	-	41.18
Delhi Non-Slums	-	3.4	-	6.20
<i>Social Groups</i>				
SC	37.1	23.2	50.9	34.2
ST	46.8	50.0	61.0	55.6
OBC	30.6	29.2	45.5	34.8
Upper Caste	17.4	7.0	25.9	11.0
<i>Religion</i>				
Hindu	32.6	18.1	46.1	24.0
Muslim	37.8	30.0	51.0	38.9

Calculated on the basis of state-specific poverty line given by the Planning Commission, 2004-05

Box 3. 1: Estimation of Poverty with and without OOP Expenditure on Health

Consumption poverty head count = q / n

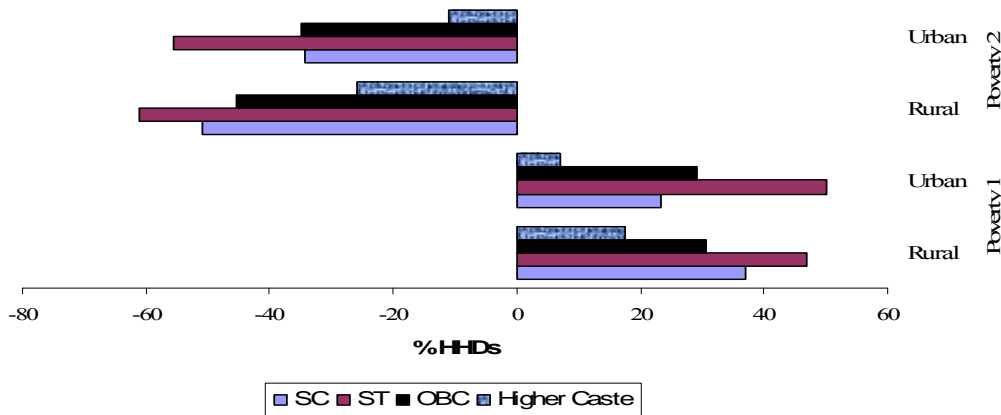
Where q is the number of poor households defined as: $PCMCE - \text{poverty line } Z$

If $PCMCE < Z$, HHD is poor, and 'n' is the number of sample households.

Consumption Poverty 1 = $MPCE < Z$.

Consumption Poverty 2 = $(MPCE - OOP \text{ Health Exp}) < Z$.

Figure 3.6: Type 1 and Type 2 Poverty by Social Groups



Where Z denotes the poverty line of individual states, q is below poverty households (i.e., households with $Z > \text{PCMCE}$) and n is the number of persons in the sample.¹⁸ At the policy level, PG serves to provide estimates of financial resources required to remove consumption (or income) poverty under a perfectly designed targeting framework. The PGs are calculated to represent both the total as well as the below poverty populations¹⁹ – while the former is termed as the *Average Poverty Gap*, the latter is known as the *Mean Positive Gap*. These measures were bifurcated further by using (i) total PCMCE, and (ii) the PCMCE – OOP. (Also see Box 3.2).

Discussion of the Head Count and Poverty Gap Results

Table 3.10 provides head count consumption poverty in all the three states and their districts including slum and non-slum households surveyed in the capital city of Delhi. It also gives poverty incidence by social and religious groups. Repeating broadly the pattern represented by the previous table, Table 3.10 also suggests UP and its two districts in a more distressing situation with larger shares of households falling below the poverty threshold level (Z). This pattern is however true for rural UP alone. Urban UP and its districts have performed relatively better. They also perform better than Delhi slums (see Table 3.10).

¹⁸ Poverty gaps are generally measured at the household level, but individual income or consumption can also be used as it is drawn as the mean household income or consumption, and remains equal for the entire household.

¹⁹ In one case, n includes poor and non-poor both, and in another it simply comprises of persons or households with $Z > \text{PCMCE}$.

An interesting observation stemming from this and a few of the forthcoming exercises relates to a significant increase in the fraction of below poverty households (and poverty deepening may also be noticed from subsequent tables) after netting out the health expenses. This is very clearly visible by making a comparison between the two head count poverty levels — i.e., with and without expenses on medical care. ‘Consumption Poverty 1’ and ‘Consumption Poverty 2’ in Table 3.10 provide these details. A comparison between the two indicates that the latter increases the share of below poverty households to a considerable extent in all the three states – though the magnitude of households falling below poverty level varies from one state to another. The most visible effect of private spending on health may be found in rural and slum areas where the health services are either missing or inefficient. This may as well be noticed from the poverty head count results for the urban and non-slum households in Table 3.10. While certain marginal increase may be noticed in the fraction of poor after health care expenses are deducted from the total PCMCE in most of the urban places, their magnitude is far less than those in villages and low-income slum areas. Even after three years of the NRHM, rural health care is seen to hold a much significant place in cross-movement of a big proportion of rural people from poverty to non-poverty statuses and vice versa.

Table 3.11: Poverty Gap (PG): States, Districts, Religion and Social Groups
(In Rupees)

States And Districts	Poverty Gap 1(Including OOP Health Exp.)				Poverty Gap 2 (Excluding OOP Health Exp.)			
	Poverty Gap: 1a (Average PG) Total HHs		Poverty Gap: 1b (Mean Positive PG) Below Poverty HHs		Poverty Gap: 2a (Average PG) Total HHs		Poverty Gap: 2b (Mean Positive PG) Below Poverty HHs	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
UP	35.4	34.0	88.7	123.4	47.45	40.48	118.80	146.78
Unnao	37.1	21.3	93.3	108.5	48.75	24.67	122.68	125.88
Jhansi	32.7	52.1	81.1	134.1	45.32	62.85	112.50	161.70
Rajasthan	28.9	48.8	96.4	153.0	36.73	66.53	122.36	208.52
Dausa	19.9	48.6	87.2	124.5	26.44	74.84	115.90	191.74
Dunger Pur	38.6	49.0	102.4	177.7	47.68	61.46	126.52	223.02
Delhi	-	12.2	-	103.3		16.95		143.97
Slums	-	31.7	-	103.7		44.17		144.43
Non -slums	-	4.0	-	102.3		5.63		142.49
<i>Social Gr.</i>								
SC	35.9	27.6	87.5	117.5	47.8	38.3	116.5	163.1
ST	49.4	109.8	101.6	189.1	62.5	141.4	128.4	243.5
OBC	30.5	38.5	90.0	123.9	40.9	49.9	120.7	160.5
U. Caste	15.7	12.3	78.2	127.8	20.6	14.6	102.8	151.7
<i>Religion</i>								
Hindu	32.6	25.6	91.7	127.6	42.8	33.4	120.5	166.7
Muslim	36.3	40.2	86.3	124.4	48.3	50.8	114.6	156.9

Note: Calculated on the basis of poverty line (Z) for respective states, Planning Commission (2004-05).

Box 3.2: Estimation of Poverty Gap <u>with</u> and <u>without</u> OOP Expenditure on Health	
<p><u>Poverty gap: 1a</u></p> $\sum (Z - MPCE)/(HHD_{\text{Poor}} + HHD_{\text{Non-poor}})$ <p>where,</p> <p>HHD_{Poor} = No. of HHDs with MPCE < Z</p> <p>HHD_{Non-poor} = No. of HHDs with MPCE > Z</p> <p>Z = Poverty line given by the Planning Commission</p>	<p><u>Poverty gap: 1b</u></p> $\sum (Z - MPCE)/HHD_{\text{Poor}}$ <p>where,</p> <p>HHD_{Poor} = No. of HHDs with MPCE < Z</p> <p>Z = Poverty line given by the Planning Commission</p>
<p><u>Poverty gap: 2a</u></p> $\sum [Z - (MPCE - OOP)] / \sum HHD_{\text{Poor}} + \sum HHD_{\text{Non-poor}}$ <p>where,</p> <p>Poor HHD = (MPCE - OOP) < Z</p> <p>HHD_{Poor} = No. of HHDs with MPCE < Z</p> <p>HHD_{Non-poor} = Number of non-poor HHD's (MPCE > Z)</p> <p>Z = Poverty line given by the Planning Commission</p>	<p><u>Poverty gap: 2b</u></p> $\sum [Z - (MPCE - OOP)] / HHD_{\text{Poor}}$ <p>where,</p> <p>Poor HHD = (MPCE - OOP) < Z</p> <p>HHD_{Poor} = Number of poor HHDs</p> <p>Z = Poverty line given by the Planning Commission</p>

PG or the poverty gap, as was already described, helps to measure the depth or severity of poverty at different levels. It also provides an important and complementary measure to examine further poverty or its incidence among different population groups and also by taking into consideration alternative ways of defining the poverty gap. The results presented in Table 3.11 is expected to work on some of those lines and help calculating changes in poverty depth by altering the overall (or per capita) consumption expenditure of households with or without OOP health spending – former was described as poverty Gap 1 and the latter was given as poverty gap 2 in tables containing those results. In addition, our results also include calculations based on *average poverty gap* (total households in the sample including poor and non-poor) as well as *mean positive poverty gap* (partial sample with only poor households) (see Box 3.2 for more details). Both the sets of calculations may help further in digging into the role of health spending or letting people sink deeper into poverty.

Table 3.11 gives poverty gaps drawn on the basis of both the alternative definitions of consumption expenditure – i.e., with and without OOP spending. It clearly reveals the negative impact of health spending on consumption standards of individual and households. It also acts to derive low income people deeper into poverty and may cause an added

financial burden to lift them above their fallen position of poverty. Conforming to some of our earlier results, we observe rural parts of UP to be at a more disadvantageous position, though Urban Rajasthan is no less problematic. Similarly, the tribals are also in a difficult situation and health spending makes them suffer with greater poverty gaps (Table 3.11).

The more interesting observations however arise while making a comparison between poverty gaps 1 and 2. The relevance of these results increases when the two poverty gaps are again divided into *average poverty gap* and *mean positive poverty gap* – the latter essentially relies on non-health (i.e., only food and non-food items) consumption expenditure and also relates to below poverty households ($Z - PCMCE_{\text{food+non-food} - \text{health exp.}} > 0$). The former has no similar restrictions. Table 3.11a summarizes these results with columns 4, 7 and 8 representing differences between the poverty gaps obtained by making alternative consumption baskets and with or without non-poor. Without making too many assertions, it may easily be noticed from Table 3.11a that the health spending – which appears to constitute in many cases a much larger share of non-food consumption expenditure - makes the situation worst. It may be noticed from this table (or even from the previous tables) that the results drawn after dropping the health spending from consumption basket leaves a big fraction of households with deeper poverty gaps. The situation compounds when the results are restricted to the poor households alone. Also, unlike the general perceptions, a slight modification in definition and composition of consumption basket make urban population - in particular its poor and tribal segments - look highly vulnerable (see columns 3 and 6 of Table 3.11a, Panel 2).

Table 3.11a: Differentials in Poverty Gaps with and without Health Spending in PCMCE: Total and Below Poverty HHDs in Sample Areas of UP, Rajasthan and Delhi

States & Districts	Poverty Gap 1: Total Consumption Expenditure			Poverty Gap 2: Excluding OOP Expenditure on Health			(1a-1b) / (2a-2b) (%)
	Poverty Gap 1a	Poverty Gap 1b	Diff: 1a & 1b	Poverty Gap 2a	Poverty Gap 2b	Diff: 2a & 2b	
PANEL 1: RURAL							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
UP	35.4	88.7	53.3	47.5	118.8	71.4	74.6
Unnao	37.1	93.3	56.2	48.8	122.7	73.9	76.0
Jhansi	32.7	81.1	48.4	45.3	112.5	67.2	72.0
Rajasthan	28.9	96.4	67.5	36.7	122.4	85.6	78.9
Dausa	19.9	87.2	67.3	26.4	115.9	89.5	75.2
Dungarpur	38.6	102.4	63.8	47.7	126.5	78.8	81.0
Delhi	-	-	-	-	-	-	-
Delhi Slums	-	-	-	-	-	-	-
Delhi Non – slum	-	-	-	-	-	-	-
SC	35.9	87.5	51.6	47.8	116.5	68.7	75.1
ST	49.4	101.6	52.2	62.5	128.4	65.9	79.2
OBC	30.5	90.0	59.5	40.9	120.7	79.8	74.6
Upper Caste	15.7	78.2	62.5	20.6	102.8	82.2	76.0
PANEL 2: URBAN							
UP	34.0	123.4	89.4	40.5	146.8	106.3	84.1
Unnao	21.3	108.5	87.2	24.7	125.9	101.2	86.2
Jhansi	52.1	134.1	82.0	62.9	161.7	98.9	82.9
Rajasthan	48.8	153.0	104.2	66.5	208.5	142.0	73.4
Dausa	48.6	124.5	75.9	74.8	191.7	116.9	64.9
Dungarpur	49.0	177.7	128.7	61.5	223.0	161.6	79.6
Delhi	12.2	103.3	91.1	17.0	144.0	127.0	71.7
Slums	31.7	103.7	72.0	44.2	144.4	100.3	71.8
Non – slum	4.0	102.3	98.3	5.6	142.5	136.9	71.8
SC	27.6	117.5	89.9	38.3	163.1	124.8	72.0
ST	109.8	189.1	79.3	141.4	243.5	102.1	77.7
OBC	38.5	123.9	85.4	49.9	160.5	110.6	77.2
Upper Caste	12.3	127.8	115.5	14.6	151.7	137.1	84.2

As a whole, two broad observations follow from most of these results. One, out-of-pocket health spending is still remained a serious issue for a large number of people in both the states and also for the slum households in Delhi. Second, the poor remain highly vulnerable after they pay for their accessed health care services themselves. What component (or components) of health spending brings greater vulnerability to the people is indeed a significant question, and we will revert back to this later.

3.4: Health Payments, Poverty and Inequality

Inequality Concept and Its Measurement

Inequality is generally considered as a much broader concept than the measures adopted to calculate head count poverty indices or a set of poverty gaps using alternative definitions. An important distinction embedding the concept of inequality is that it relates to the entire population and not only to those below a certain pre-defined poverty level (Coudouel, Hentschel and Wondon, 2002). In addition, generally inequality measures do not rely on mean of a distribution. Instead, they remain mostly concerned with the overall distribution of certain welfare augmenting factors and, therefore, considered as one of the most relevant issues in debates on distributional outcomes of various public policies or programmes initiated by governments (Atkinson, 1983; Cowell, 2000; Gwatkin, 2000, Sen, 1973, etc.). We have decided to present below a few preliminary (Lorenz Curve and Gini Indices based) inequality exercises using the preceding sets of consumption data and making a few smaller changes in over all consumption basket as before – i.e., with and without OOP expenditure on health. The underpinnings behind these exercises are two fold. One is simply required to know about the level of inequalities suffered by the groups of people drawn from different states and also to check whether these inequalities broadly follow the pattern observed by the NSS 61st Round (July 2004 – June 2005). The second objective obviously is to know the additional inequalities generated by the OOP spending on health across different groups of households. To calculate the latter, we propose to follow the expenditure decomposition procedure used to compute poverty 1 and 2 in Table 3.11 (also see Box 3.2).

Methodologically, the Lorenz curve is a graphical representation of the ‘cumulative distribution function of a probability distribution’. It is generally drawn to represent income or consumption distribution (in our case the latter) of a population, where the horizontal axis gives the cumulative share of population ranked by increasing share of per capita consumption expenditure. The vertical axis on the other hand provides the share of consumption enjoyed by the corresponding percentages of population. The Gini coefficient, in most cases, is measured as twice the surface between the Lorenz curves and a

hypothetical line of perfect equality or a perfectly egalitarian distribution (i.e. 45 degree line)²⁰.

An attempt is made below to provide a set of Lorenz curves drawn by using a continuous cumulative distribution of per capita monthly consumption expenditure for the populations drawn from the rural and urban areas of all the three states under review. These curves are drawn only on the basis of total consumption expenditure. A further extension of these exercises has also been attempted by decomposing the total household expenditure into (i) food and non-food, and (ii) OOP health spending. For the brevity of space, however, we refrain providing Lorenz curves based on the decomposed consumption data. Rather a separate table (Table 3.12) has been added to give the Gini coefficients for all the three consumption baskets. Gini 1 relates to total PCMCE, while Gini 2 and 3 relate to the decomposed distribution of PCMCEs — namely, $PCMCE_{food+non-food}$ and $PCMCE_{OOP\ exp}$.

A very clear message emanating from all the exercises – either Lorenz curves or a series of Gini coefficients obtained with or without OOP spending on health – goes to suggest that the consumption inequalities are severely higher at most of the places under study. All the Lorenz curves show steep gaps between the diagonal line of 45 degrees and the area under the curve (see Lorenz Curves 3.1 to 3.7). But perhaps there is nothing very surprising in these results. Based on the consumption expenditure survey for 2004-05, almost a similar trend and loss of wellbeing was reported by the NSSO in its Report Number 508 (December 2006). If some of our results are a little different from that of the NSSO (2006), it may largely be on account of certain technical differences or lack of conformity between the two samples.

²⁰ In its simplest way, Gini is mathematically derived as the covariance between the consumption c of an individual (or household) and the F rank that the individual or household occupies in the distribution of consumption (this ranks assumes 0 for the poorest to 100 for the richest). Denoting the per capita monthly consumption expenditure by C , the standard Gini index is defined as $= 2 \text{ cov}(y, F) / C$. We have used STATA to obtain these results (Klugman, 2002, Technical Note A.7, p. 415). Computationally, it matters whether or not the consumption (or income) is weighted by household size, since households with lower income or consumption may be larger in size. To avoid this problem, we have followed a weighted HHD system in the entire analysis.

Table 3.12: Gini Coefficients Based on Decomposed Monthly Consumption Expenditure

States	Per Capita Monthly Consumption Expenditure on:		
	Gini 1: Food, Non-food & Health	Gini 2: Food & Non-food	Gini 3: OOP Health Expenditure
UP & Rajasthan (Rural)	0.367	0.350	0.706
UP & Rajasthan (Urban)	0.374	0.358	0.775
UP Districts (Rural)	0.339 (0.287)	0.312	0.707
UP Districts (Urban)	0.379 (0.370)	0.343	0.806
Rajasthan Districts (Rural)	0.395 (0.248)	0.388	0.705
Rajasthan Districts (Urban)	0.357 (0.367)	0.366	0.704
Delhi (Slums)	0.250	0.221	0.680
Delhi (Non-slums)	0.417	0.430	0.696
Delhi (Slum + Non-slum)	0.386 (0.326)	0.375	0.698

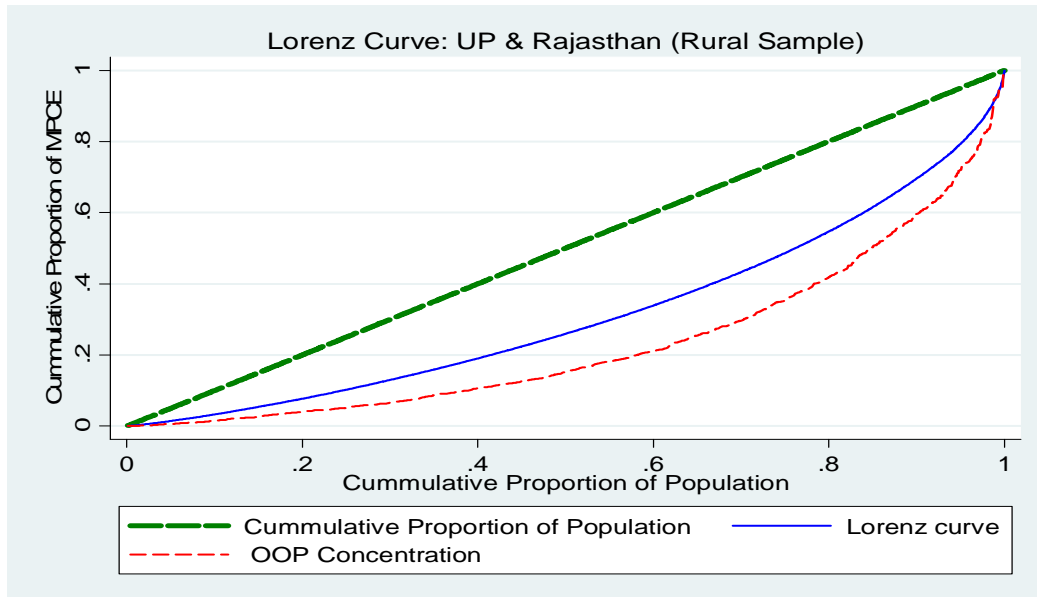
Note: Figures in bracket show Gini Coefficients computed on the basis of NSS 61st Round (2004-05) for the rural and urban areas of UP and Rajasthan, and urban Delhi.

Source: NSSO (2006), Report No. 508, Statement 1.

Table 3.12 clarifies some of these issues further. More specifically, it helps to make two points. One is the resemblance between the Gini coefficients drawn by our own data and the NSS 61st Round. This is particularly true for the urban populations in UP and Rajasthan (NSSO, 2006). Undoubtedly, while such a comparison draws no or limited justification on theoretical reasoning, at least they are mutually close in terms of size (Table 3.12). Coefficient for urban Delhi is also not very far apart. The rural Gini however differs quite considerably, and this is true for both the states.

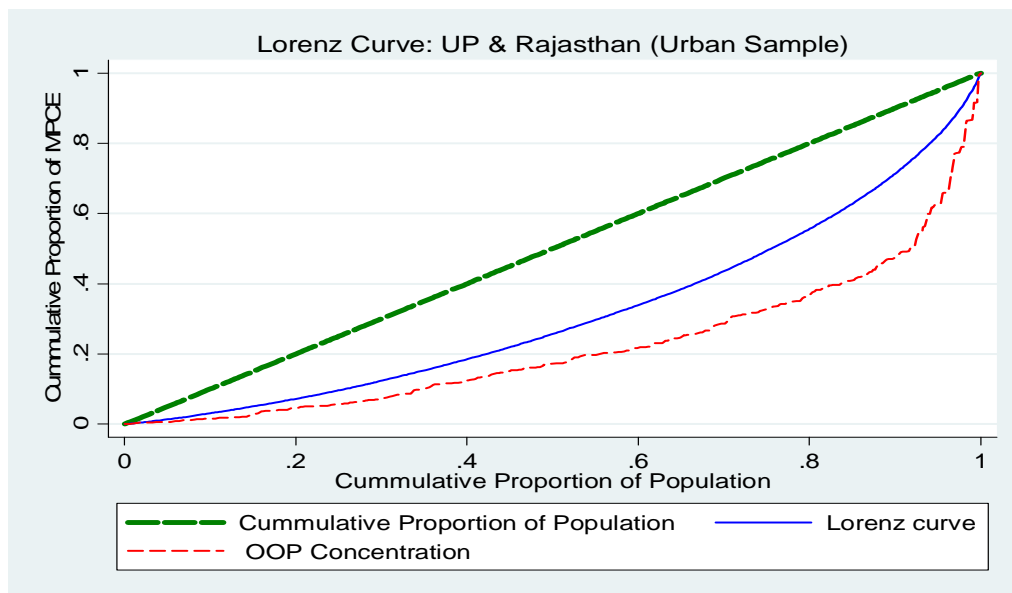
Our results suggest lesser disparities in per capita consumption of non-food items. In most cases, the Gini 2 in Table 3.12 assumes smaller values. A point however to notice is the disparities shown in mean expenditure on health care (Gini 3 in Table 3.12). Barring to a certain

Lorenz Curve 3.7: Inequalities in PCMCE – Sample HHDs of UP & Rajasthan (Rural)



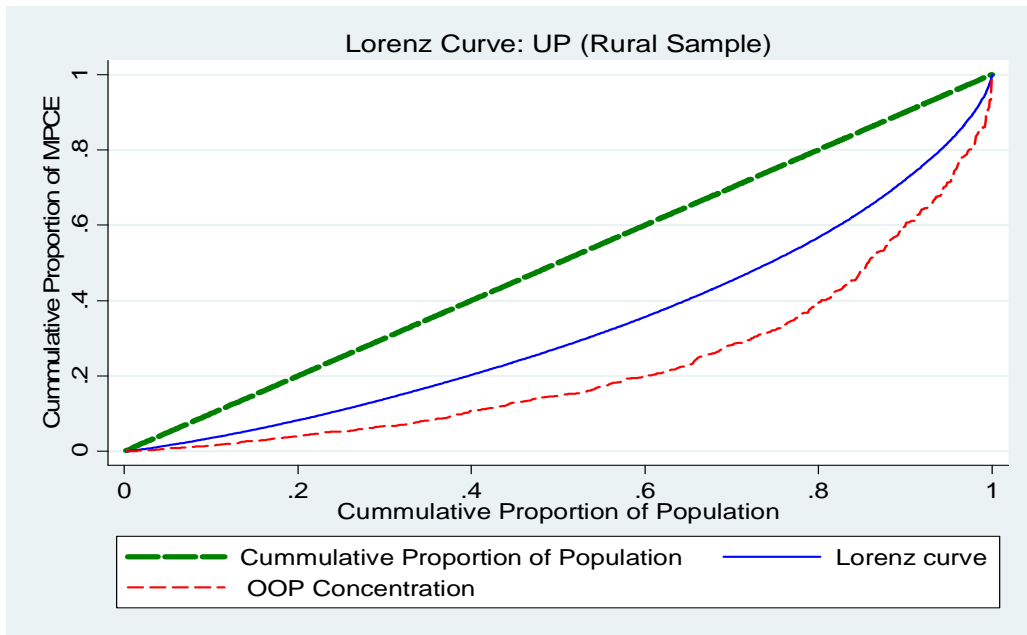
Gini 1 = 0.367; Gini 2 = 0.350; Gini 3 (OOP) = 0.706

Lorenz Curve 3.8: Inequalities in PCMCE – Sample HHDs of UP & Rajasthan (Urban)



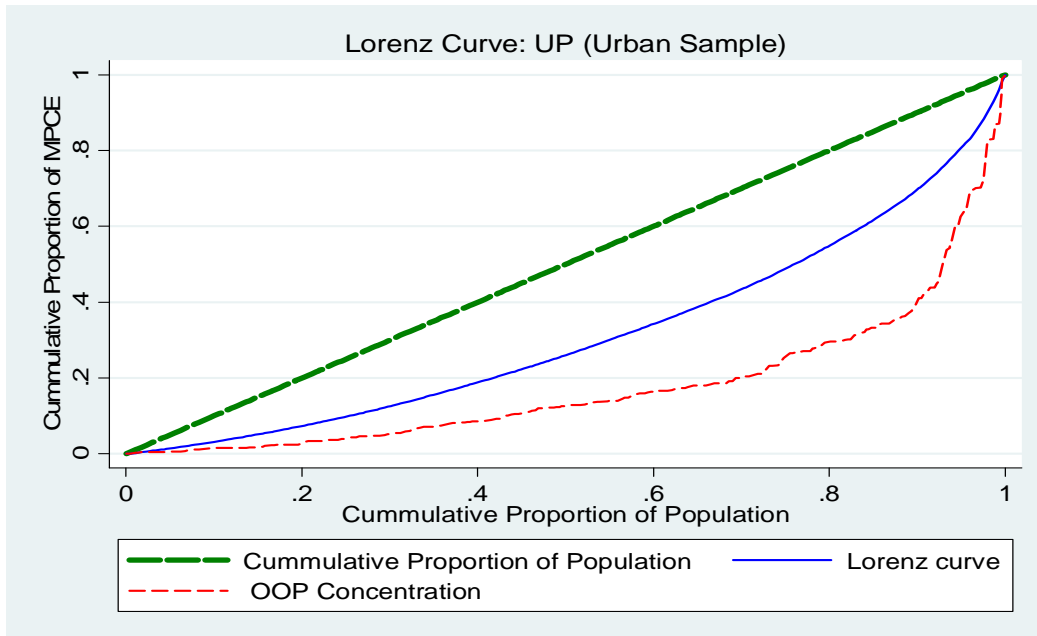
Gini 1 = 0.374; Gini 2 = 0.358; Gini 3 (OOP) = 0.775

Lorenz Curve 3.9: Inequalities in PCMCE – Sample HHDs of UP (Rural)



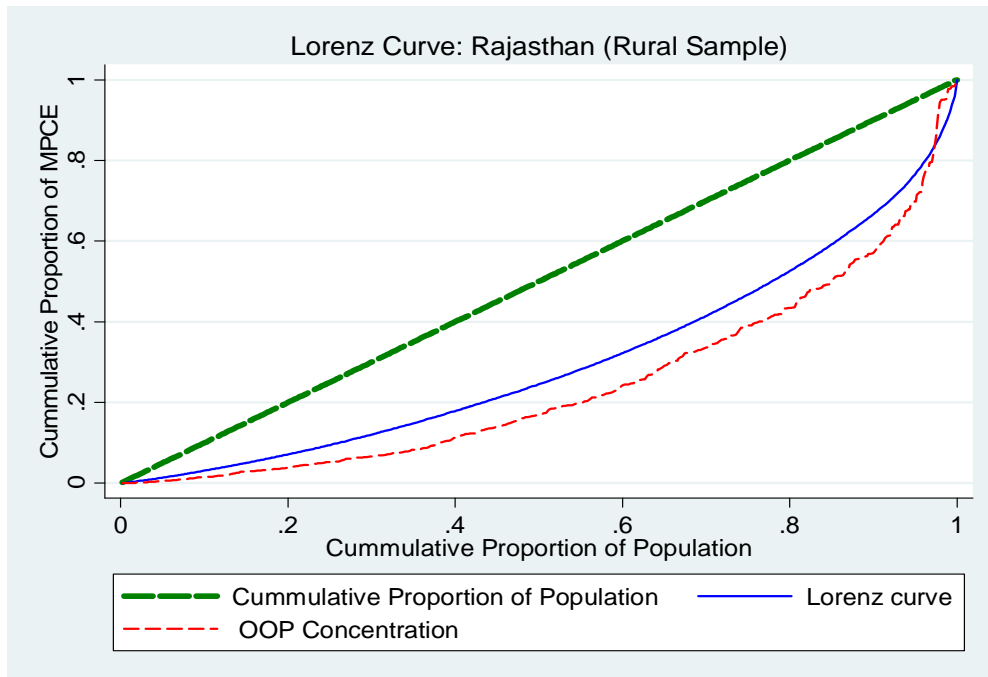
Gini 1 = 0.339; Gini 2 = 312; Gini 3 (OOP) = 0.707

Lorenz Curve 3.10: Inequalities in PCMCE – Sample HHDs of UP (Urban)



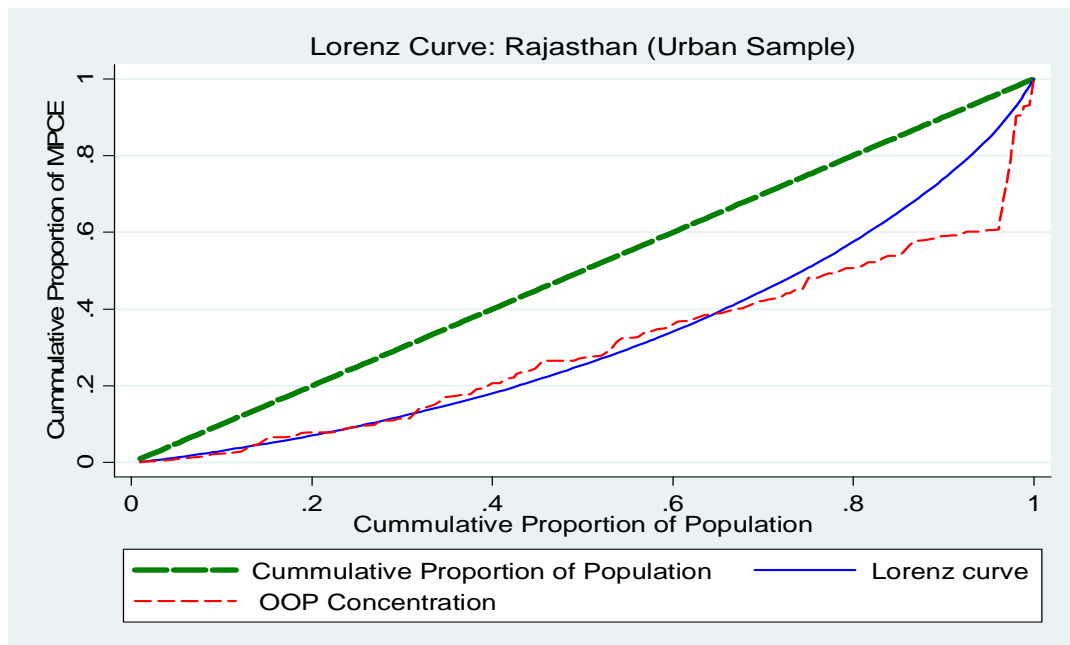
Gini 1 = 0.379; Gini 2 = 343; Gini 3 (OOP) = 0.806

Lorenz Curve 3.11: Inequalities in PCMCE – Sample HHDs of Rajasthan (Rural)



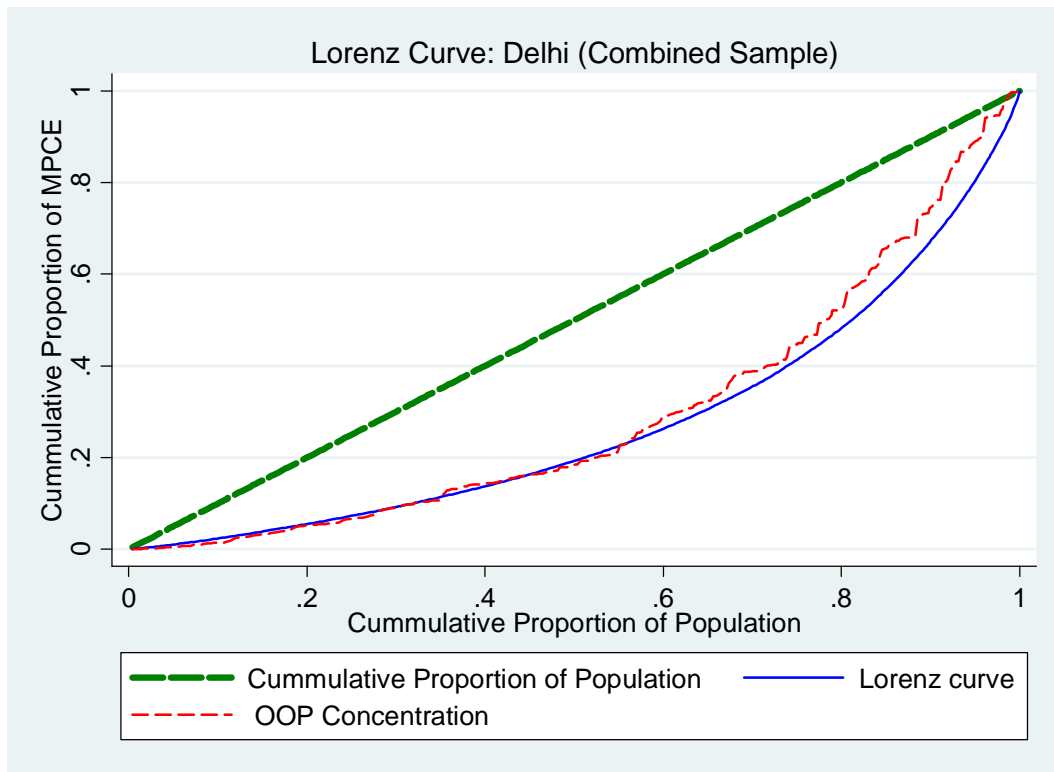
Gini 1 = 0.395; Gini 2 = 388; Gini 3 (OOP) = 0.705

Lorenz Curve 3.12: Inequalities in PCMCE – Sample HHDs of Rajasthan (Urban)



Gini 1 = 0.357; Gini 2 = 366; Gini 3 (OOP) = 0.704

Lorenz Curve 3.13: Inequalities in PCMCE – Sample HHDs of Urban Delhi



Gini 1 = 0.86; Gini 2 = 0.375; Gini 3 (OOP) = 0.698

extent in Delhi, health inequalities are strikingly higher in most places, particularly in areas of UP. A tentative inference to draw from these results may be that health care is accessed quite unevenly in most of the places, with almost no or negligible amount of spending on health by a group of people and vice versa. It also works to generate a significant amount of inequalities in total PCMCE.

3.5: Loans and Borrowings by Sample Households: Prevalence, Sources and Share of Borrowings for Health Payments

In addition to total or per capita consumption level, another important criterion to judge the economic status or well being of a household is to know about its financial obligations; one of them is the borrowings from external sources against certain interest payment. Borrowings are obviously for variety of reasons, some are purely for consumption purposes including out-of-pocket spending on treatment of a family member, and others arise due to financing needs of households to meet their socio-familial commitments, purchase of assets, consumer durables or even to re-pay their previous loans. But, in many

cases, an average household borrows out of duress, to bridge the gap between income and expenditure. Our focus in this part of the analysis remains very limited and broadly confines to knowing the prevalence of cash borrowings for health purposes and its attendant details including the share of indebted households in the sample, how do these households differ across places and so on. To be precise, three broader issues have been examined:

- Share of households with cash borrowings and purpose of loans: health or non-health? If for health, is it for treatment of an earning member, a child or an elderly person?
- Source of loans: relatives or non-relatives, traditional lender or a banking institution?
- Source of loan repayment: sale of family asset, new loan, past savings, existing income sources?

We begin by examining the fraction of indebted households in total sample, their rural-urban differentials, and purpose of loans – in particular health related cash loans.

Health and Non-health Borrowings

As mentioned, borrowing are either made to circumvent distress conditions due to unforeseen events in the family including ailments or to raise required finances by the households to meet their socio-investment goals. We have therefore tried to collect information from the households by asking them if they have any ongoing debt obligations at the time of the survey. Next set of questions included purpose of loans, sources and other requisite details. The share of indebted households in our sample is given in Table 3.13. This table adds to the observation stemming from the All India Debt and Investment Survey of the NSSO (January – December 2003) suggesting a very large proportion of total cash borrowings by the rural households. Table 3.13 indicates majority of rural households (52.4 percent) under cash debt in combined villages of UP and Rajasthan. Urban households with cash debt obligations are however much lower in size; little over a quarter (26.7 percent) of the total sample. Jhansi in UP and Dausa in Rajasthan in our sample are the most indebted areas – the latter shows highest incidence of borrowings among the urban households, and the former counts highest in terms of rural indebtedness. For whatever may be the reason but tribals are shown to be the least indebted among the four social groups in rural areas. Of the remaining three, more than 50 percent of each group has reported being in debt at the time of the survey. Even the high

caste population is no exception. Hindus and Muslim do conform closely to each other at least on this criterion.

Table 3.13: Share Indebted Households in Total Sample Households

Characteristics	Indebted Households: Rural and Urban Samples					
	Rural		Urban		Total	
	N	Indebted HHDs (%)	N	Indebted HHDs (%)	N	Indebted HHDs (%)
Total Sample	1250	52.4	760	26.7	2010	42.7
UP	750	56.3	250	26.0	1000	48.7
Unnao	450	49.8	150	20.7	600	42.5
Jhansi	300	66.0	100	34.0	400	58.0
Rajasthan	500	46.6	150	31.33	650	43.1
Dausa	250	56.8	50	52.0	300	56.0
Dungarpur	250	36.4	100	21.0	350	32.0
Delhi	-	-	-	-	360	25.3
Delhi Slums	102	37.3	-	-	-	-
Delhi Non - slum	-	-	258	20.5	-	-
Social Group						
SC	291	55.3	164	31.1	455	46.6
ST	231	41.1	18	27.8	249	40.2
OBC	527	55.4	250	29.2	777	47.0
Upper Caste	201	53.2	328	22.6	529	34.2
Religion						
Hindu	1,152	52.3	637	26.5	1,789	43.1
Muslim	98	54.1	90	28.9	188	42.0

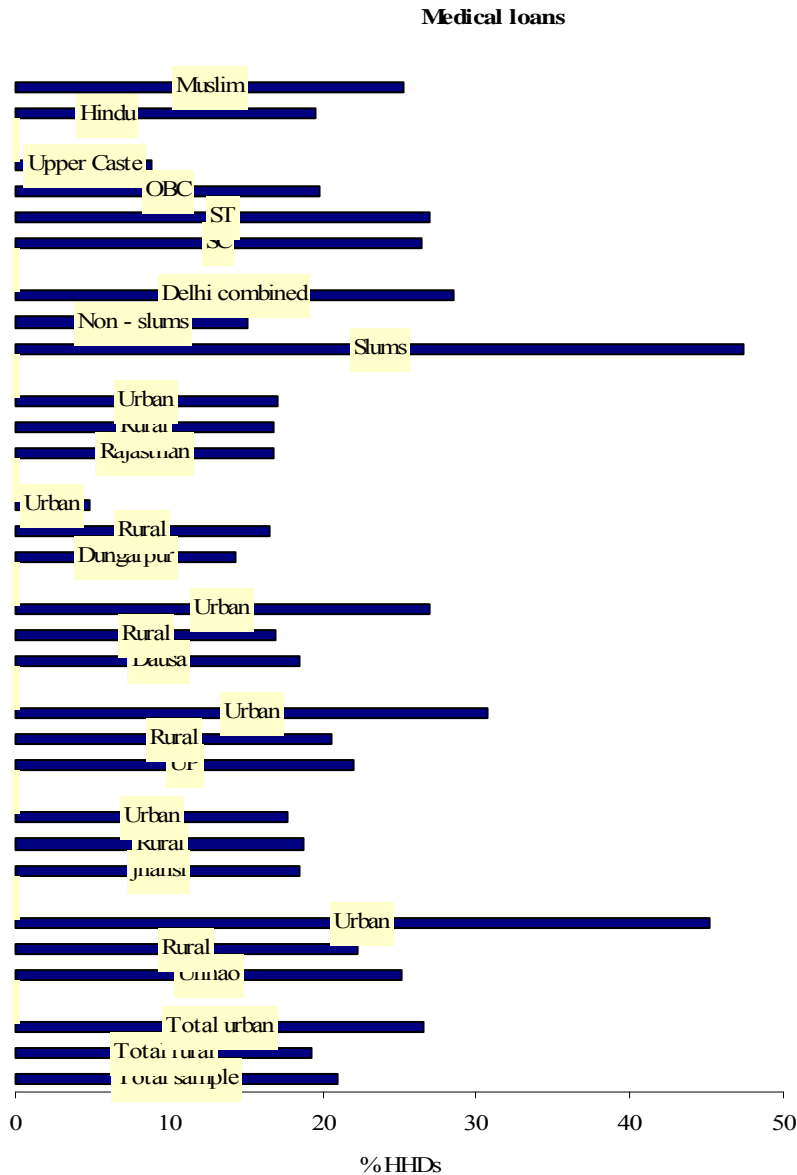
Reasons given by responding households to secure loans are furnished in Table 3.14. Two broad reasons have been presented: medical and non-medical - the latter combines all categories of loans including those for purely consumption purposes as also those required to finance productive needs of the families. With the exception of urban Dungepur (Rajasthan), we notice from this table that medical loans are quite prevalent in most of the areas under study. More than a quarter of indebted households in urban areas (26.6 percent) have reportedly been driven to come under loan because of certain medical contingencies. The same in rural areas turns out to be little over 19 percent. Does it mean that public health care facilities in urban areas are insufficient or is it a reflection of easier loan accessibility to urban people through different sources? While a categorical answer to both of these questions may not be possible with the data available to us, these are indeed significant

Table 3.14: Distribution of Medical and Non-Medical Loans (%)

Study Groups & Study Areas	Number of Indebted Households (N)	Purpose of Loans	
		Medical	Others (consumption & productive combined)
Total Indebted HHDs	858	21.0	79.0
Total rural	655	19.2	80.8
Total urban	203	26.6	73.4
Unnao	255	25.1	74.9
Rural	224	22.3	77.7
Urban	31	45.2	54.8
Jhansi	232	18.5	81.5
Rural	198	18.7	81.3
Urban	34	17.6	82.4
UP	487	22.0	78.0
Rural	422	20.6	79.4
Urban	65	30.8	69.2
Dausa	168	18.4	81.6
Rural	142	16.9	83.1
Urban	26	26.9	73.1
Dungarpur	112	14.3	85.7
Rural	91	16.5	83.5
Urban	21	4.2	95.2
Rajasthan	280	16.8	83.2
Rural	233	16.7	83.3
Urban	47	17.0	83.0
Slums	38	47.4	52.6
Non - slums	53	15.1	84.9
Delhi combined	91	28.6	71.4
SC	212	26.4	73.6
ST	100	27.1	72.9
OBC	365	19.7	80.3
Upper Caste	181	8.8	91.2
Hindu	771	19.6	80.4
Muslim	79	25.3	74.7

issues and need to be examined separately with all requisite details. The following discussion may however give some idea about the intake of medical loans from private money lenders.

Figure 3.14: Share of Medical Loans in Total Loans by Different Socio-Religious Groups & Study Areas



Differentials in loan intake by various household categories are evident from Figure 3.14 as well. This figure reconfirms a much bigger fraction of urban households under medical debt at different places (see, for example urban Unnao or Dausa). Perhaps the more disturbing evidence from this figure relates to the slum households in Delhi. They are the biggest borrowers of money for medical reasons. Tribals and Muslims are also ahead in their respective categories.

Sources of Borrowings

Seeking loans to meet contingencies may not be as much catastrophic. The worst perhaps lies with the source of borrowings. Unfortunately, due to no or limited access to modern banking facilities and complex lending rules even by public sector banks, most poor and low income households may have no other option but to rely on private money lenders with stringent repayment conditions including high interest rates. The details given in Table 3.15a clearly reveal private lending as the most commonly accessed method to meet medical expenses followed by a small percentage of households raising money from informal network of close family (mostly sons and daughters), friends or neighbors. The share of banks is obviously lowest, rather miniscule, due to procedural difficulties.

The role of private lending appears to be especially large in rural areas where informal family sources appear to work less effectively - perhaps due to wider poverty and cash flow constraints. Table 3.15a indicates a big majority of rural household (about 71 percent of those borrowed to access medical care) with borrowings from private money lenders. Interestingly, urban households are not very far behind either. Almost 52 percent of them had to borrow from local money lenders despite growing emphasis in public pronouncements to improve medical care through involvements of remodeled watch dogs like Rogi Kalyan Samities.

Tables 3.15a and 3.15b are presented *inter alia* to compare the penetration of private money lenders into medical and non-medical borrowing markets. As was expected, the presence of private money lenders in medical borrowings is considerably big. Also, it turns out to be the case in most of the areas and population groups in question. Clearly, these figures indicate a very urgent need for an institutional mechanism to finance the health care needs of low income households in the country. Apparently, anti-poverty measures may not work to its real potential unless health services are scaled up to a considerable extent in every domain, disease occurrences are minimized, and the health care system is brought to bear to the needs of persons forced to borrow from private money lenders.

Table 3.15a: Sources of Borrowings: Households with Medical Loans

	Percent													
	Total Sample		UP		Rajasthan		Delhi		Social Group				Religion	
	Rural	Urban	Rural	Urban	Rural	Urban	Slums	N. slums	SC	ST	OBC	H. Caste	Hindu	Muslim
Banks*	9.5	9.3	11.5	20.0	5.1	0.0	5.6	0.0	7.8	7.4	9.3	14.8	10.2	0.0
Pr. Money Lenders	70.6	51.9	63.2	30.0	87.2	100.0	50.0	62.5	66.7	74.1	72.0	33.3	64.5	71.4
Relatives	19.8	38.9	25.3	50.0	7.7	0.0	44.4	37.5	25.5	18.5	18.7	51.9	25.3	28.6
Col. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Includes loans from cooperative and private banks.

Table 3.15b: Sources of Borrowings: Households with Non-medical Loans

	Percent													
	Total Sample		UP		Rajasthan		Delhi		Social Group				Religion	
	Rural	Urban	Rural	Urban	Rural	Urban	Slums	Non slums	SC	ST	OBC	High Caste	Hindu	Muslim
Banks *	43.9	32.9	53.4	28.9	27.3	43.6	0.0	42.2	35.4	28.8	42.4	52.0	43.0	24.6
Pr. Money Lenders	47.8	40.3	34.9	35.6	70.1	48.7	50.0	33.3	51.6	67.1	44.8	33.1	46.0	52.3
Relatives	8.3	26.9	11.6	35.6	2.6	7.7	50.0	24.4	13.0	4.1	12.8	14.9	11.1	23.1
Col. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

• Includes loans from cooperative and private banks.

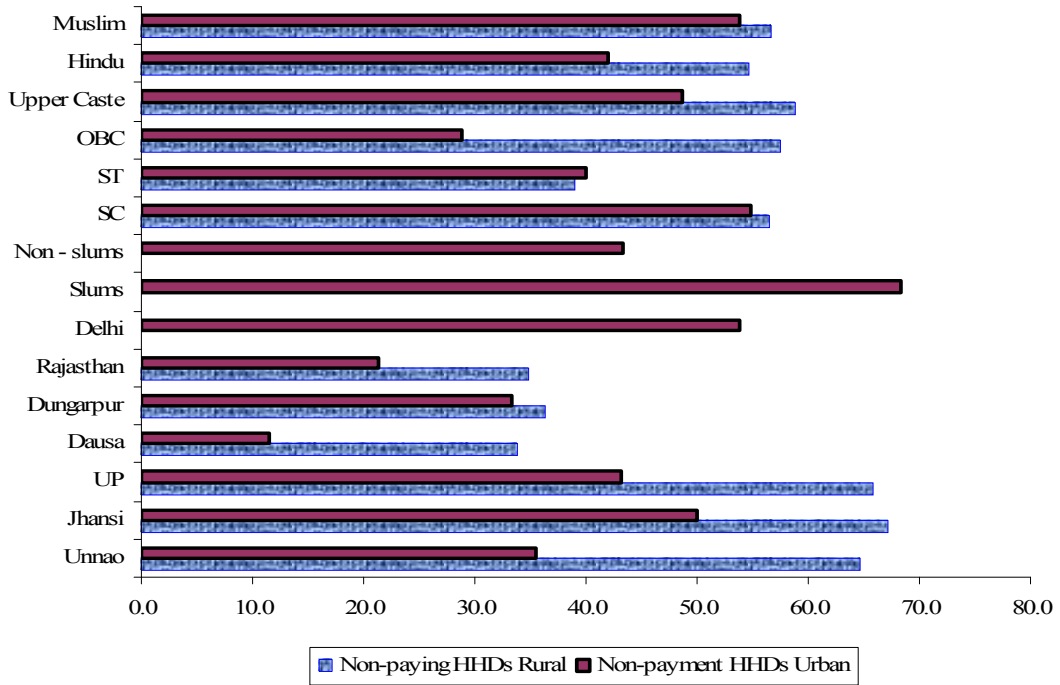
Loan Repayment Status

Loans repayment status of households under both medical and non-medical debts is given in Table 3.16. Two straightforward observations may be made on the basis of this table. First, the size of households deficient in capabilities to initiate loan repayment process is disturbingly large across all the categories of responding households. This has been particularly true for most rural households in both the districts of UP, and among the slum dwellers in Delhi. Muslims and most social groups including high caste categories also fall in line. How or what happens to these households when they eventually start repaying their loans would indeed be an important issue to be examined with more detailed and focused data. Second observation relates to the rural-urban differentials in loans repayment as may be noticed from Figure 3.15. It appears that rural and most other economically backward households may not be able to initiate the loan repayment process immediately. A cooling period may be required by many of them. This may or not be possible depending upon the source of loan. How far the micro credit institutions may lend support under these circumstances has to be considered. In addition, whether the micro-credit institutions can lend small amounts to meet medical contingencies also needs detailed examination.

Table 3.16: Loan Repayment Status of Sample Households

	Rural HHDs		Urban HHDs	
	Payment	Non-Payment	Payment	Non-Payment
Unnao	35.3	64.7	64.5	35.5
Jhansi	32.8	67.2	50.0	50.0
UP	34.1	65.9	56.9	43.1
Dausa	66.2	33.8	88.5	11.5
Dungarpur	63.7	36.3	66.7	33.3
Rajasthan	65.2	34.8	78.7	21.3
Delhi	-	-	46.2	53.9
Slums	-	-	31.6	68.4
Non - slums	-	-	56.6	43.4
SC	43.5	56.5	45.1	54.9
ST	61.1	39.0	60.0	40.0
OBC	42.5	57.5	71.2	28.8
Upper Caste	41.1	58.9	51.4	48.7
Hindu	45.4	54.7	58.0	42.0
Muslim	43.4	56.6	46.2	53.9

Figure 3.15: Rural-Urban Distribution of Non-payment Households (% HHDs)



Appendix Table 3.1
Distribution of Sample Population by Education: Rural and Urban

Educational Level	Combined Sample			U.P.			Rajasthan		
	Rural*	Urban**	Total	Rural	Urban	Total	Rural	Urban	Total
Illiterate	36.1	20.9	30.4	36.7	20.0	32.6	35.3	22.9	32.4
Lit. without formal edu	2.0	1.1	1.6	2.2	0.9	1.9	1.5	1.5	1.5
Up to 5 th standard (Primary)	30.7	27.3	29.5	31.9	25.1	30.2	29.0	28.7	28.9
7 th - 8 th standard (Middle)	18.0	15.1	16.9	17.1	17.0	17.1	19.5	18.6	19.3
Matriculate	6.7	12.1	8.7	6.0	12.7	7.6	7.9	11.3	8.7
Higher Secondary	3.6	9.1	5.7	3.7	10.0	5.3	3.5	7.7	4.5
Graduates & Above	2.3	11.2	5.6	2.1	12.0	4.5	2.6	7.6	3.7
Diploma/Certificate	0.2	1.0	0.5	0.2	1.4	0.5	0.0	0.5	0.1
Degree in technical or Professional edu.	0.3	2.3	1.1	0.1	0.9	0.3	0.7	1.3	0.8
Total Literacy Level	63.9	79.1	69.6	63.3	80.0	67.4	64.7	77.1	67.6
Literate + Illiterate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Chi2 (9) 959.970 Pr. 0.000			Chi2 (9) 522.245 Pr. 0.000			Chi2 (9) 118.430 Pr. 0.000		

* Including slum population. ** Including non-slum population.

Source: IEG Survey on OOP Expenditure on Health, April-June, 2008.

Appendix Table 3.2
Main and Marginal Workers by Districts
District Census Handbook: 2001

	Total Population (Nos)	Main Workers (%)	Marginal Workers (%)	Total Workers (%)
Unnao				
Person	2700324	25.4	8.9	34.3
Male	1422509	43.1	6.9	50.0
Female	1277815	5.6	11.1	16.8
Jhansi				
Person	1744931	26.8	10.3	37.02
Male	932818	42.2	7.0	49.13
Female	812113	9.1	14.0	23.12
Dausa				
Person	1317063	31.7	9.51	41.2
Male	693438	41.3	4.47	45.8
Female	623625	21.0	15.12	36.1
Dungarpur				
Person	1107643	24.6	23.4	48.0
Male	547791	36.8	14.5	51.3
Female	559852	12.6	32.1	44.7

Appendix Table 3.3

Block 5: Household Expenditure on Food & Non-Food Consumption Items

INTERVIEWERS: *Please ask these details for the entire household (including expenditure on pets)*

S. No.	Items	Past one year (Rs.)	Past 30 Days (Rs.)	Past 7 Days (Rs.)
1.1	Cereals & Cereal Products (flour, maida, suji, rice)			
1.2	Pulses/Pulses Products (Dals, Gram & Products)			
1.3	Milk			
1.4	Milk Products (baby food, ghee, butter, ice cream)			
1.5	All Edible Oils, Vanaspati, Refined Oil			
1.6	Vegetables			
1.7	All Kind of Fruits, Nuts, Dry Fruits, etc.			
1.8	Eggs, Meat, Poultry, Fish, Sea Food			
1.9	Sugar, Gur, Candy, Misri, Honey, Khandsari			
1.10	Salt & Spices (chilly powder, curry masala, seeds)			
1.11	Other Food Items(tea, coffee, biscuit, processed food, pickles, sauce, cooked meal, cake, chocolate)			
1.12	Any Other Food Item			
2	Expenditure on Biri/Cigarette/Tobacco/Gutka/Pan			
3	Expenditure on liquor, wine			
4	Primary or secondary level education			
5	Higher education (BA/B.Sc/B.com and above)			
6	Professional education: Medical, Eng, IT, MBA			
7	Expenditure on house: rent/tax/house loan			
8	Expenditure on Fuel and Lighting			
9	Clothing, Bedding, Shoes/Footwear			
10	Social, Religious Expenditure or Festival Expenses			
11	Health Expenditure (self medication/chemists)			
12	Health Expenditure on doctor's advise (Report only Non-Hospitalization Cases)			
13	Health Expenditure due to Hospitalization			
14	Therapeutic Appliances (eye glasses, hearing aids)			
15	Jewellery, Ornaments, Other Ladies Items			
16	Personal Transport (car, motor bike, scooter, cycle)			
17	Household Electrical/Other Appliances, Clock, TV			
18	Crockery, Utensils, Furniture,			
19	Computer, Mobile, Wrist Watch & Misc. Items			
20	Any other including Repair & Maintenance			
21	TOTAL HOUSEHOLD EXPENDITURE			

Appendix Table 3.4

Descriptive Statistics: PCMCE of Sample Populations

	N	Mean MPCE	Std. Dev.	Min. MPCE	Max. MPCE
Total Sample	2010	996.8	1264.2	79.1	16885.4
UP Sample	1000	663.2	594.6	79.1	6958.3
U.P. Rural	750	571.4	470.6	79.1	6958.3
U.P. Urban	250	938.6	806.7	120.0	5356.5
Rajasthan Sample	650	793.7	778.1	143.0	11189.1
Rajasthan Rural	500	715.6	774.5	143.0	11189.1
Rajasthan Urban	150	1054.0	734.5	186.7	3750.4
Delhi Sample	360	2290.2	2191.6	328.2	16885.4
Slums	102	903.8	455.7	328.2	2869.3
Non-Slum	258	2838.3	2358.6	339.1	16885.4
Social Groups					
SC	455	737.2	637.5	79.1	6958.3
ST	249.0	644.2	986.1	143.0	11189.1
OBC	777.0	731.0	653.3	117.4	6987.5
Upper Caste	529.0	1776.5	1954.0	147.3	16885.4
Religion					
Hindu	1789.0	994.3	1263.9	79.1	16885.4
Muslim	188.0	753.3	808.8	166.2	9556.3

References

Atkinson, A.B., *The Economics of Inequality* (2nd Edition), Oxford: Clarendon Press, 1983.

----- On the Measurement of Inequality, *Journal of Economic Theory*, 2(4), 1970 pp. 244-63.

Coudouel, Aline, Jesko S. Hentschel and Quentin T. Wondou, Poverty Measurement and Analysis (Chapter 1) in Jeni Klugman (ed.) *A Sourcebook of Poverty Reduction Strategies, Volume 1: Core Techniques and Cross-Cutting Issues*, Washington D.C.: The World Bank

Cowell F.A. Measurement of Inequality in A.B. Atkinson and F. Bourguignon (eds.), *Handbook of Income Distribution*, Amsterdam: North Holland, 2000.

Dreze, J. and M. Murthi, Fertility, Education and Development in India in Srinivasan K. and Michael Vlassoff (eds.), *Population Development Nexus in India – Challenges for the New Millennium*, New Delhi: Tata McGraw Hill, 2001 pp. 233 – 249.

Gwatkin Davidson, R., Health Inequalities and the Health of the Poor: What Do We Know? What Can We Do? *Bulletin of the World Health Organization*, 78(1), 2000 pp. 3-18.

Klugman, Jeni. (ed.), *A Sourcebook of Poverty Reduction Strategies, Volume 1: Core Techniques and Cross-Cutting Issues (Technical Note A.7)*, Washington D.C. The World Bank, 2002.

National Sample Survey Organization (NSSO), *Level and Pattern of Consumer Expenditure, 2004 – 05 (61st Round)*, Ministry of Statistics and Programme Implementation, Government of India, Report No. 508, December 2006.

----- Press Note On *Household Borrowings and Repayment in India During 2002-03*, Ministry of Statistics and Programme Implementation, Government of India, based on Report No. 502 on the All India Debt and Investment Survey (AIDIS) by the NSSO, 31 January, 2006. Accessed on February 2009: http://www.mospi.nic.in/nss_502_press_note_16feb06.htm.

Planning Commission's Poverty Estimates, 2004-05. *Poverty Estimates for 2004-05*, released by the Press Information Bureau, Government of India, 21 March 2007.

Probe Team Report in Association with Centre for Development Economics, Public Report on Basic Education in India, New Delhi: Oxford University Press, 1999.

Sen, A.K., *On Economic Inequality*, Oxford: Clarendon Press, 1973.

Shah, S. and Manju Rani,, Worlds Apart: Why are Kerala and Uttar Pradesh so different in their human development outcomes? Background Paper for the *World Development Report 2004: Making Services Work for the Poor*, April 1, 2003, (mimeo).

Self-Reported Ailments and Hospitalization: Differentials in Utilization of Health Care

This chapter in brief brings two interesting issues into focus. Both of them have been treated with considerable interest in the contemporary literature on utilization of health services (Rahman and Rao, 2004; Kumar, 2001; Fernandez, et. el., 1999; Ganatra and Hirve, 1994; Koenig, Bishai and Khan, 2001, etc.). First the gender differentials in health care access including hospitalization and out patient care are dealt with. The second follows from the first and relates to similar differentials between the rich and the poor ²¹or, as we have been terming in this analysis, above poverty (APL) and below poverty (BPL) populations.²² We in the attempt remainder of this chapter attempt to provide a few empirical details covering both of these issues, and once again our value addition lies in our focus on high poverty areas of two major states and an exclusive, though small, sample of slum households in Delhi. Alongside, it may also be noted that self reported data on health, morbidity and utilization of health care require cautious interpretation because of variations in perceptions about one's own health, suffering and healing by individual respondents (for a brief and interesting discussion on this, see Sen, 2002).

4.1: Gender-wise and Inter-state Differentials

Despite years of hard work and long drawn conviction to raise an inclusive society, India continues to remain a country with all forms of inequities and socio-economic divides. In health too, it is common to observe such divides. Preferential treatment given to males is particularly high in medical care and there are studies by doctors to reveal that boys receive more prompt attention than girls in medical contingencies and cases of hospitalization (Kumar 2001). It may however be interesting to note that the results drawn in this study supplant a few of these arguments and portray a reverse picture. Table 4.1 indicates a significantly large share of women in utilization of hospitalized treatment. In addition, it happens almost across the board. More or less the same is true for the non-hospitalized care

²¹ With tremendous improvement in health status of populations all over the world, there are some who believe that this debate is losing its relevance. We however refrain from taking a position either way.

²² The 'z' values and the methodology used to derive below and above poverty populations remained as was in Chapter 3, Box 3.1 (i.e., consumption poverty 1).

as well. The reason why we draw an excess of health care by women over men in this analysis is however not very difficult to identify. Our sample is inclusive of women in child bearing ages as well and the overall hospitalization cases are based on all forms of ailments including pre or post natal care, delivery and gynecological problems along with most other normal health related issues and injuries. The same explanation holds for the non-hospitalized cases as well. This point is reiterated further by Figure 4.1 that gives a distribution of women accessing both hospitalized and non-hospitalized health care across five broad age categories: i.e., 0-4, 5-14, 15-39, 40-49 and 60 years or over. We notice from this figure that the share of women in 15-39 age groups – normally considered as the prime years in the reproductive life span of women – is highest followed by those in 5-14 and 40-59 age groups.

**Table 4.1: Hospitalized and Non-hospitalized Care by Gender and Population Groups
N = 11,063**

Operational Variables	Sample population (N)			Hospitalization (%)			Non-hospitalized Treatments (%)		
	(Numbers)			(Recall Period: Past 365 days)			(Recall Period: Past 30 days)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Tot. Sample	5810	5253	11063	2.2	3.8	3.0	14.6	16.9	15.7
UP	2972	2631	5603	1.9	3.4	2.6	15.2	17.6	16.3
Unnao	1833	1603	3436	2.1	3.4	2.7	15.1	17.2	16.1
Jhansi	1139	1028	2167	1.5	3.4	2.4	15.3	18.2	16.7
Rajasthan	1852	1671	3523	2.7	4.1	3.3	13.2	14.2	13.7
Dausa	898	806	1704	2.8	3.2	3.0	14.6	16.5	15.5
Dungarpur	954	865	1819	2.6	4.9	3.7	11.8	12.0	11.9
Delhi	986	951	1937	2.3	4.6	3.5	15.5	19.8	17.6
Non – slum	716	652	1368	2.0	4.1	3.0	15.6	20.4	17.9
Slum	270	299	569	3.3	5.7	4.6	15.2	18.4	16.9
SC	1315	1216	2531	2.4	3.8	3.1	15.4	17.3	16.3
ST	705	656	1361	2.6	2.9	2.7	15.2	15.2	15.2
OBC	2314	2053	4367	2.2	3.9	3.0	13.3	15.9	14.5
Upper Caste	1476	1328	2804	1.9	4.2	3.0	15.7	18.8	17.2
Hindu	5152	4643	9795	2.2	3.9	3.0	14.9	16.7	15.8
Muslim	578	534	1112	2.1	3.6	2.8	12.5	17.4	14.8
BPL	1705	1665	3370	0.6	1.9	1.2	13.0	13.9	13.4
APL	4105	3588	7693	2.9	4.7	3.7	15.3	18.3	16.7

Gender-wise differences in hospitalization are considerably large in both the districts of Rajasthan (2.8 for men and 3.2 in Dausa, and 2.6 for men and 4.9 for women in Dunger

pur). The highest rate of women hospitalization may however be noticed from Delhi slums where it turns out to be 5.7 percent. The non-slum women too are in good numbers although they lag behind their slum counter parts to a good extent. A possible inference may therefore be that women at most of the places have begun to use institutional services for different reasons and their number may grow further with time, though such an evidence is relatively weak in both the districts of UP. Muslims and tribal women are also somewhat lagging.

Figure 4.1: Age-Distribution of Women Using Hospital and Non-hospital Care: (%)

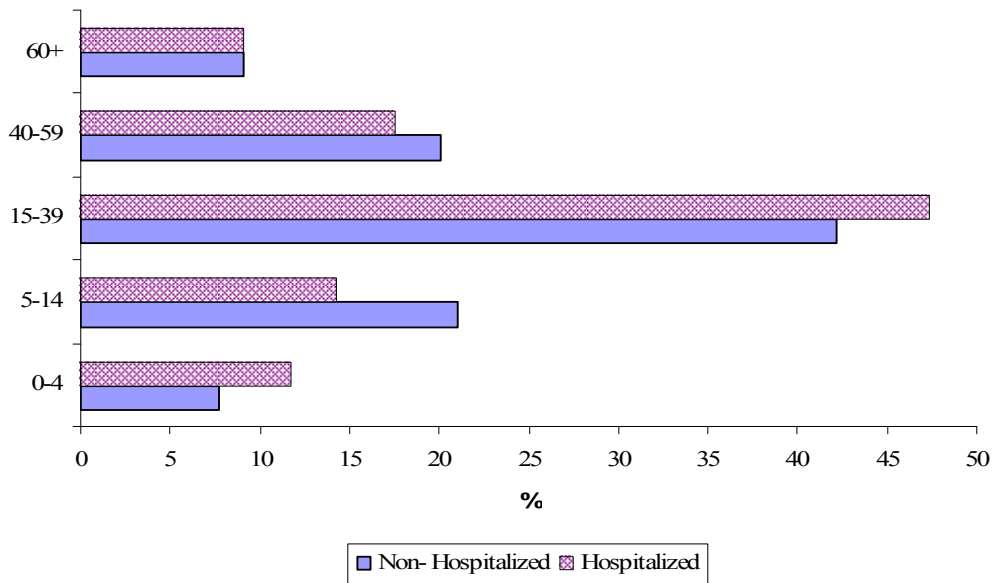
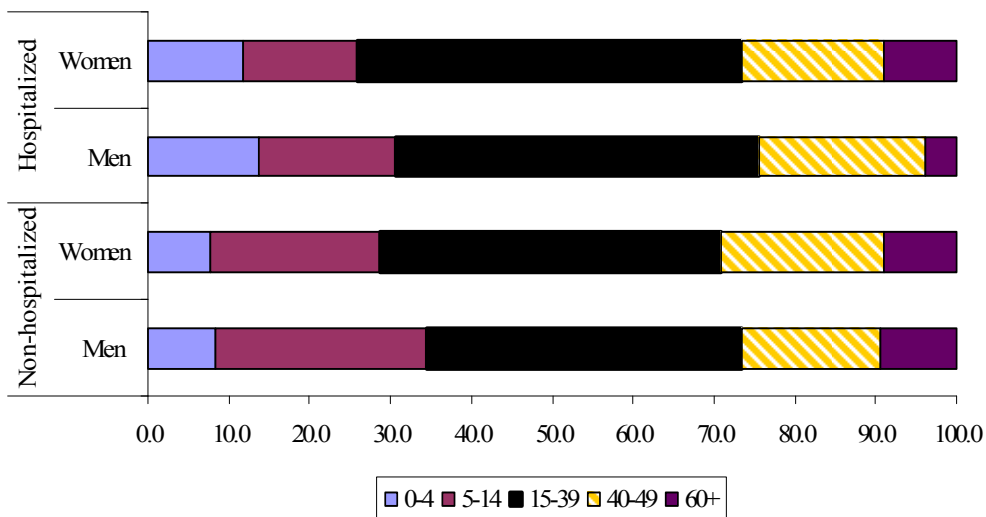


Figure 4.2: Age-Sex Distribution of Health Care Users: Hospital and Non-hospital Care (%)



A men-women comparison of health care utilization across comparable age brackets in Figure 4.2 reconfirms the male bias at least in early ages. The situation turns in favour of women in 15-39 age groups with higher child-bearing potentials. Women in 60+ age groups are also prone to more hospitalization than men (Figure 4.2). However, a generalization of these results may need further evidence based on larger sample size.

As a whole, our results do confirm the existing notion of gender biases in utilization of health care with females, in general, at a disadvantageous position. However, if disaggregated over different age spans, our results indicate that younger women in their prime child bearing ages have accessed health care in higher percentages than their male counter parts. This is indeed a somewhat interesting indication, and need to be re-examined with bigger sample size and more focused survey instruments detailing the causes of health care utilization.

4.2 Poor-Non-poor Differentials in Utilization of Health services

There are positive links, as many analysts believe, between economic status and a better sense of suffering or ill health leading to a better reporting of ailments and utilization of in- or out-patient health care services (Sen, 2002). There are contrary views as well (Smith, 1999; Crossley and Kennedy, 2002). We have relied on the latter.

Table 4.2: Utilization of Health Care by Poor and Non-poor: (%)

	Sample Areas of UP							
	Rural				Urban			
	Below Poverty		Above Poverty		Below Poverty		Above Poverty	
	Male	Female	Male	Female	Male	Female	Male	Female
Hospitalized	0.7	1.3	2.4	4.6	0.5	2.7	3.0	4.2
Non- hospitalized	13.5	15.3	18.1	20.0	6.8	8.1	13.4	19.3
N	867	825	1375	1169	192	185	538	452
	Sample Areas of Rajasthan							
	Rural				Urban			
	Below Poverty		Above Poverty		Below Poverty		Above Poverty	
	Male	Female	Male	Female	Male	Female	Male	Female
Hospitalized	0.3	1.2	3.8	4.5	1.5	4.7	2.7	6.9
Non- hospitalized	14.0	13.8	13.4	14.6	13.5	10.9	11.1	15.0
N	406	406	1016	877	133	128	297	260
	Slums and Non-Slums: Delhi							
	Slums				Non Slums			
	Below Poverty		Above Poverty		Below Poverty		Above Poverty	
	Male	Female	Male	Female	Male	Female	Male	Female
Hospitalized	1.2	3.2	4.2	6.8	0.0	3.6	2.0	4.2
Non- hospitalized	17.3	18.3	14.3	18.5	7.7	14.3	15.9	20.7
N	81	93	189	206	26	28	690	624

The poor and non-poor in this analysis are defined as in Box 3.1 and configure with above poverty and below poverty populations. The details provided in Table 4.2 give a sex-wise distribution of health care utilization by poor and non-poor in rural and urban areas of the states under consideration. This table lends support to the growing perception that the non-poor utilize hospital care in greater proportions than the poor. But this is not decisively so in out-patient care and, in certain areas, poor outnumber non-poor in accessing physicians' care. This may particularly be noticed in Rajasthan. In U.P. ,however, non-poor appears to have greater access to non-hospitalized care as well and contribute to the general thinking that medical care and economic status go side by side.

Notwithstanding these differences, it may be noticed from the results that fraction of poor (BPL) households reporting utilization of health care services — with or without hospitalization — is considerably less than the non-poor (APL). Although, it may not be easy to comment on the correctness of these findings because of limitation in self reported morbidity by poor and illiterate less informed households. There are some other issues as surrounding this entire debate. We will try to go into a few of them later in this analysis.

References

Crossley, Thomas F., and Steven Kennedy, The Reliability of Self-assessed Health Status, *Journal of Health Economics*, Vol. 21, 2002 pp 643-658.

Fernandez E., et al, 'Gender inequalities in health and health care services use in Catalonia', *J Epidemiol Community Health*, 53(4), 1999 pp. 218–222.

Ganatra, B. and S. Hirve 'Male bias in health care utilization for under fives in rural community in western India", *Bulletin of the world health organization*, Volume 72(1), 1994 pp.101-104

Koenig, Michael A., David Bishai and Mehrab Ali Khan, 2001. Health Interventions and Health Equity: The Example of Measles Vaccination in Bangladesh, *Population and Development Review*, Vol. 27(2), pp. 283-302.

Kumar, A.K. Shiva. Health and Human Security: Some Consideration for Priority Setting. In Dev, M. Piush Antony, V. Gayathri and R.P. Mamgain (eds) *Social and Economic Security in India*, Institute of Human Development, New Delhi, 2001 pp. 146-63.

Rahman, Lupin and Vijayendra, Rao, The Determinants of Gender Equality in India: Examining Dyson and Mcore's Thesis with new Data', *Population Development Review*, 30(2), 2004 pp. 239-268.

Sen Amartya , Editorial: Health: perception versus observation. *British Medical Journal*, 324 (7342), 13 April 2002 pp. 860-861.

Smith, James P. Unraveling the SES-Health Connection, *Population and Development Review*, A supplement to Vol. 30, 2004, pp. 108-132.

Chapter 5

Catastrophic Spending on Health by Sample Households: Some Results

A large body of evidence now already exists to suggest that health expenditure in India and many other low income countries in Asia is considerably large (Bonu, Bhushan and Peters, 2007; Gottret, Pablo and George Schieber, 2006; Doorslaer, Owen, Eliya, et al, 2008; Xu, Evans, Kawabate, et al, 2003, etc.). A great deal of this expenditure — almost three quarters or in some cases even more — is borne privately by households in many of these countries, in particular those with inadequate health care systems. In a large number of cases, out-of-pocket spending on health causes serious implications for low income households and affect their sustained living by affecting their normal expenditure pattern, particularly on a host of important non-food items. A number of these issues have begun to receive much wider attention in India over the past few years, particularly after the seminal report by the National Commission on Macroeconomics and Health (Ministry of Health & Family Welfare, 2005). There has also been a growing concern over these years regarding major policy failures one the part of the Centre and state governments in providing adequate resources – physical, financial and human - to meet health care needs of the people, in particular the poor and the needy. The Commission has also explicitly recognized in its report the prevalence of a very high out-of pocket spending on health in several low income states — in particular by the households in lowest income deciles — and its role in pushing a significant fraction of households to face poverty and debt trap (see Section 2 of the Commission’s Report, 2005). More or less a similar inference was drawn in Chapter 3 of this study indicating a large fraction of households sliding below poverty level after incurring out-of-pocket expenses on health. Many of them had to borrow from private money lenders with high repayment liabilities leading to asset divestments.

Recently, India has received considerable attention from the world community for its fast growing economy and rich potential to sustain high growth over the coming years. Along side, however, there has also been a growing concern about serious disparities and unequal distribution of the nation’s wealth (Asian Development Bank, 2007). Health disparities and asymmetrically higher burden of health care expenditure on poorer

households have in particular remained a major concern in many of the recent studies with focus on issues relating to poverty and unequal sharing of welfare strategies initiated by the governments. The National Commission on Macroeconomics and Health (2005) has clearly stated in its report that the ‘inequity in the access to and distribution of public health services has been a concern because of the extent of impoverishment households face on account of ill health, and catastrophic illness in particular (page 71).’

Over the past one decade or so, there have been several studies based on Indian data to examine catastrophic spending by poor and low income households on health and some of its correlates (Bonu, Bhushan and Peters, 2007; Roy and Howard, 2007; Ranson, Sinha, Chatterjee, et al, 2006; Garg and Karan, 2008; Peters, Yazbeck, Sharma, et al, 2002). Most of these studies have however based on earlier rounds of National Sample Surveys (NSS). The study by Bonu, Bhushan and Peters (2007) has however relied on most recent NSS survey (61st round conducted during July 2004 – June 2005) to investigate the incidence, intensity, and important correlates of catastrophic health care payments in India. None of these studies have however tried to make use of data drawn from smaller towns and villages like the one collected by us with a particular focus on economically low performing states and the slum community. An attempt is therefore made in the rest of this chapter to examine the catastrophic nature of spending made by a cross-section of households from the low income districts of two major states and the capital city of Delhi. The focus of this chapter is largely directed towards three critical issues. These are:

- Size of health expenditure by households in relation to their (i) total consumption budget comprising market goods and services, and (ii) non-food consumption expenditure,
- Catastrophic health expenditure by households based on multiple cutoffs or threshold norms. Both total and non-food consumption expenditures are used to define catastrophe.
- Correlates of catastrophic expenditure.

A limitation encountered by studies using head count of catastrophic spending on health ought not to be overlooked. In many cases, this otherwise very useful concept doesn't include the households unable to access health care services due to extreme poverty or lack

of understanding of certain ailments. There may also be households with a trade-off between OOP health care spending and the risks of falling into impoverishment. A few may decide to bargain medical treatment against the risk of any further slippage into living standard or long term consumption poverty. Catastrophe analyses unfortunately exclude all such factors.

5.1 Share of OOP Health Care Spending in Total and Non-Food Consumption Budget

As noted, this section summarizes the magnitude and distribution of OOP health care spending by a sample of households drawn from selected rural and urban areas of UP (total 1000 households; 750 rural and 250 urban), Rajasthan (650; 500 rural and 150 urban) and Delhi (360; 102 from identified slums and 258 from non-slums). There are two basic underpinnings that have helped to evolve this entire discussion. First, it tries to highlight further the cascading role played by the OOP payments in squeezing finances available to lower quintile households and tamper with their budget allocations to different goods and services consumed by the family. Given the asymmetrical nature of intra-household (intra-family) distribution of resources, there are strong possibilities that the aged, women and other weaker members in the family with poor bargaining strength may get disproportionately affected (Agarwal, 1991). The second objective obviously is to bring further evidence in support of an emerging consensus among analysts favouring added public resources to improve health care in order to cushion low income households and bring down the risks of their falling below poverty threshold. Risk pooling measures must also be paid serious attention with measures to ensure a quicker implementation (Joglekar, 2008).

**Table 5.1a: OOP Health Expenditure as Percentage of Total Consumption
Expenditure: Sample Households (%)**

OOP payments as % of HHs total PCMCE	Total Sample		UP		Rajasthan		Delhi	
	Rural	Urban	Rural	Urban	Rural	Urban	Slums	Non-Slum
Panel: 1								
N	1250	760	750	250	500	150	102	258
Mean	14.9	10.6	15.2	10.5	14.5	11.3	13.8	9.0
SD	0.1635	0.1446	0.1674	0.1552	0.1575	0.1449	0.1586	0.1251
CV	109.6	136.7	110.0	148.5	108.9	128.5	115.0	138.8
Panel: 2								
Quintile Means								
Poorest 20%	9.4	7.9	9.7	6.3	8.9	12.2	5.9	7.3
2 nd Quintile	10.2	9.6	10.6	7.4	9.4	14.4	12.7	8.8
3 rd Quintile	13.8	9.6	13.2	9.4	14.7	9.4	12.2	9.3
4 th Quintile	17.5	12.6	18.3	19.0	16.4	6.4	13.0	11.8
Richest 20%	23.7	13.1	27.2	29.9	20.0	19.8	25.6	8.0

**Table 5.1b: OOP Health Expenditure as a Percentage of Total Consumption
Expenditure: Socio-Religious Groups (%)**

OOP payments as % of HHs total PCMCE	Social Groups				Religions	
	SC	ST	OBC	Upper Caste	Hindu	Muslim
Panel: 1						
N	455	249	777	529	1789	188
Mean	15.8	13.8	13.4	10.7	13.5	12.3
SD	0.1742	0.1355	0.1614	0.1440	0.1588	0.1559
CV	110.3	98.4	120.6	134.5	117.8	126.5
Panel: 2						
Quintile means						
Poorest 20%	9.3	9.2	9.0	8.9	9.3	7.6
2 nd Quintile	10.8	14.5	11.6	7.4	11.2	12.1
3 rd Quintile	17.6	20.1	13.7	10.2	14.9	10.3
4 th Quintile	18.4	19.6	16.1	11.1	15.8	14.6
Richest 20%	26.9	14.5	20.2	11.7	16.4	19.0

Table 5.2a: OOP Health Expenditure as a Percentage of Non-food Expenditure: Sample Households (%)

OOP Payments as % of HHDs Non-food Exp.	Total Sample		U.P.		Rajasthan		Delhi	
	Rural	Urban	Rural	Urban	Rural	Urban	Slums	Non-slums
N	1250	760	750	250	500	150	102	258
Mean	31.2	19.8	32.6	20.0	29.1	21.2	27.9	15.5
SD	0.2540	0.2208	0.2615	0.2323	0.2411	0.2329	0.2461	0.1784
CV	81.4	111.7	80.2	116.3	82.9	109.9	88.1	115.2

Table 5.2b: OOP Health Expenditure as a Percentage of Non-food Expenditure: Socio-Religious Groups (%)

OOP Payments as % of HHDs Non-food Exp.	Social Groups				Religions	
	SC	ST	OBC	Upper Caste	Hindu	Muslim
N	455	249	777	529	1789	188
Mean	32.0	30.2	27.4	20.1	27.1	26.7
SD	0.2599	0.2324	0.2550	0.2193	0.2490	0.2490
CV	81.2	77.1	93.1	108.9	91.7	93.1

Tables 5.1 and 5.2 distribute households by the mean of their OOP health share in monthly consumption expenditure – both total as well as non-food.²³ These bivariate tables are further extended to highlight differentials across the observed socio-religious groups including SC, ST, OBC, upper castes as well as the two dominant religious categories in most survey areas – namely Hindus and Muslims (see Tables 5.1b and 5.2b). As before,

²³ Following procedure was followed to derive the mean share of OOP in households' total (or per capita) consumption budget:

$$\text{Step 1: } OOP_{share_i} = \frac{OOP_i}{T_{c_i}} \quad \text{where } i = 1, 2, \dots, N$$

OOP_i is the health payments of the i^{th} HHD $i = 1, 2, \dots, N$ (where is 2010 for total sample).

T_{c_i} stands for total household consumption expenditure for the i^{th} household.

As noted, N is the number of total households, by states, rural-urban or socio-religious characteristics.

$$\text{Step 2: Mean} = \sum_{i=1}^N OOP_{share_i} / N$$

A similar procedure was used to calculate OOP share in non-food consumption expenditure.

Comparing shares of OOP spending separately on hospitalization and outpatient care in total or non-food consumption expenditures was not attempted because of certain data limitations and also to avoid the risks of recall lapses by households.

these results are presented without going into further desegregations to avoid small sample biases and ensure sufficient number of observation within each response category.

Tables 5.1a and 5.1b provide the share of OOP health spending in total consumption budget — the latter furnishes similar information separately with a break-up by two religious and four social groups. Our results in many cases fail to compare with a few of the earlier studies suggesting an average of about 5 percent of the total consumption budget (and 10 percent of the non-food consumption budget) on OOP health care in India (Doorslaer, O'Donnell, Eliya, et al., 2007; Bonu, Indu and Peters, 2007). Our data indicate a considerably higher OOP mean spending on medical bills in all the three states and their selected villages or towns. Also, this lack of comparison continues both in relation to total as well as non-food consumption budgets.

Table 5.1a (Panel 1) gives the average share of OOP spending on health in total consumption of households located in rural and urban areas of both the states. Curiously, the mean OOP share of rural households is considerably large. Further, it exceeds the urban share as well. Among the rural households, for example, the mean OOP expenditure varies between 14 or 15 percent of the total budget. The same in the urban areas is drawn between 10.5 to a little over 11 percent. It may also be noticed from these results that the people from slums have on average spent a much larger share of their consumption budget than those from the non-slums (14 percent by the slum residents compared to only 9 percent by those from non-slums). It strongly suggests a regressive nature of spending if we could assume that all the non-slum households are essentially more affluent. This also reflects a significant departure on our part from the existing body of evidence that suggests that the poor pay less than the non-poor.

We are nevertheless closer to the existing literature if we compare the mean OOP spending of households by consumption quintiles. While the magnitude of spending remained large, the OOP shares of rich and poor differ significantly with highest quintile (or top 20 percent of households according to their PCMCE) spending almost a quarter of their total consumption budget on health (Table 5.1a, Panel 2). In contrast, the same for the bottom 20 percent is about 10 to 12 percent in rural and urban areas. The progressivism, as argued in the literature, is therefore maintained.

Table 5.1b provides OOP differentials among four social (SC, ST, OBC and upper castes) and two religious categories — Hindus and Muslims. Judged by social groupings, the lower castes communities incur a much higher OOP payments than their upper caste counterparts. In terms of religion, though the two respective groups mutually differ, their differences at best remained marginal — i.e., less than a percentage point (Hindus 13.5 percent of their total consumption expenditure while for the Muslims it is given as 12.3 percent). The progressivism among 5 consumption quintiles has also been maintained.

Yet another important point to notice from Tables 5.1a and 5.1b is very high variations around the mean OOP. At almost every quintile level or socio-religious grouping, the coefficient of variation is more than 100 percent, which tends to indicate extreme values at almost every level, quintile or social groups. It also amounts to suggest that there are households in each category with negligible spending on health services — inpatient or ambulatory.

The differences between the two sets of results — our own and those in the literature cited above — raise an interesting question: do studies based on macro data, often regarded as more policy friendly, really provide the realities faced by impoverished households from poor districts or geographical locations? In all fairness, perhaps both have their own merits and ought to be supplemented by each other.

With the mean of OOP payments as high in relation to total consumption expenditure as shown in Tables 5.1a and 5.1b, the same in relation to non-food consumption expenditure can easily be guessed. It touches around 30 percent of the total in rural areas and 20 percent in urban areas (Tables 5.2a and 5.2b). In other words, mean of OOP in relation to non-food expenditure is likely to stand double to that of the total consumption expenditure. The rest of the results follow exactly the pattern exhibited above and, therefore, bear more or less similar explanation.

5.2 Catastrophic OOP Payments: Definition and Head Count

With the mean of OOP health budget in total or non-food consumption expenditure as high as was demonstrated in the preceding tables, there is indeed every possibility that a

large fraction of the low income sample households must be facing a catastrophic situation, depending upon how the catastrophe is defined. Using the criterion employed in recent literature on catastrophic health spending — in particular by the WHO — this section is basically designed to examine a couple of these issues.²⁴ It also provides a headcount of households faced with a catastrophic situation both by their place of residence and their socio-religious characteristics.

Catastrophic Health Spending: Computation Methodology

Catastrophic health care payments are defined by analysts as a fraction of total or non-food consumption expenditure exceeding a certain threshold level. A higher health care share often severely endangers the consumption level of the entire family and brings it to an economic quandary (Garg and Karan, 2008; Bonu, Bhushan and Peters, 2007; Kawabata, Xu and Carrin, 2002). Two levels of threshold OOP spending are generally used to define the catastrophe:

- Catastrophe 1: cut-off share of OOP health spending up to or beyond 10 percent of the total family or household consumption budget.
- Catastrophe 2: OOP health share up to or beyond 40 percent of the total family or household non-food consumption budget.

To simplify the argument, we have slightly deviated from the general practice and used a set of multiple threshold levels (z) for both the catastrophes — 5 percent, 10 percent, 15 percent, and 25 percent of the total consumption budget for catastrophe 1, and 15 percent, 25 percent, 40 percent and 60 percent of non-food consumption budget for catastrophe 2. Algebraically, the following steps are followed to obtain the head count of households (hh) with health care budget share exceeding z :

$$\text{Step 1: } O_{hh_i} = (O_{hh_i} / hh_i^{tot-con}) - (z \times hh_i^{tot-con})$$

$$\text{Step 2: } \bar{O}_{hh} = \frac{1}{N} \sum_{i=1}^N O_{hh_i} \quad (\text{Where } N = 1, 2, \dots, 2010 \text{ for the total sample and } z \text{ (assigned with$$

multiple values) denotes the threshold levels of both total and non-food consumption expenditure. Similarly, O_{hh_i} stands for out-of-pocket health payment budget of i^{th} household (\bar{O}_{hh_i} is the mean OOP budget), and

²⁴ See, for example, a comprehensive methodological note on catastrophic expenditures prepared by Xu (2004). It may also be noted that the OOP expenditure in this analysis does not include any form of reimbursement — insurance or non-insurance.

$hhd_i^{tot-con}$ refers to total consumption expenditure of the same household. Barring changes in z values, an identical procedure was adopted to measure catastrophe based on non-food expenditure.

The entire calculations were made on the basis of the per capita monthly consumption expenditure (total and non-food).

Catastrophe Head Count Results

Table 5.3 gives the socio- religious and state-wise distributions of households exceeding OOP thresholds in relation to their total consumption budget.²⁵ The results are indeed alarming at their face value and pose major challenges for the health planners and institutions engaged in delivery of health care services. These results clearly indicate that an overwhelming share of households in study areas are facing serious catastrophic situation because of high out-of-pocket expenses on health. To illustrate, at the lowest threshold level — i.e., at 5 percent level of total consumption expenditure – there are more than 67 percent of the rural and 51 percent of the urban households exceeding this limit. The same at the 10 percent threshold level — which is generally considered as a catastrophic health spending by most of the analysts — turns out to be 49.5 percent in rural areas and 32 percent in urban areas. Moreover, our results further indicate that almost a fifth (18.5 percent) of the rural households and over a tenth (11.6 percent) of the urban households spend more than a quarter of their total consumption budget on health care.

How far it would be plausible to make a generalization of these results is indeed a questionable issue; it nevertheless vindicates the views commonly held that countries with higher incidence of OOP health care financing are pregnable with a much greater risk of catastrophe (Doorslaer, E. van., Owen O'Donnell, Ravindra P. Rannan-Eliya, et al. 2007).

²⁵ Note that the incidence of catastrophic payment declines with every successive increase in z values.

Table 5.3: Catastrophic Payment 1: Percentage of Households Incurring OOP Spending Exceeding Chosen Thresholds Total Consumption Budget

Catastrophe payments	Sample Size (N)	Catastrophe 1: Over all Consumption Thresholds Multiple z Values				CV (sd/mean) * 100			
		Z = 5%	Z = 10%	Z = 15%	Z = 25%	Z = 5%	Z = 10%	Z = 15%	Z = 25%
Total Sample	2010	61.1	42.9	29.9	15.9	79.82	115.43	153.34	230.30
Rural	1250	67.2	49.5	34.7	18.5	69.89	101.01	137.17	210.11
Urban	400	51.1	32.0	21.8	11.6	97.98	145.96	189.29	276.52
Slum	102	60.8	38.2	27.5	19.6	80.72	127.73	163.37	203.48
Non-slum	258	48.4	30.2	18.6	6.2	103.35	152.21	209.57	389.66
U.P.	1000	62.2	44.6	32.2	17.6				
Rural	750	66.8	49.5	35.5	19.5	70.55	101.14	134.98	203.53
Urban	250	48.4	30.0	22.4	12.0	103.46	153.06	186.50	271.34
Rajasthan	650	64.5	46.0	31.1	16.5				
Rural	500	67.8	49.6	33.6	17.0	68.98	100.90	140.72	221.18
Urban	150	53.3	34.0	22.7	14.7	93.85	139.79	185.33	242.02
Delhi	360	51.9	32.5	21.1	10.0	96.32	144.32	193.58	300.42
Social Groups									
SC	455	67.5	50.3	35.6	20.9	69.51	99.45	134.63	194.88
ST	249	69.9	50.6	34.1	16.1	65.79	99.00	139.18	229.04
OBC	777	60.1	42.6	30.1	16.0	81.53	116.15	152.43	229.63
Upper Caste	529	52.9	33.3	22.5	11.3	94.39	141.76	185.79	279.85
Religious Groups									
Hindu	1789	62.0	43.7	30.5	16.3	78.23	113.51	150.92	226.49
Muslim	188	55.9	38.8	27.7	13.8	89.15	125.85	162.15	250.28

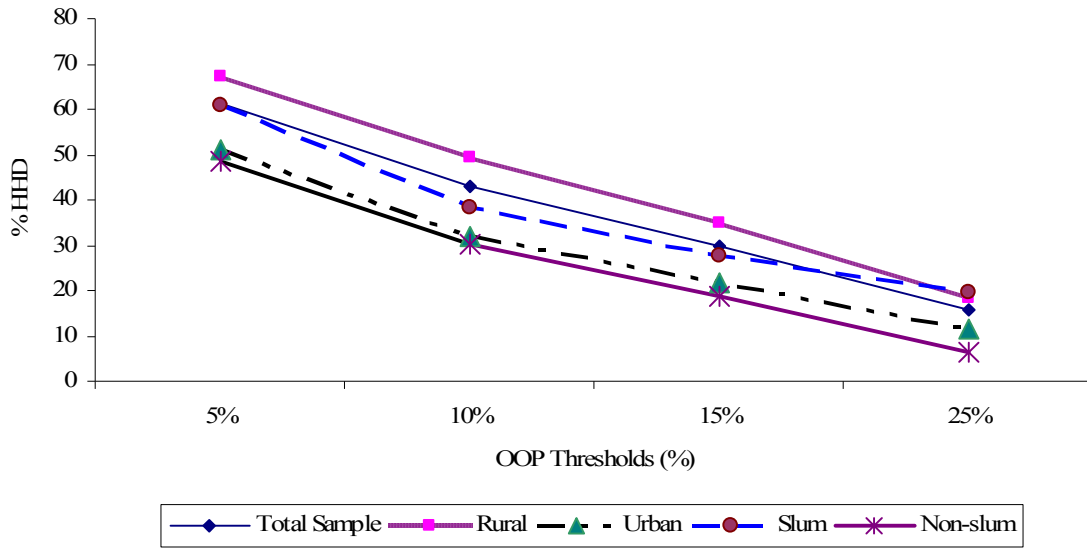
Yet another significant observation arising from Table 5.3 is the higher fractions of rural households in both the states with catastrophic health payments (also see Figure 5.1). The same for the urban areas is turning out to be much less. In other words, it tends to supplement the point suggesting inadequate rural health care services provided by the government. Low caste people, particularly the scheduled castes (SC) communities, are also in the quandary for the same reason. Curiously enough, the share of Muslim households incurring catastrophic spending on health are marginally lower than the Hindus. How far is this responsible due to their insensitivities towards poor health or how far does it indicate their lack of resources to access health care may however not be judged on the basis of these results. Delhi slum residents are to some extent insulated because of better health care

**Table 5.4: Catastrophic Payment 2: Percentage of Households Incurring OOP Health Spending Exceeding Chosen Thresholds
Non-food Consumption Budget**

Catastrophe payments	Sample Size (N)	Catastrophe 2: Non-Food Consumption Thresholds Multiple z Values				CV (sd/mean) * 100			
		Z = 15%	Z = 25%	Z = 40%	Z = 60%	Z = 15%	Z = 25%	Z = 40%	Z = 60%
Total Sample	2010	57.3	42.6	27.2	12.7	86.41	116.02	163.58	262.41
Rural	1250	66.3	51.3	33.9	15.5	71.29	97.51	139.63	233.40
Urban	400	42.8	29.0	18.3	9.5	116.71	158.80	227.72	338.73
Slum	102	56.9	40.2	25.5	14.7	87.53	122.58	171.81	242.02
Non-slum	258	36.0	22.9	9.3	3.1	133.46	184.01	312.86	560.10
U.P.	1000	61.6	47.4	31.5	15.5				
Rural	750	68.0	53.6	36.1	17.6	68.65	93.10	133.04	216.52
Urban	250	42.4	28.8	17.6	9.2	116.79	157.55	216.81	314.79
Rajasthan	650	59.1	43.5	28.0	11.8				
Rural	500	63.8	47.8	30.6	12.4	75.40	104.61	150.75	266.06
Urban	150	43.3	29.3	19.3	10.0	114.74	155.73	204.95	301.01
Delhi	360	41.9	27.8	13.9	6.4	117.81	161.47	249.34	383.31
Social Groups									
SC	455	66.4	51.6	35.4	18.0	71.26	96.86	135.28	213.51
ST	249	68.7	51.0	32.9	12.4	67.67	98.21	143.00	265.72
OBC	777	56.6	43.2	27.5	13.5	87.57	114.64	162.30	253.15
Upper Caste	529	45.0	30.1	17.0	7.0	110.68	152.69	221.07	365.00
Religious Groups									
Hindu	1789	58.0	43.3	27.8	13.0	85.18	114.42	161.28	258.49
Muslim	188	55.3	42.0	26.1	11.2	90.11	117.78	168.88	282.75

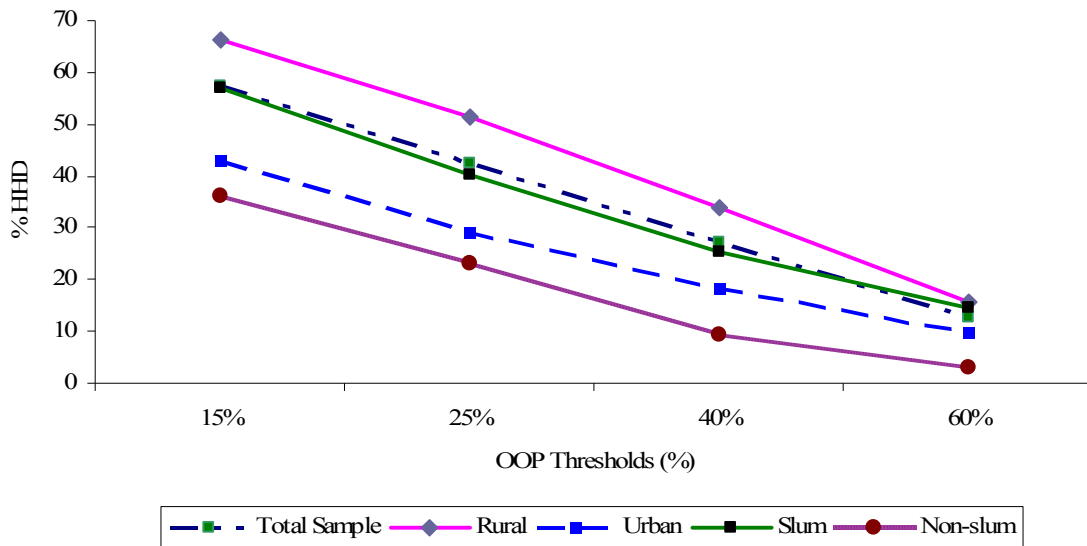
infrastructure in and around the capital city and, as a result, a lesser proportion of them are found incurring catastrophic payments (Table 5.3). Deviations around the mean are relatively smaller at the higher threshold (z) levels and vice versa.

**Figure 5.1: Catastrophe Head Count: Total Consumption Expenditure
N = 2010 (Total Sample)**



Catastrophe head count 2, computed on the basis of non-sustenance (non-food) budgets of sample households, repeat the same grim reality and reiterate further that the rural households are worst affected due to inadequate health care infrastructure of the government (see Figure 5.2). The lower caste SC households are at their worst. Their very big percentages are shown to incur catastrophic payments, causing them to suffer from serious and highly disproportionate loss of wellbeing (Table 5.4). Interestingly, the study areas chosen from both the major states (UP and Rajasthan) are mutually close to each other in terms of their population shares facing consumption catastrophe due to private health payments.

**Figure 5.2: Catastrophe Head Count: Non-food Consumption Expenditure
N = 2010 (Total Sample)**



One of the more alarming observations stemming from the preceding results is a considerably large fraction of households paying more than 60 percent of their non-food budget on medical care. Further, barring certain number of non-slum households in Delhi, the MPO shares are considerably large in all other sample groups covered in the study (Figure 5.2). In a situation like this, would it be possible for these households to come out of the morass created by their OOP payments? It's indeed a serious issue and warrants contemplating immediate remedial action by policy institutions like the Planning Commission. It also requires enhancing existing health care infrastructure, particularly in villages and low income areas of UP and Rajasthan. Our results also indicate very high variation around the mean values (see CVs).

5.3: Intensity of Catastrophic Payments: Measurement of Mean Positive Overshoot

Mean Positive Overshoot (MPO): Computation Procedure

Beside catastrophic payments head count, another significant issue in the underlying context is the intensity of catastrophic payments, defined as the amount of excess payments (or overshoot) by which households exceeds catastrophic threshold z . The earlier set of results given in Tables 5.3 or 5.4 do not provide any idea about the amount paid in excess to z or intensity of overshoot occurring in our sample. A measure, known in the literature as

catastrophic payment overshoot (C_{po}), has therefore been used to obtain the average degree by which health payments (as proportion of total or non-food consumption budget) exceed the threshold z .

Algebraically:

$$C_{po}^{hhd_i} = E_i((O_{hhd_i} / hhd_i^{tot-con}) - z)$$

Where C_{po}^{hhd} is the catastrophic payment overshoot of i^{th} household ($i = 1, 2, \dots, N$), E_i is the overshoot (or the amount exceeding z) paid by i^{th} household, $O_{hhd_i} / hhd_i^{tot-con}$ is the share of OOP payment in households total consumption budget, and z is the catastrophe threshold level with multiple values.

Average overshoot is:

$$\bar{C}_{po}^{hhd} = \frac{1}{N} \left(\sum_{i=1}^N O_{hhd_i} \right)$$

MPOs (mean positive overshoot) are computed to provide the fraction of households with catastrophic health payments times the mean positive overshoot ($\bar{C}_{po}^{hhd} / O_{hhd}$). By way of interpretation, it amounts to suggest that those paying over 5 percent of total consumption expenditure on health care, on average spent 5 percent of their consumption budget ($z = 5$ percent) plus another Rs. 15.6 as overshoot (see Table 5.5). Similarly, those at $z = 15$ percent of their non-food budget, actually 15 percent plus Rs. 28 (see Table 5.6).

Discussion of the MPO Results

The results providing excess payments by households over the z values (i.e., $z +$ the overshoot amount) are presented in Tables 5.5 and 5.6. The former, as was explained earlier, relates to households' total consumption budget, and the latter was computed on the basis of their non-food consumption shares. Both the results are indeed disturbing and reveal a large amount of excess payments (overshoots) beyond the catastrophic threshold (z) limit. Interestingly, the mean overshoots are turning out to be considerably large in most of the cases, irrespective of their residential pattern. This is true for households in non-slum areas of Delhi as well. While there are indications that the rural and slum households are exceeding their threshold limits considerably at a few specific z values (e.g., $z = 15\%$ and

Table 5.5: Intensity of Catastrophic Health Payments: Mean Positive Overshoot (MPO) Total Consumption Budget

	N	Mean Positive Overshoot (excess over z thresholds)				CV (sd/mean) * 100			
		Z = 5%	Z = 10%	Z = 15%	Z = 25%	Z = 5%	Z = 10%	Z = 15%	Z = 25%
Total Sample	2010	15.6	16.2	17.3	18.5	105.62	102.80	96.28	84.23
Rural	1250	16.3	16.3	17.2	18.3	101.54	102.13	96.38	84.80
Urban	400	14.0	16.1	17.5	18.9	115.26	104.73	96.29	83.20
Slum	102	16.1	19.2	20.6	16.9	103.85	84.77	71.85	74.52
Non-slum	258	11.6	12.5	14.0	23.1	123.64	123.46	119.21	72.56
U.P.	1000	16.5	17.1	17.8	18.8	103.09	100.17	95.49	85.00
Rural	750	16.9	17.0	17.8	18.6	100.03	99.40	93.76	82.92
Urban	250	15.1	17.9	18.2	20.0	117.15	103.97	103.86	94.32
Rajasthan	650	15.2	15.4	16.7	17.6	104.59	104.71	96.86	86.83
Rural	500	15.4	15.2	16.3	17.9	103.78	106.47	100.95	88.60
Urban	150	14.5	16.4	18.7	16.3	108.73	97.52	79.20	79.29
Delhi	360	13.1	14.7	16.4	19.6	116.63	108.36	98.84	74.79
Social Groups									
SC	455	17.5	17.6	19.0	19.2	100.84	100.25	90.80	83.17
ST	249	13.9	13.4	13.7	13.9	94.29	96.71	92.08	83.36
OBC	777	16.1	16.7	17.7	19.5	104.83	101.60	96.08	79.67
Upper Caste	529	13.6	15.4	16.6	18.6	117.56	109.57	104.02	92.94
Religious Groups									
Hindu	1789	15.6	16.2	17.3	18.4	105.06	102.24	95.69	84.09
Muslim	188	15.5	16.3	16.8	19.2	108.19	105.44	104.22	89.63

Table 5.6: Intensity of Catastrophic Health Payments: Mean Positive Overshoot (MPO) Non-Food Consumption Budget

	N	Mean Positive Overshoot (excess over z thresholds)				CV (sd/mean) * 100			
		Z = 5%	Z = 10%	Z = 15%	Z = 25%	Z = 5%	Z = 10%	Z = 15%	Z = 25%
Total Sample	2010	28.0	26.0	21.4	15.4	75.60	72.14	72.33	66.05
Rural	1250	29.3	26.5	21.2	15.5	72.10	70.43	72.99	67.54
Urban	400	26.3	26.5	22.7	14.8	84.93	77.45	70.33	61.54
Slum	102	28.3	27.6	24.7	15.9	79.00	72.85	59.71	45.20
Non-slum	258	19.2	18.0	17.0	17.1	89.90	89.23	98.13	60.59
U.P.	1000	29.7	27.3	22.2	15.7	73.26	70.46	71.45	67.88
Rural	750	30.5	27.5	22.1	15.7	71.07	69.74	71.04	66.96
Urban	250	25.9	26.0	22.4	15.6	84.51	75.08	74.68	74.61
Rajasthan	650	27.3	25.3	20.1	14.6	74.50	70.80	72.70	67.09
Rural	500	27.4	24.9	19.5	14.8	73.41	71.29	76.37	69.21
Urban	150	26.9	27.3	23.2	13.5	80.39	68.59	55.05	56.62
Delhi	360	22.7	21.9	21.0	16.3	87.24	83.70	76.28	50.34
Social Groups									
SC	455	30.5	27.7	21.8	14.8	70.76	68.28	72.00	70.45
ST	249	26.6	24.1	18.1	11.1	71.06	66.88	68.88	82.68
OBC	777	29.3	26.8	22.7	16.6	74.34	72.50	69.80	58.64
Upper Caste	529	23.6	23.2	20.3	17.1	87.00	80.50	79.83	64.05
Religious Groups									
Hindu	1789	28.1	25.9	21.3	15.3	75.37	72.32	72.75	66.30
Muslim	188	28.7	26.4	22.1	16.8	74.02	70.55	69.85	65.79

25% of non-food budget shares, and 25% at the level of total consumption expenditure), there is however no specific pattern to suggest any clear cut differentials across households drawn from various states and socio-religious categories. Another notable observation relates to the coefficients of variation (CV) presented in the right hand side of each table. These coefficients remain considerably large in most of the tables, implying large intra-household variations in health payments. It also indicates a good number of households with no or a negligible amount of spending on health.

5.4: Correlates of Catastrophic Health Spending: A Probit Regression Analysis

Basic Formulation of the Model

Drawing upon the results presented in section 5.3, which indicates a very high incidence of catastrophic health spending by households in most of our study areas, it's perhaps imperative to examine some of the major risk factors that are likely to build into perils of such eventualities. We therefore tried to carry out an econometric exercise based on a probit analysis, which follows a cumulative normal probability distribution of an S-type sigmoid curve (Maddala, 2005). The exercise is basically designed to highlight the latent characteristic/s of the households that may potentially be able to germinate into a catastrophe owing to certain *beyond-a-point* spending; in our case this spending relates to health. To estimate our model, we assume to have a regression of the following specification:

$$Y_i^* = \beta_0 + \sum_{i=1}^n \beta_i X_{ij} + u_i$$

Where Y_i^* is not observed but remains latent. What is actually observed is a dichotomous (dummy) variable defined as: $Y_i = 1$, if the i th household suffers from an OOP germinated catastrophic situation, other wise 0. Similarly, the u_i follows a normal probability distribution²⁶, and X_{ij} is a vector of socio-economic variables. Since the observed Y_i are just realization of a binomial process and vary from case to case depending on (X_{ij}), the log likelihood function of the probit may be written as:

$$L = \prod_{y=1} P_i \prod_{y_i=1} (1 - P_i)$$

Since β follows a normal distribution, probit coefficients need to be interpreted in the Z (normal quintile) metric. The interpretation of a probit coefficient β may not be as straight-forward and implies that one-unit increase in explanatory variable leads to increasing the probit score by β standard deviation. It indeed makes it difficult to interpret probit coefficients and, therefore, we mainly use our estimations to find: (i) the direction of

²⁶ For a detailed discussion on cumulative distribution function of u and other related details of the model, see Maddala (2005, pp. 322-325).

relationship between the explained (i.e. catastrophic payments) and the explanatory variables (i.e., sets of household characteristics) and (ii) significance of β - coefficients.

To ensure brevity, we have confined our estimations to only catastrophe 1, defined in relation to total (food and non-food) consumption expenditure of households (see section 5.3). In addition, we have also restricted this exercise to only the lowest (i.e., $z = 5$ percent) and the highest ($z = 25$ percent) catastrophe thresholds. It may *inter alia* help us to examine if there are differences in factors related to the probabilities of having lower and higher catastrophic events. Both the results are given in Table 5.7.

The correlates of catastrophic expenditures were examined by taking into consideration a set of socio-economic and demographic variables, grouped into five major categories.²⁷ These are:

- Households' size and per capita consumption expenditure
- Living condition of household members
- Socio-economic and religious background of the households
- Age-sex composition of household members
- Locational characteristics – e.g. rural, urban, slum and non-slum

Both non-slum residents and women in the age group 60 and above were the two comparison groups. A detailed list of variables is given in Table 5.7.

²⁷ An exercise to estimate elasticities are currently in progress.

Table 5.7: Estimation of Probit Regression: List of Variables
Explained Variable = Sample Households with Catastrophic Payments
(z = 5% & 25% of Total Consumption Expenditure)

Variable Names	Form of Variables	Construction Variables
A. HHD Characteristics		
ln_mpce	Log of MPCE	Natural log
ln_size	Log of HHD size	Natural log
loghhsize~q	(Log of HHD size) ²	Natural log
pucca/kutch or a non-pucca	1 = pucca house, 0 otherwise	-
B. Living Conditions		
light	1 = Electricity, 0 = no electricity	-
water	1 = Safe (Tape/covered well), 0 = Otherwise	-
cooking fuel	1 = LPG, Coal, Electricity 0 = All others (firewood, kerosene, etc.)	-
toilet	1 = Flush or pit Toilet, 0 = Field and all others	-
drainage	0 = Kutcha nali, 1 = Pucca nali	-
nala	1 = No open drain or nala near house 0 = Open drain near house (breeding mosquito)	-
C. Socio-economic & Religious		
working	Share of working to non-working members In a HHD	Number of workers/size of a HHD
casual_nregs	Share of persons in a household working as casual or NREGS worker*	Number of persons working as Casual, NREGS/size of a HHD
primary	Proportion of persons in a household educated above primary	Number of persons educated up to primary level/size of a HHD
middle	Proportion of persons in a household educated above middle level	Number of persons educated up to middle level/ size of a HHD
secondary	Proportion of persons in a household educated up to secondary level	Number of persons educated up to secondary level/size of a HHD
religion	1 = Hindu, 0 = All others	-
caste	1 = SC,ST, 0 = All others	-
obc	1 = Other backward castes, 0 = All others	-
D. Demographic Profile		
mean_age	Average age of a household	Total age/size of HHD
sq_mean_age	Square of average age of a HHD	(Total age/size of HHD) ²
m0_4	Proportion of males aged 0 - 4 in a HHD	Males in 0-4 ages/size of HHD
m5_14	Proportion of males aged 5 - 14 in a HHD	Males in 5-14 ages/size of HHD
m15_40	Proportion of males aged 15 - 40 in a HHD	Males in 15-40 ages/size of HHD
m41_59	Proportion of males aged 41 - 59 in a HHD	Males in 41-59 ages/size of HHD
m60_above	Proportion of males aged 60 or more in a HHD	60+ Males/size of HHD
f0_4	Proportion of females aged 0 - 4 in a HHD	Females in 0-4 ages/size of HHD
f5_14	Proportion of females aged 5 - 14 in a HHD	Females in 5-14 ages/size of HHD
f15_40	Proportion of females aged 15 - 40 in a HHD	Females in 15-40 ages/size of HHD
f41_59	Proportion of females aged 41 - 59 in a HHD	Females in 41-59 ages/size of HHD
f60_above	Proportion of females aged 60 or more in a HHD	60+ Females/size of HHD
E. Residential Character		
up_r	1 = Rural HHDs (UP), 0 = Others	-
up_u	1 = Urban HHDs (UP), 0 = Others	-
raj_r	1 = Rural HHDs (Rajasthan), 0 = Others	-
raj_u	1 = Urban HHDs (Rajasthan), 0 = Others	-
del_slum	1 = Slum HHDs (Delhi), 0 = Others	-

Table 5.8: Correlates of Catastrophic Health Spending: Probit Analysis
Dependent Variable = Catastrophe Threshold at 5% & 25% of Total Consumption Budget

Catastrophe Threshold (z) = 5%	Catastrophe Threshold (z) = 25%
No. of Obs. 2010	No. of Obs. 2010
Wald chi2(34) = 173.60	Wald chi2(34) = 203.33
Prob > chi2 = 0.000	Prob > chi2 = 0.000
Pseudo R ² = 0.0751	Pseudo R ² = 0.1761

Variables	Panel A - Catastrophe 1: z = 5%			Panel B - Catastrophe 1: z = 25%		
	Coefficient	St. Error	z	Coefficient	St. Error	z
A. HHD Characteristics						
ln_mpce	0.399***	0.065	6.130	1.066***	0.089	12.000
ln_size	-7.737	67.621	-0.110	165.531*	101.356	1.630
loghhsize~q	3.978	33.889	0.120	-82.739*	50.780	-1.630
B. Living Conditions						
pucca/kutchra or non-pucca	0.002	0.089	0.020	-0.237***	0.107	-2.210
light	-0.180*	0.098	-1.840	-0.076	0.119	-0.640
water	-0.094	0.166	-0.570	-0.453***	0.170	-2.670
cooking fuel	-0.224**	0.108	-2.080	-0.423***	0.135	-3.140
toilet	-0.158	0.104	-1.520	-0.071	0.123	-0.580
drainage	0.121	0.119	1.020	0.014	0.178	0.080
nala	-0.162*	0.091	-1.770	-0.130	0.106	-1.220
C. Socio-economic & Religious Characteristics						
working	-0.365	0.226	-1.620	-0.831***	0.301	-2.760
casual nregs	0.682***	0.216	3.160	0.924***	0.270	3.420
primary	-0.118*	0.190	-0.620	0.149	0.238	0.630
middle	0.291	0.201	1.450	-0.243	0.276	-0.880
secondary	-0.915***	0.200	-4.570	-1.214***	0.284	-4.270
religion	0.141	0.098	1.430	0.109	0.131	0.830
caste	0.171*	0.092	1.870	0.230***	0.117	1.970
obc	0.033	0.084	0.390	0.097	0.111	0.880
D. Demographic Profile						
mean_age	0.063***	0.019	3.210	-0.004	0.024	-0.180
sq_mean_age	-0.001***	0.000	-2.490	0.000	0.000	0.650
m0_4	2.940***	0.835	3.520	0.845	1.018	0.830
m5_14	1.073	0.676	1.590	-0.518	0.843	-0.610
m15_40	0.261	0.587	0.440	-0.211	0.741	-0.290
m41_59	0.070	0.471	0.150	-0.321	0.673	-0.480
m60_above	0.018	0.443	0.040	-0.098	0.602	-0.160
f0_4	2.867***	0.853	3.360	1.083	1.038	1.040
f5_14	1.429*	0.689	2.080	0.108	0.844	0.130
f15_40	0.695	0.578	1.200	-0.244	0.725	-0.340
f41_59	0.711	0.452	1.570	0.153	0.570	0.270
E. Residential Character						
up_r	0.292*	0.159	1.840	1.065***	0.239	4.470
up_u	0.201	0.133	1.510	1.064***	0.217	4.900
raj_r	0.312***	0.151	2.070	0.853***	0.231	3.700
raj_u	0.268*	0.155	1.720	1.036***	0.246	4.220
del_slum	0.338**	0.174	1.940	0.927***	0.256	3.630
Constant	-4.620	1.104	-4.180	-7.726	1.420	-5.440

*** P<0.001. ** P<0.05. * P<0.10.

Highlights of Probit Analysis

The results, given in Table 5.8, indicate the effects of individual variables on the probability of having catastrophic spending by households in events of sickness episodes requiring in or out-patient care. Among all the variables, it may be noticed from the results that the per capita household consumption expenditure, which is generally considered as representing the economic status of the households, turns out to be one of the most significant correlates of catastrophic spending with 'z' values as high as 6.1 at 5 percent and 12.0 at 25 percent thresholds, respectively. In both the scenarios, the variable is significant at 99 percent confidence interval. The positive sign of the household expenditure is on expected lines implying that economically better-off households are running the greater risks of making catastrophic payments. A direct relationship between the per capita household consumption expenditure (mpce) and catastrophic payments should, however, be understood by keeping two perspectives into consideration: (i) the likely endogeneity between household expenditure and catastrophic payments, and (ii) lower ability to pay (ATP) by the poor for health.

Although household size does not prove to be significant, the sign of the variable clearly indicates that the probability of making catastrophic payments increases with increase in household size. This essentially implies that economies of scale does not hold true for catastrophic payments. Larger households are in greater risk of making catastrophic payments. However, the probability of catastrophic payments *increases at a declining rate* with increase in the household size as indicated by the negative sign of the variable 'square of household size'. This may be because one or other ailing members in large families may receive lesser attention for treatment.

Households with brick-made *pucca* houses have greater probability of making catastrophic payment at only 5 percent threshold level but have strong lower probability of such payments at higher thresholds such as 25 percent or more.

In general, better living conditions in terms of drinking water and sanitation facilities lead to reduce probability of making catastrophic payments by households. This is reflected by the negative signs linked with most of the variables used to characterize living conditions

of sample households. It is important to note that among others, the availability of safe drinking water and improved cooking fuel turn out to be highly significant in reducing the probability of bigger catastrophes at the higher threshold of 25 percent.

Socio-economic and religious background of households reflect a mixed picture, with a strong indication that secondary level education leads to lowering of the probability of catastrophic payments. Even households with primary level education may find themselves protected to a certain extent. As compared to households with higher proportion of its members as illiterate, households with higher education are able to lower the risk of catastrophic payments. Similarly, higher workers ratio in households (i.e. lower burden of economic dependency) leads to lowering of the probability. It may as well be because of some sort of contribution from employers to health expenditure of households. However, the households with casual workers in social employment programs such as NREGA, as compared to those who do not participate in the NREGA scheme, do not enjoy the facilities of employer's contribution and, therefore, run higher risks of making catastrophic payments. As far as social background of households is concerned, the results clearly indicate that households belonging to lower castes and non-Hindu run higher probability of catastrophic expenditure.

Age of the family members has important implications for catastrophic payments. With increase in the average age of family members the probability of catastrophic payment increases at the 5 percent threshold level but becomes insignificant at the higher thresholds. Further, households with infants and children below the age of 14 years have higher risk of making catastrophic payment at 5 percent threshold while most of these demographic variables are not significant at the higher threshold of 25 percent.

Like the per capita consumption expenditure, the locational factors such as state and region also play an important role in the underlying context. It indicates a comparatively vulnerable situation of households living in the remote and poorer regions. As compared to non-slum areas of Delhi, households in all other areas in our sample show a strong and positive association with probability of catastrophic payments. The relationship becomes even stronger with the higher threshold of 25 percent.

Concluding Observations

To cap a few of the critical observations arising from the preceding exercises, this whole chapter was mainly directed to examine three significant policy issues: (i) share of OOP health spending by households in their consumption budget, (ii) the extent to which these spending result in a catastrophe and force households to face serious vulnerabilities, and (iii) a set of socio-economic, demographic and ethnic correlates liable to bring such catastrophic spending by households. The observations drawn from this entire analysis are rather worrisome as they reveal that in large number of cases even a small share of consumption budget going to health care ended with catastrophe and loss of wellbeing. In particular, the head count of catastrophic payments in most of the study areas, particularly among rural and slum households, is turning out to be considerably large. The mean positive overshoot (MPOs), computed to examine the intensity of OOP health spending exceeding a certain catastrophic thresholds, also proves to be equally discouraging. Unfortunately, it happens without too many exceptions — geographical, place of residence or otherwise. Among the significant correlates of catastrophic spending are economic status of households surrogated by per capita consumption expenditure, their living conditions including access to sanitation and safe drinking water, nature of work, educational level, smaller children in 0-4 age groups and place of residence. Households living in remote and poorer regions are expected to face a much bigger risk of catastrophic spending. It vindicates the general perception that rural households seriously lack in terms of health care facilities. Despite a few data limitations and caveats, these observations are expected to prove useful in framing appropriate policy responses.

Appendix Table 5.1

Descriptive Statistics: Variables Used in Probit Regression Analysis

Variables	Obs.	Mean	Std. Dev.	Min	Max
catcount5	2010	0.611	0.488	0	1
ln_mpce	2010	6.519	0.789	4.370	9.734
lnsize	2010	1.619	0.440	0	2.773
loghhsize~q	2010	3.241	0.877	0.020	5.546
pucca	2010	0.397	0.489	0	1
light	2010	0.536	0.499	0	1
water	2010	0.963	0.190	0	1
cooking	2010	0.310	0.463	0	1
toilet	2010	0.405	0.491	0	1
drainage	2010	0.128	0.334	0	1
nala	2010	0.858	0.349	0	1
working	2010	0.333	0.182	0	1
casual_nregs	2010	0.145	0.190	0	1
primary	2010	0.518	0.307	0	1
middle	2010	0.389	0.311	0	1
secondary	2010	0.129	0.228	0	1
religion	2010	0.890	0.313	0	1
caste	2010	0.350	0.477	0	1
obc	2010	0.387	0.487	0	1
mean age	2010	27.653	10.936	11.200	84.500
sq_mean age	2010	884.257	819.541	125.440	7140.250
m0_4	2010	0.047	0.094	0	0.6
m5_14	2010	0.119	0.144	0	0.667
m15_40	2010	0.242	0.154	0	1
m41_59	2010	0.080	0.117	0	1
m60 above	2010	0.044	0.116	0	1
f0_4	2010	0.038	0.087	0	0.600
f5_14	2010	0.097	0.133	0	0.625
f15_40	2010	0.220	0.135	0	1
f41_59	2010	0.072	0.115	0	1
up_r	2010	0.373	0.484	0	1
up_u	2010	0.124	0.330	0	1
raj_r	2010	0.249	0.432	0	1
raj_u	2010	0.075	0.263	0	1
del_slum	2010	0.051	0.220	0	1

References

Agarwal, B., 'Social Security and the Family: Coping with Seasonality and Calamity in Rural India', *The Journal of Peasant Studies*, Vol. 17(3), 1990 pp. 314-412.

Asian Development Bank, *Key Indicators 2007: Inequality in Asia*, Manila, 2007.

Bonu, S., Indu B., and David H. Peters, 'Incidence, Intensity and Correlates of Catastrophic Out-of-Pocket Health Payment in India', *ERD Working Paper Series No. 102*, Asian Development Bank, October 2007.

Doorslaer, E. van., Owen O'Donnell, Ravindra P. Rannan-Eliya, et al., 'Catastrophic Payments for health care in Asia', *Health Economics*, Vol. 16(11), November 2007 pp. 1159-1184.

Garg, C.C., and Anup K. Karan, 'Reducing Out-of-Pocket Expenditure to Reduce Poverty: A Disaggregate Analysis at Rural-Urban and State Level in India', *Health Policy and Planning*, 2008. DOI: 10.1093/heapol/czno 46.

Gottret, P., and George Schieber, *Health Financing Revisited – A Practitioner's Guide*, Washington D.C.: The World Bank, 2006.

Joglekar, R., *Can Insurance Reduce Catastrophic Out-of-Pocket Health Expenditure*, Indira Gandhi Institute of Development Research? Mumbai, September 2008, mimeo.

Available at: <http://www.igidr.ac.in/pdf/publication/WP-2008-016.pdf>.

Kawabata, K., K. Xu, and G. Carrin, 'Preventing Impoverishment through Protection against Catastrophic Health Expenditure', *Bulletin of the World Health Organization*, 80:612, 2002.

Maddala, G.S., *Introduction to Econometrics* (Third Edition), John Wiley, England: West Sussex, 2005.

National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare (Government of India), *Report of the National Commission on Macroeconomics and Health*, Chapter 2 on India's Health System: The financing and delivery of health care services, August 2005, pp. 15-81.

National Sample Survey, 61st Round, July 2004 – June 2005: Level and Pattern of Consumer Expenditure, 2004-05, National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India.

National Sample Survey, 60th Round. January–June 2004, *India: Morbidity, Health Care and the Condition of the Aged, January-June 2004*, Report No. 507, National Sample Survey Organization, 2006.

Available at: http://mospi.nic.in/rept%20%20pubn/ftest.asp?rept_id=507&type=NSSO

O'Donnell, O. Eddy van Doorslaer, A. Wagstaff and Magnus Lindelow, *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation*, The World Bank: Washington, D.C. 2008.

Peters, D.H., A.S. Yazbeck, R.R. Sharma, G.N.V. Ramana, L.H. Pritchett and A. Wafstaff, *Better Health System for India's Poor: Findings, Analysis and Options*, The World Bank: Washington D.C. 2002

Ranson, M.K., T. Sinha, M. Chatterjee, A. Acharya, et al., 'Making Health Insurance Work for the Poor: Lessons from the Self-employed Women's Association's (SEWA) Community-based Health Insurance Scheme in India', *Social Science and Medicine*, Vol. 62, 2006 pp. 707-720.

Roy, K., and D.H. Howard, 'Equity in Out-of-Pocket Payments in Hospital Care: Evidence from India', *Health Policy*, Vol. 80(2), 2007 pp. 297-307.

Xu K., *Distribution of Health Payments and Catastrophic Expenditure Methodology*, Discussion Paper Number 2 - 2005 (EIP/HSF/DP.05.2), World Health Organization, Geneva, 2004.

Available at: http://www.who.int/health_financing/documents/dp_e_05_2-distribution_of_health_payments.pdf

Xu K, Evans D.B., Kawabate K., et al, Household Catastrophic Health Expenditure: A Multicountry Analysis, *Lancet*, Vol. 362(9378), 2003 pp. 111-117.

Share of Drugs and Medical Services in OOP Health Spending: Does Drugs Lead to Inflate Households' Health Budget?

The preceding discussion has perhaps clearly revealed that ailments and poor health conditions contribute heavily in exposing households to serious economic issues, press them hard to make out-of-pocket expenses, push a number of them to slip below the threshold poverty level (see the last two columns in Appendix Table 6.1), and render many to meet with serious catastrophic situations — amounting to curtailments in their normal consumption pattern and forcing them in certain cases to borrow from private money lenders (see the discussions in Chapters 3 – 5). All these make analysts to ask a very obvious question: why is there so much of OOP health spending, and what and where public policy interventions could be directed to ameliorate the situation. In certain countries, the answer to these questions rest with demographically mediated age structure changes and rapid population ageing (Dormont and Huber, 2006; Dormont, Grignon and Huber, 2006; Getzen, 1992). Given the fact that in many case health care expenses are determined by the progressing age of the older adults, the growing share of 60 or 65+ is expected to increase the size of health expenditure both in a society as well as in a household. With ageing in India yet to reach the level achieved by those countries, a great deal of health expenditure in this or similar other countries may not be simply considered as age-driven or caused by the ailing old. Components of health care and, in particular, high costs of drugs and diagnostics may as well play a role and make families incur a much greater spending on health. This has also been argued by the National Commission on Macroeconomics and Health (2005, Sec. II).

This chapter is therefore designed to decompose the OOP expenses on health by households into four major components — (i) consultation or doctor's fee, (ii) cost of drugs and medicines (both prescription and self-medicated), (iii) transportation and stay, and (iv) expenses made on diagnostic tests. Presumably, the results of this analysis may help to identify a few areas of major public concern and see if there are possible ways available with the government to reduce the expenses incurred by households on items costing most to their health budget. Three interconnected exercises are presented. These include:

- A detailed distribution of OOP health care expenditure by sample household into four broad categories listed above,
- A similar distribution of households regrouped into five quintile groups - ranging from the poorest 20 percent to the richest 20 percent, and
- Decomposition of OOP expenses into 4 broad expenditure items incurred by households facing lowest ($z = 5$ percent) and highest ($z = 25$ percent) levels of catastrophe based on total (i.e., food + non-food) consumption criterion (see Chapter 5 for a discussion on z-values).

All the results are presented separately for households drawn from rural and urban areas of both the districts in the two major states of UP and Rajasthan.²⁸ The same for Delhi was stated by making a distinction between slum and non-slum households. The small sample bias must nevertheless be kept in mind while interpreting the results.

6.1 Decomposition of Health Care Expenditure by Households: Share of Drugs and Medical Services

A great deal of literature on private financing of health care in India suggests drugs forming almost three quarters or even more of the total OOP spending on health. This has particularly been noticed for the rural households (Sakthivel, 2005).²⁹ Obviously, with such a huge share of drugs and medicines in total OOP budget, any policy intervention to reduce the cost of health care may not be considered without capping the drug prices and reducing their weight in the overall health spending of rural or urban households. Despite a growing realization of this fact (Rane, 1999), it may not be easy to implement in India or elsewhere due to changes in drug policy regime, adopted in compliance with a mix of external and internal forces including demand for liberalization in drug control policies,³⁰ product patent regime, WTO patenting obligations and trade related intellectual property rights (TRIPS).³¹ Some recent studies have already raised concern about these changes followed by

²⁸ These include Unnao and Jhansi in UP, and Dausa and Dungerpur in Rajasthan.

²⁹ Based on unit level data from 55th round of the National Sample Survey (1999-2000), a study by Sakthivel (2005) has reported the share of drugs and medicine in total OOP expenditure of rural households as 77 percent. The same for the households in urban areas has turned out to be 70 percent of their total health budget.

³⁰ An example may be the demand for changes in Drugs Price Control Order (1995) under which a total of 74 bulk drugs and their formulations are controlled. The proposed modifications are however currently under legal scrutiny.

³¹ After India joined the WTO and became signatory to the TRIPS agreement, it was required of the government to introduce product patent on pharmaceuticals since January 1, 2005. The TRIPS agreement makes it difficult for the Indian pharma industries to freely continue with the production of generics of the new patented molecules without license or payment of royalty to the innovator.

substantial increase in drug prices causing escalations in OOP expenses and erosion in health care affordability (Watal 2000; Srinivasan, 1999).

Against this backdrop, we present in Table 6.1 the distribution of OOP spending on drugs and other health care components to reiterate further the primacy of the former in overall health care budgets. This has been noticed all across the sample of households — rural, urban, slum or non-slum, and irrespective of the districts or states they were located. Our results are also to a large extent in the vicinity of the earlier findings (Sakthivel, 2005) suggesting that more than three-fourths of the money spent on health invariably goes to allopathic medicines. Share of other forms of treatment – and hence medicines – are minuscule as may be noticed from the discussion in the next chapter.

Without too much of variations, Table 6.1 indicates almost a similar distribution pattern of health budgets across all the study areas (see also Figure 6.1) with around four-fifths of the total OOP expenditure going to drugs followed by another 5 to 10 percent (depending upon rural-urban and in or out-patient treatment) of the total expenses going to medical practitioner as their consultation fee. Expenditure on diagnostics remains in most cases between 5 to 7 percent of the total budget, and almost an equal amount (i.e., between another 5 to 7 percent) is devoted to meet a few sundry expenses, especially transportation (see Figures 6.1a to 6.1c).

Between the groups of households drawn from UP and Rajasthan, share of money spent on consultation fee is shown to be much higher in the former, particularly in episodes requiring hospitalization. Relatively, however, their expenses on drugs are much less. Both of them however follow almost a similar expenditure pattern in cases where hospitalization was not required.

Table 6.1: Shares of Drug and Non-Drug Expenses in OOP Expenditure on Health Care: Hospitalized & Non-Hospitalized Care

Percent

	Non-Hospitalization				Hospitalization			
	UP	Rajasthan	Delhi	Total	UP	Rajasthan	Delhi	Total
Panel A: Rural HHDs (n=1250)								
Doc. Fee	6.3	7.0	-	6.5	6.8	4.8	-	5.8
Drugs	81.5	81.3	-	81.4	80.5	83.2	-	81.8
Transport	7.4	6.9	-	7.2	6.7	6.5	-	6.6
Diagnostics	4.9	4.8	-	4.9	6.1	5.5	-	5.8
Total	100.0	100.0	-	100.0	100.0	100.0	-	100.0
Panel B: Urban HHDs (n=400)								
Doc. Fee	9.5	10.1	-	9.7	19.8	4.1	-	16.0
Drugs	77.7	77.3	-	77.5	67.4	87.5	-	72.2
Transport	5.7	6.8	-	6.0	3.7	5.0	-	4.0
Diagnostics	7.2	5.8	-	6.8	9.2	3.5	-	7.8
Total	100.0	100.0	-	100.0	100.0	100.0	-	100.0
Panel C: Slums HHDs (n=102)								
Doc. Fee	-	-	1.7	1.7	-	-	2.7	2.7
Drugs	-	-	84.1	84.1	-	-	86.7	86.7
Transport	-	-	6.6	6.6	-	-	3.0	3.0
Diagnostics	-	-	7.7	7.7	-	-	7.6	7.6
Total	-	-	100.0	100.0	-	-	100.0	100.0
Panel D: Non-Slum HHDs (n=258)								
Doc. Fee	-	-	5.4	5.4	-	-	0.5	0.5
Drugs	-	-	83.1	83.1	-	-	88.8	88.8
Transport	-	-	4.5	4.5	-	-	1.3	1.3
Diagnostics	-	-	7.0	7.0	-	-	9.4	9.4
Total Expenditure	-	-	100.0	100.0	-	-	100.0	100.0
Panel E: Total HHDs (n=2010)								
Doc. Fee	7.0	7.6	4.8	6.3	13.5	4.6	1.1	7.4
Drugs	80.6	80.6	83.3	81.6	73.7	84.3	88.2	80.9
Transport	7.0	6.8	4.8	6.2	5.1	6.1	1.7	4.3
Diagnostics	5.4	5.0	7.1	5.9	7.7	5.0	9.0	7.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6.2: Shares of Drug and Non-Drug Expenses in Hospitalized and Non-Hospitalized Care: Consumption Quintiles
Percent

Consumption Quintiles	OOP Expenditure: Non-Hospitalized Care					OOP Expenditure: Hospitalization Cases				
	Doc Fee	Drugs	Transport	Diagnostic	Total	Doc Fee	Drugs	Transport	Diagnostic	Total
Panel A: Rural UP & Rajasthan										
Poorest 20% Households	4.9	85.1	8.1	1.9	100.0	3.1	77.6	18.8	0.5	100.0
Next	5.6	83.0	8.8	2.6	100.0	4.9	79.8	9.2	6.2	100.0
Middle	8.2	82.2	7.3	2.3	100.0	4.7	85.5	7.2	2.5	100.0
Rich	9.2	77.6	7.9	5.3	100.0	9.9	78.1	5.2	6.8	100.0
Richest 20% Households	5.3	81.9	6.5	6.3	100.0	4.4	82.9	6.8	5.9	100.0
Total Sample	6.5	81.4	7.2	4.9	100.0	5.8	81.8	6.6	5.8	100.0
Panel B: Urban UP & Rajasthan										
Poorest 20% Households	10.4	80.6	4.9	4.2	100.0	1.3	85.5	5.0	8.2	100.0
Next 20%	11.8	74.6	8.2	5.4	100.0	8.1	85.0	4.9	2.0	100.0
Middle	11.0	80.2	3.6	5.2	100.0	9.3	80.9	2.9	6.9	100.0
Rich	7.8	79.6	6.1	6.5	100.0	1.1	86.8	4.0	8.1	100.0
Richest 20% Households	9.8	75.5	6.2	8.5	100.0	20.0	67.8	3.9	8.4	100.0
Total Sample	9.7	77.7	5.9	6.8	100.0	16.0	72.2	4.0	7.8	100.0
Panel C: Delhi Slum										
Poorest 20% Households	8.7	90.4	0.9	0.0	100.0	0.0	81.3	6.3	12.5	100.0
Next 20%	2.6	80.7	8.7	8.0	100.0	3.4	84.0	5.3	7.3	100.0
Middle	1.1	87.2	9.5	2.2	100.0	0.0	77.9	1.1	21.0	100.0
Rich	4.3	77.3	2.6	15.8	100.0	5.6	90.9	2.7	0.8	100.0
Richest 20% Households	0.2	85.0	6.9	7.8	100.0	0.0	92.4	5.6	2.1	100.0
Total Sample	1.7	84.1	6.6	7.7	100.0	2.7	86.7	3.0	7.6	100.0
Panel D: Delhi Non-Slum										
Poorest 20% Households	4.8	90.5	3.4	1.3	100.0	10.1	84.6	4.1	1.2	100.0
Next 20%	5.0	87.2	6.7	1.2	100.0	0.0	89.5	1.6	8.9	100.0
Middle	4.3	84.7	2.7	8.2	100.0	0.6	81.8	2.7	14.9	100.0
Rich	5.7	81.4	4.6	8.3	100.0	0.0	89.7	0.9	9.4	100.0
Richest 20% Households	5.9	82.0	5.0	7.2	100.0	0.1	91.9	0.4	7.5	100.0
Total Sample	5.4	83.1	4.5	7.0	100.0	0.5	88.8	1.3	9.4	100.0

Table 6.3 a: Shares of Drug and Non-Drug Expenses in Non-Hospitalized Medical Care: Catastrophic Households
Percent

Panel A	Non-hospitalization Cases: Catastrophic HHDs (z = 5%)					Non-hospitalization Cases: Catastrophic HHDs (z = 25%)				
	Rural	Urban	Slum	Non-slum	Total HHDs	Rural	Urban	Slum	Non-slum	Total HHDs
U.P.										
Doc Fee	6.3	8.8	-	-	6.9	6.9	7.0	-	-	6.9
Drugs	81.3	78.2	-	-	80.7	81.4	80.6	-	-	81.2
Transport	7.3	5.6	-	-	7.0	6.1	5.9	-	-	6.1
Diagnostic	5.0	7.3	-	-	5.5	5.6	6.5	-	-	5.8
Total	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0
Panel B										
Rajasthan										
Doc Fee	6.7	9.4	-	-	7.2	4.9	6.6	-	-	5.2
Drugs	81.3	77.5	-	-	80.6	82.3	73.4	-	-	80.8
Transport	6.9	6.7	-	-	6.9	6.1	10.2	-	-	6.8
Diagnostic	5.0	6.5	-	-	5.3	6.7	9.8	-	-	7.2
Total	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0
Panel C										
Delhi										
Doc Fee	-	-	1.4	4.9	4.2	-	-	0.0	2.5	1.8
Drugs	-	-	84.4	83.5	83.7	-	-	81.1	83.1	82.5
Transport	-	-	6.4	3.7	4.2	-	-	7.8	3.1	4.4
Diagnostic	-	-	7.8	8.0	7.9	-	-	11.1	11.3	11.3
Total	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0
Panel D										
Total Households										
Doc Fee	6.5	9.0	1.4	4.9	6.1	6.2	6.9	0.0	2.5	5.1
Drugs	81.3	78.0	84.4	83.5	81.7	81.7	78.2	81.1	83.1	81.5
Transport	7.2	5.9	6.4	3.7	6.0	6.1	7.3	7.8	3.1	5.8
Diagnostic	5.0	7.1	7.8	8.0	6.3	6.0	7.5	11.1	11.3	7.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6.3b: Shares of Drug and Non-Drug Expenses in Hospitalization Cases: Catastrophic Households

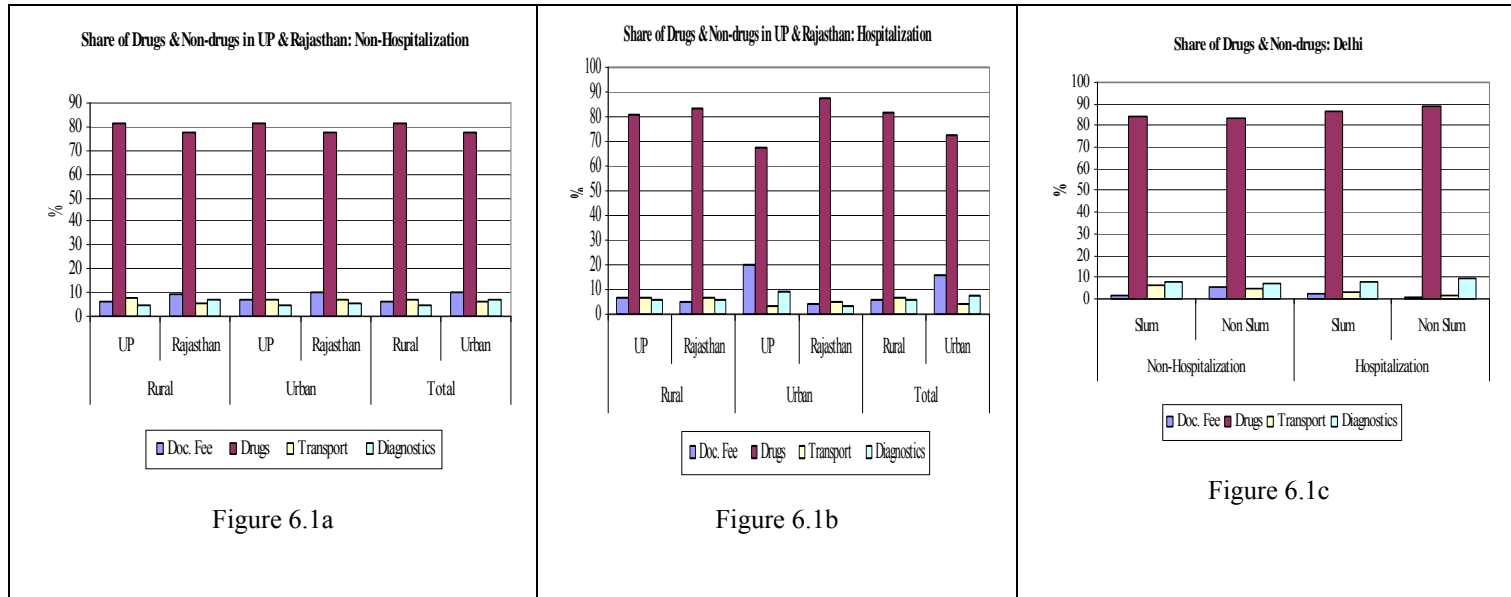
Panel A	Hospitalization Cases: Catastrophic HHDs (z = 5%)					Hospitalization Cases: Catastrophic HHDs (z = 25%)				
	Rural	Urban	Slum	Non-slum	Total HHDs	Rural	Urban	Slum	Non-slum	Total HHDs
U.P.										
Doc Fee	6.9	19.9	-	-	13.7	6.9	22.8	-	-	15.5
Drugs	80.3	67.5	-	-	73.6	81.9	64.3	-	-	72.3
Transport	6.7	3.4	-	-	5.0	5.4	3.1	-	-	4.2
Diagnostic	6.2	9.2	-	-	7.8	5.8	9.8	-	-	8.0
Total	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0
Panel B										
Rajasthan										
Doc Fee	4.5	4.1	-	-	4.4	4.6	2.7	-	-	4.2
Drugs	83.6	87.4	-	-	84.6	83.0	87.4	-	-	83.9
Transport	6.4	4.9	-	-	6.0	6.8	5.9	-	-	6.6
Diagnostic	5.6	3.6	-	-	5.1	5.7	4.1	-	-	5.3
Total	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0
Panel C										
Delhi										
Doc Fee	-	-	2.8	0.4	1.0	-	-	0.0	0.0	0.0
Drugs	-	-	86.7	89.6	88.8	-	-	89.6	87.9	88.4
Transport	-	-	2.8	1.1	1.5	-	-	2.3	0.7	1.3
Diagnostic	-	-	7.7	9.0	8.6	-	-	8.1	11.4	10.3
Total	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0
Panel D										
Total Households										
Doc Fee	5.7	16.2	2.8	0.4	7.4	5.8	19.6	0.0	0.0	8.5
Drugs	81.9	72.2	86.7	89.6	81.1	82.4	67.9	89.6	87.9	79.5
Transport	6.5	3.7	2.8	1.1	4.2	6.1	3.5	2.3	0.7	4.0
Diagnostic	5.9	7.9	7.7	9.0	7.3	5.7	8.9	8.1	11.4	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Moving to the OOP distribution for slum and non-slum households in Delhi, it's clear both from Table 6.1 (Panels C and D) and Figure 6.1c that the former are almost at a competing level with the latter in terms of their percentage expenditure on drugs and two major medical services, namely consultation and diagnostics. However the share of expenditure on consultation fee is relatively higher for slum households – i.e., 2.7 percent as against 0.5 percent for the non-slum households (Table 6.1, Panels C and D). Also, they are shown to incur a larger share of expenditure on transportation than the non-slum households.

From these results, which tend to portray certain degrees of equity between the slum and non-slum households in distribution of their health budgets, follow two significant questions: (i) does this equity represent certain peculiarities of Delhi alone or is it a wider phenomenon and the poor in general encounter a similar situation in other places as well, and (ii) is there a safeguard to protect them?

Regarding the second question, safeguard perhaps lies in pooling the risk and offering certain form of health insurance mechanism — if not to all, at least to the poor. Another important safeguard derives from lowering inflation in the drug sector and pro-poor negotiations in the WTO. Particularly, most generic medicines and formulations need protection from strict patenting and royalty laws. This is particularly essential because of a very large share of medicines in overall household budgets on health. Reverting to the first question, we extend this analysis, as was already noted in the beginning, by briefly describing the OOP budget distributions at two levels: (i) by five consumption quintile groups (poorest 20 percent, next 20 percent, middle, rich and the richest), and (ii) by two catastrophic groups ($z = 5\%$ and 25%).

Figure 6.1: Share of Drugs, Medical Services and Transportation: Hospitalization and Non-Hospitalized Care Rural-Urban and Slum-Non-slum Households: (%)

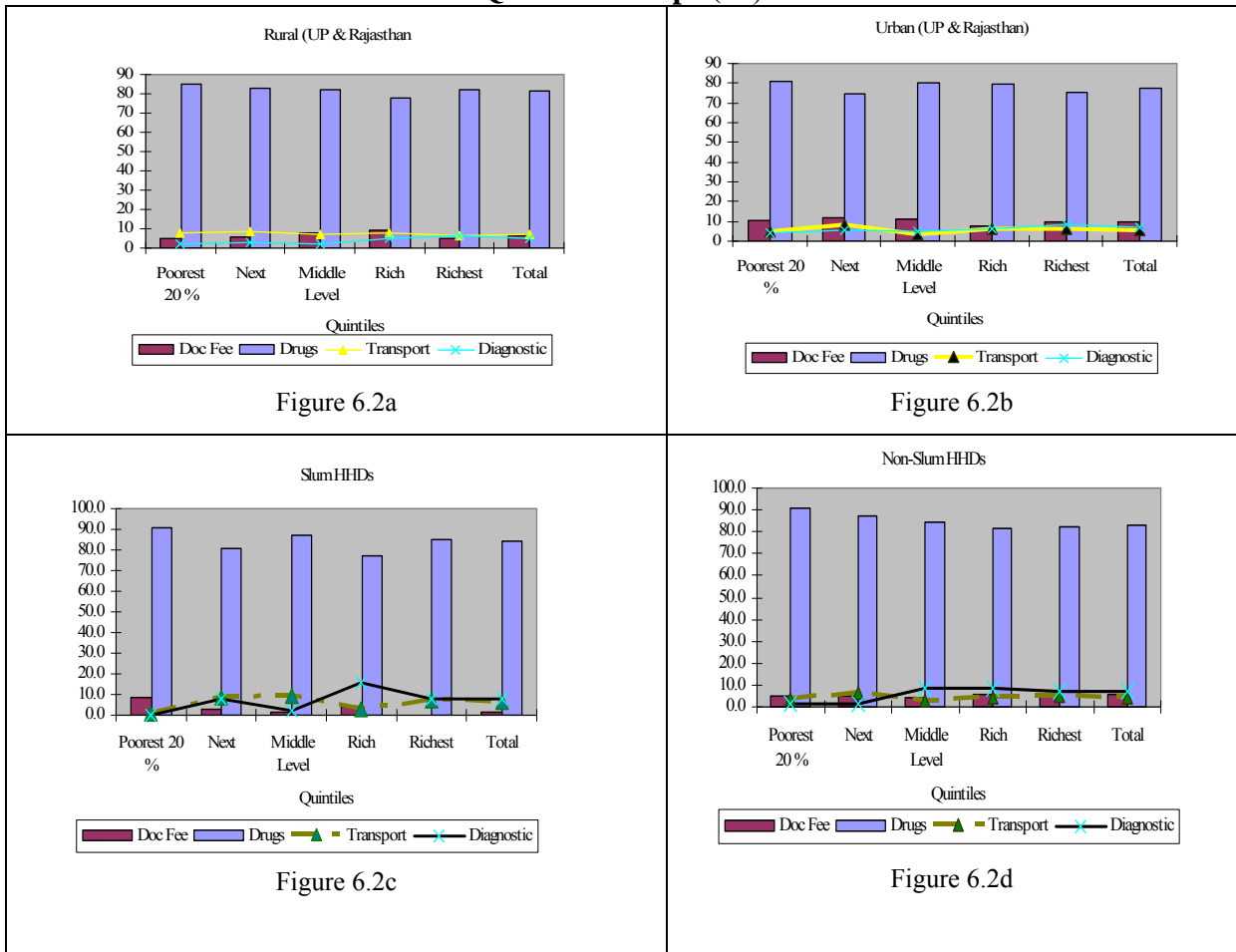


Source: Table 6.1

6.2 Share of Drugs and Non-Drugs in OOP Budget: Households by Consumption Quintiles

Using unit level consumption data, Table 6.2 distributes the health care expenditure of sample households arranged in ascending order into 5 quintile groups — from the poorest 20 percent to the richest 20 percent. Expenditure items in all the calculations remain identical.

Figure 6.2: Drugs, Health Services and Transportation in OOP Health Budget: Quintile Groups (%)



Source: Table 6.2

Replicating largely the pattern represented by Delhi, we notice from this table that the poorest 20 percent seeking out-patient treatment have spent a greater share of their health budget on medicines than any other quintile group (see Figures 6.2a to 6.2d). Further, the same remains true for all the places covered in the study. Drug share of these households varies between 80 to 90 percent of the total and remained particularly higher

among the slum and rural households (Table 6.2, Panels A and C). All other quintile groups spent a lesser share, although their differences in many cases remained marginal. Poorest groups have also spent in certain areas (slums and towns in UP and Rajasthan) a larger share of their health budget on medical consultation. The situation is however slightly reversed when it comes to the hospitalized treatment. Nevertheless, the differentials are invariably small and the richest appear to have drawn certain advantages over the lower quintile groups.

A significant observation arising on the basis of Table 6.2 and its first three panels is that the poorer quintiles (poorest, next 20 percent and middle) is not only spending heavily on drugs and medicines, they also spend their considerable budget shares on consultation and diagnostics. It may be noticed even in cases of hospitalization (see the latter half of Table 6.2). A possible explanation may be drawn from two possibilities. First, people do not necessarily rely on public hospitals even if they require hospitalization. Second, many diagnostic services in public facilities are on payment basis. Also there are chances of doctors in public hospitals going for moon lighting, especially in UP and Rajasthan.

6.3 Share of Drugs and Non-Drugs in OOP Budget: Households with Catastrophic Spending

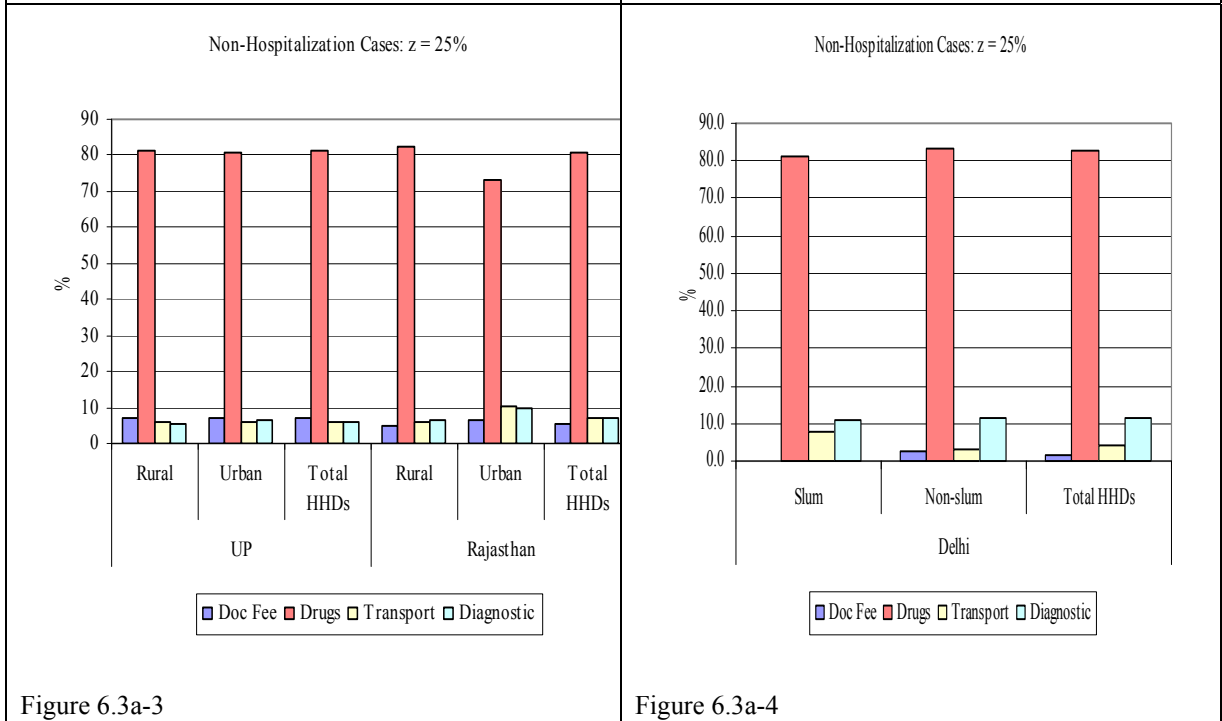
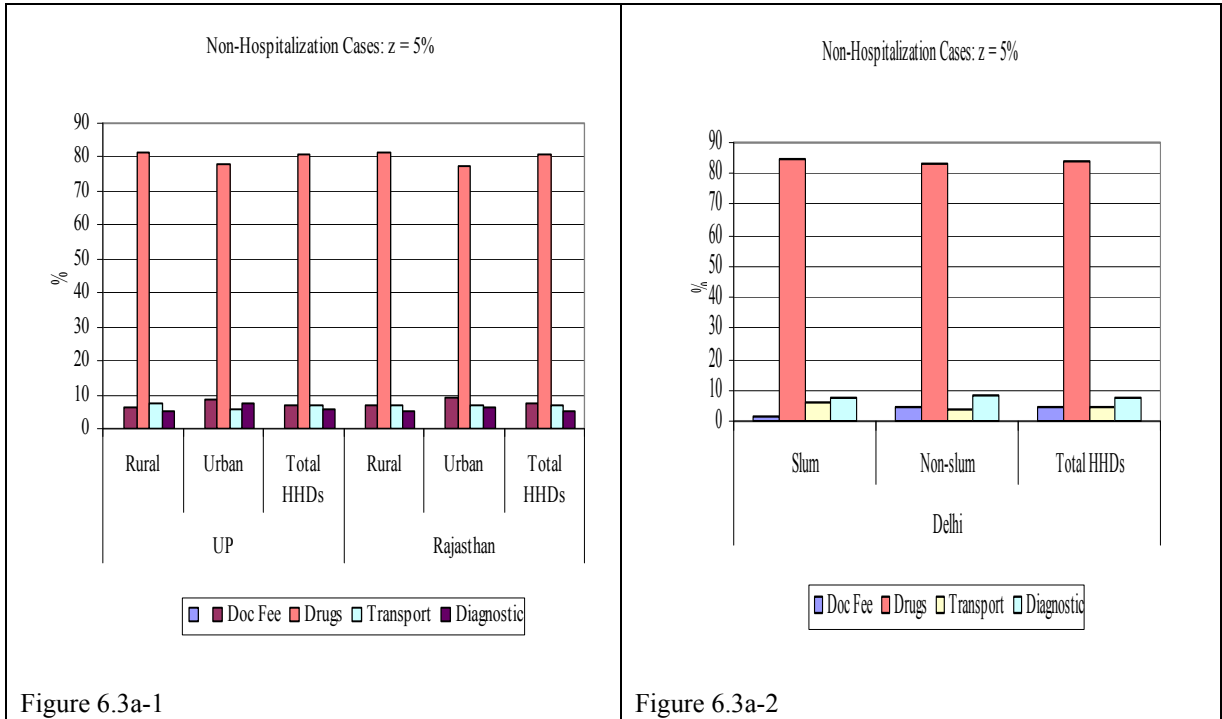
Two exercises are reported in Tables 6.3a and 6.3b. Both are drawn on the basis of total consumption budget of the households facing catastrophe due to spending on medical care, with or without hospitalization. Two levels of catastrophe have been used: one, with a lower threshold of $z = 5$ percent or more, and the other with a z value fixed at 25 percent and beyond. The heads of medical expenditure remained as before.

Conforming closely to the patterns visible in the two preceding analyses, these results also highlight drugs as the single expenditure item with highest budget share (almost 80 percent of the total and above) followed by diagnostics and medical consultation. It may also be interesting to note that in a few cases the share of expenditure incurred by rural households on transportation is relatively higher than the shares on medical services (see Figures 6.3a-1, 6.3a-3 and 6.3b-1, 6.3b-3). In other words, it's an indication of poor access to medical facilities closer to some villages.

Another interesting result to notice from these tables is the expenses borne out by the slum households in Delhi. There is clear evidence that the poor and slum dwellers spend in many cases a much larger share of expenditure on drugs and other medical items than the non-poor. And yet in no way these results imply that non-poor do not spend on health. They largely follow a similar pattern with a maximum of their health budget going to drugs and diagnostics. How far do they suffer in terms of their welfare losses due to these payments or to what extent their welfare losses differ with similar losses suffered by the poor may not be conjectured with the help of the results reported here.

With all those observed differentials across the households, a point of major policy concern stemming from the underlying discussion is as regards how to reduce the size of the OOP health care budget and shield poor households against the high costs of drugs and medical services. Besides the risk pooling and universal health insurance coverage, two other solutions may follow from the following. Firstly, a strict drug control policy coupled with a judicious demand-supply management of pharma products. And, secondly, an improvement in delivery mechanism of health services in public hospitals and facilities. It requires a well designed strategy to deploy medical personnel at different medical units, places, hospitals and dispensaries. Currently, physicians and medical personnel are deployed for several of non-clinical activities as well. They are in many cases governed by the district administration and pushed regularly to serve politicians or day to day political events. All this makes their availability to required clinical activities or designated hospitals scarce, thereby forcing ailing people to rely on private practitioners.

**Figure 6.3a: Drugs, Health Services and Transportation in OOP Health Budget:
Catastrophic Households (z = 5% of Total Consumption)**



Source: Table 6.3a

**Figure 6.3b: Drugs, Health Services and Transportation in OOP Health Budget:
Catastrophic Households
(Hospitalized Episodes: z = 5% & 25% of Total Consumption)**

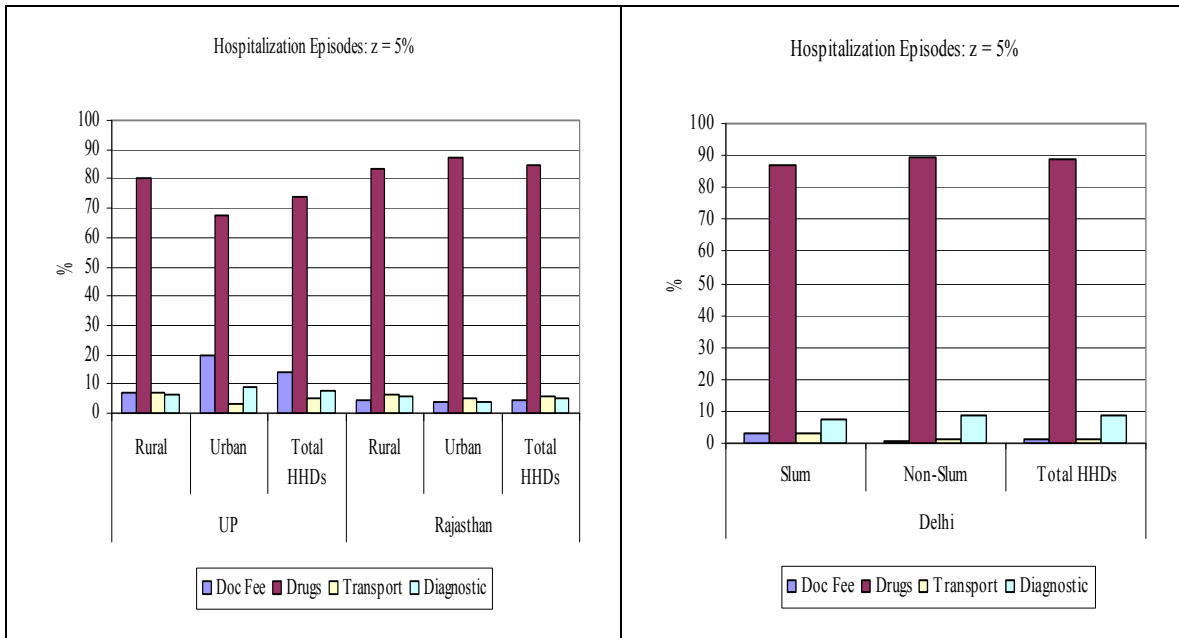


Figure 6.3b-1

Figure 6.3b-2

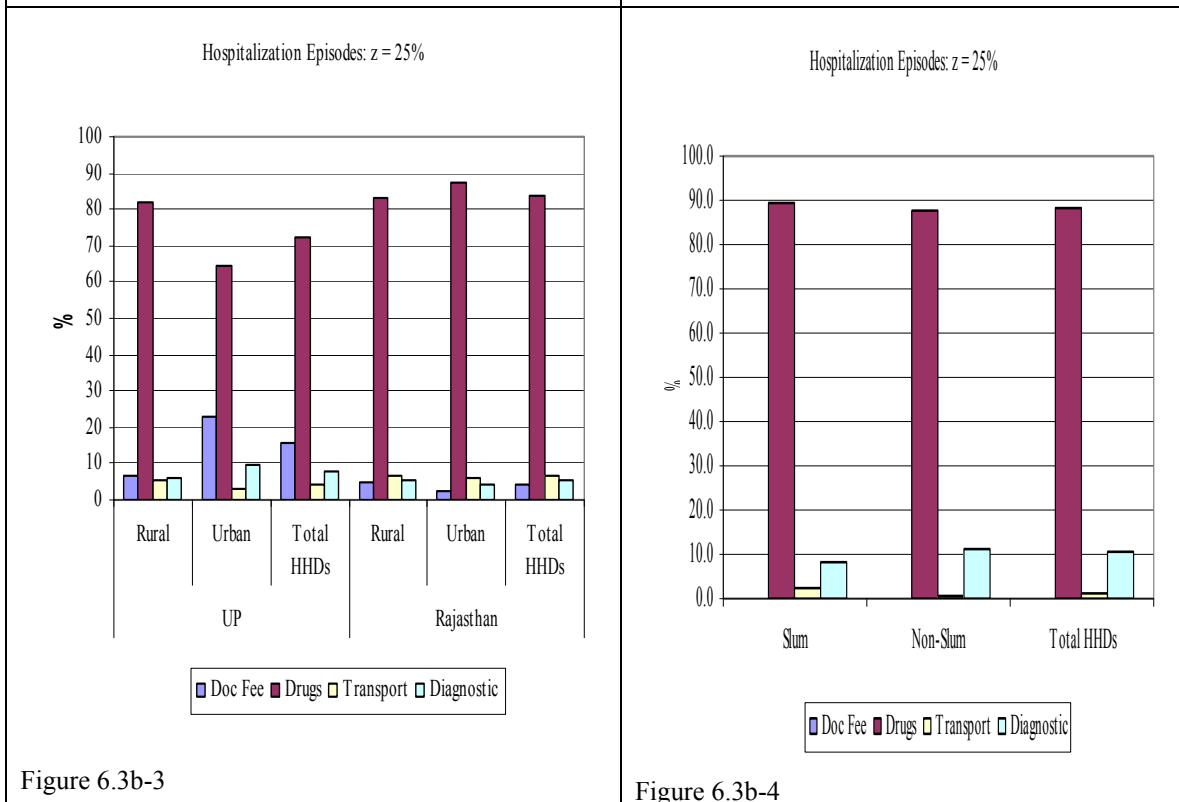


Figure 6.3b-3

Figure 6.3b-4

Source: Table 6.3b

Another interesting result to notice from these tables is the expenses borne out by the slum households in Delhi. There is clear evidence that the poor and slum dwellers spend in many cases a much larger share of expenditure on drugs and other medical items than the non-poor. And yet in no way these results imply that non-poor do not spend on health. They largely follow a similar pattern with a maximum of their health budget going to drugs and diagnostics. How far do they suffer in terms of their welfare losses due to these payments or to what extent their welfare losses differ with similar losses suffered by the poor may not be conjectured with the help of the results reported here.

With all those observed differentials across the households, a point of major policy concern stemming from the underlying discussion is as regards how to reduce the size of the OOP health care budget and shield poor household's high costs of drugs and medical services. Besides the risk pooling and universal health insurance coverage, two other solutions may follow from the following. Firstly, a strict drug control policy coupled with a judicious demand-supply management of pharma products. And, second, an improved health delivery mechanism in public hospitals and facilities. It requires a well designed strategy to deploy medical personnel at different medical units, places, hospitals and dispensaries. Currently, physicians and medical personnel are deployed for several of non-clinical activities as well. They are in many cases governed by the district administration and pushed regularly to serve politicians or day to day political events. All this makes their availability to required clinical activities or designated hospitals scarce, thereby forcing ailing people to rely on private practitioners.

Appendix Table 6.1

Increase in Poverty due to the OOP Health Payments

	Poverty 1*		Poverty 2**		Increase in Below Poverty HHDs due to OOP	
	Rural	Urban	Rural	Urban	Rural	Urban
Total Sample	33.0	18.8	46.5	24.9	13.5	6.1
UP	36.0	25.6	49.6	29.6	13.6	4.0
Unnao	34.7	20	48.89	22	14.2	2.0
Jhansi	38.0	34.0	50.7	41.0	12.7	7.0
Rajasthan	28.4	28.6	41.8	38.0	13.4	9.4
Dausa	21.6	38.0	34.0	56.0	12.4	18.0
Dungarpur	35.2	24	49.6	29.0	14.4	5.0
Delhi	-	10.0	-	16.1	-	6.1
Slum	-	26.5	-	41.2	-	14.7
Non – slum	-	3.4	-	6.2	-	2.8

* Poverty 1: Monthly per capita household consumption expenditure (MPCE) including OOP health care below defined poverty line (z), i.e. $MPCE < z$.

** Poverty 2: Monthly per capita household consumption expenditure (MPCE) excluding OOP health care below defined poverty line (z), i.e. $(MPCE - OOP) < (z)$.

References

Dormont B and H. Huber, 'The Predominance of Changes in Medical Practices over Population Ageing', *Annales d' Économie et de Statis*, No. 83/84, Health, Insurance, Equity, July – December 2006, pp. 187-217. URL: <http://www.Jstor.org/stable/20079168>, accessed: April 18, 2009.

Dormont B., M. Grignon and H. Huber, 'Health Expenditure Growth: Reassessing the Threat of Ageing', *Health Economics*, Vol. 15, 2006 pp. 947-967.

Getzen T.E., 'Population Ageing and the Growth of Health Care Expenditures', *Journal of Gerontology*, Vol. 47, 1992 pp. S98 - S104.

National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare (Government of India), 2005: *Report of the National Commission on Macroeconomics and Health*, Section II, August 2005.

Rane, W., 'Rise in Drug Prices since 1987 – An Analysis', *Economic and Political Weekly*, June 30, 1999, pp. 1375 – 79.

Sakthivel, S., Access to Essential Drugs and Medicine, Background Paper prepared for the National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare (Government of India), *Financing and Delivery of Health care Services in India*, August 2005, pp. 185 – 212.

Srinivasan, S., 'How many aspirins to the rupee: Runaway drug prices', *Economic and Political Weekly*, 1999 p. 34.

Watal, J., 'Pharmaceutical Patents, Prices and Welfare Losses: Policy Options for India under the WTO Rules Agreement', World Competition, *Review of Law and Economics*, Vol. 24, 2000 pp. 733 – 52.

Chapter 7

Utilization of Public Health Facilities: A Situational Assessment

The preceding three chapters have lent considerable evidence to suggest that people in backward regions of UP and Rajasthan are severely pressured by out-of-pocket expenditure on health care. Almost a similar result was presented for the slum residents in Delhi as well. These results have also lent credence to the fact that a bulk of these households is marred by varying levels of catastrophe with possibilities of major curtailments in their living conditions. A probit regression analysis in chapter 5 further indicates that the poor, economically less secured, lower caste, moderately educated, poor sanitation, lack of access to potable drinking water, low levels of living without proper lighting or cooking fuel and kutchha houses are among the factors making people susceptible to enhanced risks of health catastrophe. However, a question that needs to be examined in the context of these findings is: what happens to the public health facilities and, despite high financial burden, why do people go to private practitioners? A related question may arise in regard to the utilization of added services created in rural areas since the inception of the National Rural Health Mission (NRHM) in April 2005. Do people even know about these facilities and their intended objectives to provide an added package of services including sanitation, potable drinking water, better child care with timely vaccination and assistance to pregnant rural women with basic medicines and institutional deliveries? We will try to examine a few, if not all, of these issues in rest of this chapter.

As was noted, two issues form the basic concern of this chapter. First is to examine the utilization of public health care facilities by households cross-classified according to (i) rural-urban and slum-non-slum, (ii) consumption quintiles, and (iii) catastrophe status. The second issue to be examined is as regards the reasons for non-utilization or poor utilization of the public facilities including primary (PHC) or community health centers (CHC).³² The

³² Primary health care facilities created over the years by the government in rural areas have evolved on the basis of certain population norms. These include sub-centers for every 3,000 to 5,000 population, primary health centers (PHCs) for a total of 20,000 – 30,000 population, and community health centers (CHC) for 80,000 – to 120,000 population. Lower population norms have been used for the tribal and hilly areas (Ministry of Health & Family Welfare, Government of India, 2006). Most of these services have however been driven to a considerable extent by the family planning objectives of the government.

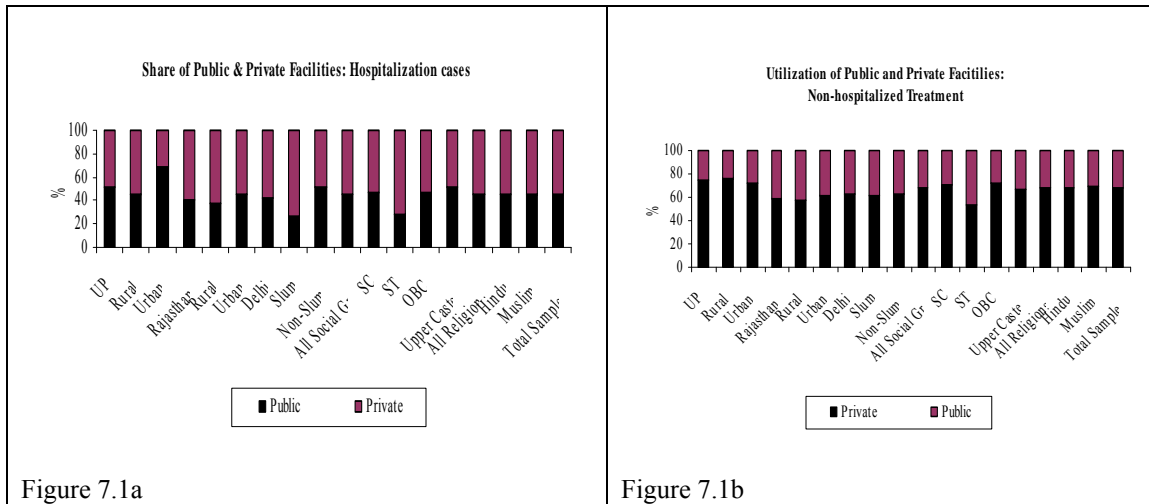
focus of discussion in this part of analysis concerns the non-availability of doctors, particularly in rural areas, which may *inter alia* be an indication of (a) deficient manpower planning in government run medical facilities, and (b) poor management and/or deployment of available human resources by authorities and health care planners. In between we will also discuss about the NRHM, and if people access the services provided under this scheme to a considerable extent.

7.1 Utilization of Public Sector Health Facilities: Hospitalization and Out-patient Care Distribution by Rural-Urban and Socio-Religious Groups

Like the share of expenditure on drugs and medicines as observed in the preceding chapter, another significant issue in the context of health driven poverty relates to a very high dependence of households on private facilities despite creation of a vast publicly financed health care infrastructure in most rural and urban areas. Alarming, this dependence holds for most rural and low income areas covered in the study. Moreover, a considerable share of poor population from the lowest quintile also appears to have relied on private providers. Catastrophic households follow a similar pattern. Furthermore, even in hospitalized treatment, where it has an edge, the public sector is losing its earlier sheen. Tables 7.1 to 7.3 provide these details both for the hospitalized and outpatient treatments cross-classified by the sample areas and socio-religious groups. Major highlights of these tables are also represented graphically in Figures drawn on the basis of the three tables mentioned above.

Tables 7.1a and 7.1b give the distribution of hospitalized (inpatient) and non-hospitalized (outpatient) cases treated in public or private facilities in rural and urban areas of the states under consideration. Two recall periods have been used - 365 days for the former and 30 days for the latter (see also Figures 7.1a and 7.1b). As has been noted, one of the most visible highlight of both the tables relates to the dominance of private facilities in the delivery of health services at all the places

**Figure 7.1: Inpatient and Outpatient Treatment:
Utilization of Public & Private Medical Facilities**



Source: Table 7.1

covered in the study. This pattern has been highlighted very sharply by Figure 7.1b (and also Table 7.1b) with the help of a bivariate distribution of public-privates shares in non-ambulatory (or outpatient) care across most of the survey areas and socio-religious groups. The share of private providers is particularly higher in U.P. where almost three quarters of both rural and urban health care seekers have relied on private practitioners for their routine outpatient care. Interestingly, this share has turned out to be relatively smaller in remaining states with the lowest in Rajasthan followed by Delhi (see the painted column in Table 7.1b). Nevertheless, at no place the share of private practitioners in out-patient care drops below 50 percent. What does this lack of interest mean for the 11th Five year Plan (2007-2012) and its health objectives? The current Plan sets out to provide 'special attention to the health of marginalized groups like adolescent girls, women of all ages, children below the age of three, older persons, disabled and primitive tribal groups (Planning Commission, 2008)'. However, a limited utilization of health facilities, especially by the poor and low income households, may bring an element of contradiction between the ground realities and Plan objectives. It would therefore be imperative for all the stake holders, in particular the health administrators, to raise the level of health care utilization in the public sector.

**Table 7.1a: Hospitalization Incidence and Utilization of Public and Private Facilities:
Sample Population (Reference Period: Past 12 Months)**

States/Socio-religious categories	Size of Sample Population (N)	Hospitalization Share (%)	Utilization of Facilities		Hospitalization Cases (Number)
			Private (%)	Public*	
UP	5,603	2.6	52.1	48.0	146
Rural	4,236	2.5	45.7	54.3	105
Urban	1,367	3.0	68.3	31.7	41
Rajasthan	3,523	3.4	40.2	59.8	117
Rural	2,705	3.1	37.8	62.2	82
Urban	818	4.2	45.7	54.3	35
Delhi	1,937	3.5	41.8	58.2	67
Slum	569	4.6	26.9	73.1	26
Non-Slum	1,368	3.0	51.2	48.8	41
All Social Gr.	11,063	3.0	45.8	54.2	330
SC	2,531	3.1	46.2	53.9	78
ST	1,361	2.7	27.8	72.2	36
OBC	4,367	3.0	46.6	53.4	131
Upper Caste	2,804	3.0	51.8	48.2	85
All Religions	11,063	3.0	45.8	54.2	330
Hindu	9,795	3.0	45.6	54.4	294
Muslim	1,112	2.8	45.2	54.8	31
Total Sample	11,063	3.0	45.8	54.2	330

* Includes city hospitals, CHCs and PHCs

**Table 7.1b: Out-Patient Treatment and Utilization of Public and Private Doctors/Facilities
Sample Population (Reference Period: Past 30 Days)**

States/Socio-religious categories	Number of Persons	Non-Hospitalized Cases (%)	Type of Medical Doctor Consulted:		Total Outpatient Cases (Number)
			Private (%)	Public (%)	
UP	5,603	16.3	75.1	24.9	913
Rural	4,236	17.1	75.9	24.1	726
Urban	1,367	13.7	72.2	27.8	187
Rajasthan	3,523	13.7	58.4	41.6	481
Rural	2,705	13.9	57.6	42.4	377
Urban	818	12.7	61.5	38.5	104
Delhi	1,937	17.6	62.5	37.5	341
Slum	569	16.9	61.5	38.5	96
Non-Slum	1,368	17.9	62.9	37.1	245
All Social Gr.	11,063	15.7	68.0	32.0	1735
SC	2,531	16.3	70.6	29.4	412
ST	1,361	15.2	53.6	46.4	207
OBC	4,367	14.5	71.9	28.1	634
Upper Caste	2,804	17.2	66.8	33.2	482
All Religions	11,063	15.7	68.0	32.0	1735
Hindu	9,795	15.8	67.8	32.2	1544
Muslim	1,112	14.8	69.7	30.3	165
Total Sample	11,063	15.7	68.0	32.0	1735

Contrary to the out patient services, public facilities appear to have a greater role in providing hospital care at most of the places under reference. Table 7.1a summarizes these details. This table shows that the utilization of government hospitals is invariably higher among the tribal, low caste and low income people, especially from the slums and rural areas (see the colored numbers in Table 7.1a, also see Figure 7.1a). Unfortunately, however, it doesn't prove to be conclusively so as quite a bigger fraction of inpatient care accessed by the people from non-slum and urban areas of Delhi and UP have been delivered by the private hospitals and nursing homes. This is as well true for those belonging to the upper caste groups in the sample (see the colored numbers in the table).

These variations apart, it needs to be admitted that the public hospitals not only serve a big fraction of people from different strata and residential areas, they also serve to regulate the over all functioning of the private providers in more ways than one.

Distribution by Quintile Groups: Hospitalization and Non-Hospitalization Care

Table 7.2 distributes the users of public and private health care services from different residential areas according to their consumption quintiles. Like before, this table has also been divided into two parts —7.2a and 7.2b — with the latter relating to the non-hospitalization or outpatient cases with a reference period of 30 days, while the former provides a similar distribution for the hospitalization episodes using a recall period of 12 months. Figures 7.2a and 7.2b give a graphical presentation of the two tables, respectively.

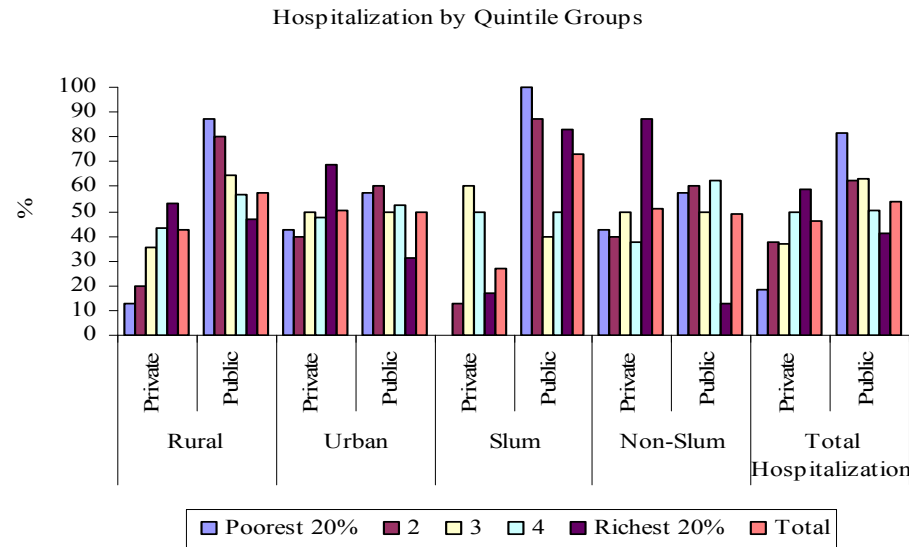
While both the tables, Tables 7.1a and 7.2b, broadly represent a similar pattern as was discussed before, the following two observations are expected to be of significance both for the present discussion as well as for the objectives of the 11th Five Year Plan cited earlier. First, a big majority of the outpatient care seekers, even from the two poorest consumption quintiles (bottom 20 percent and the next 20 percent), largely rely on private providers. It may, in other words, imply that no amount of economic hardship makes even the poorest feel compelled to use private facilities. The other observation though reconfirms to a large extent the primacy of public facilities when it comes to hospitalization, underlies the fact that even the poorest may not be able to rely solely on public hospitals. Table 7.2a,

Table 7.2a: Utilization of Public and Private Hospitals: Quintile Groups
Total Hospitalization Cases = 330

	Rural		Urban*		Slum		Non-slum		Total Hospitalization	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
Poorest 20%	12.5	87.5	42.9	57.1	0.0	100.0	42.9	57.1	18.5	81.5
2	20.0	80.0	40.0	60.0	12.5	87.5	40.0	60.0	37.8	62.2
3	35.3	64.7	50.0	50.0	60.0	40.0	50.0	50.0	36.6	63.4
4	43.2	56.8	47.2	52.8	50.0	50.0	37.5	62.5	49.5	50.5
Richest 20%	53.1	46.9	68.8	31.3	16.7	83.3	87.5	12.5	58.8	41.2
	42.3	57.8	50.4	49.7	26.9	73.1	51.2	48.8	45.8	54.2
Chi2(4)	Pr. = 0.021		Pr. 0.182		Pr. = 0.189		Pr. = 0.238		Pr. = 0.001	

* Including households from slum and non-slum areas of Delhi.

Figure 7.2a: Types of HealthCare Utilized by sample Inpatients



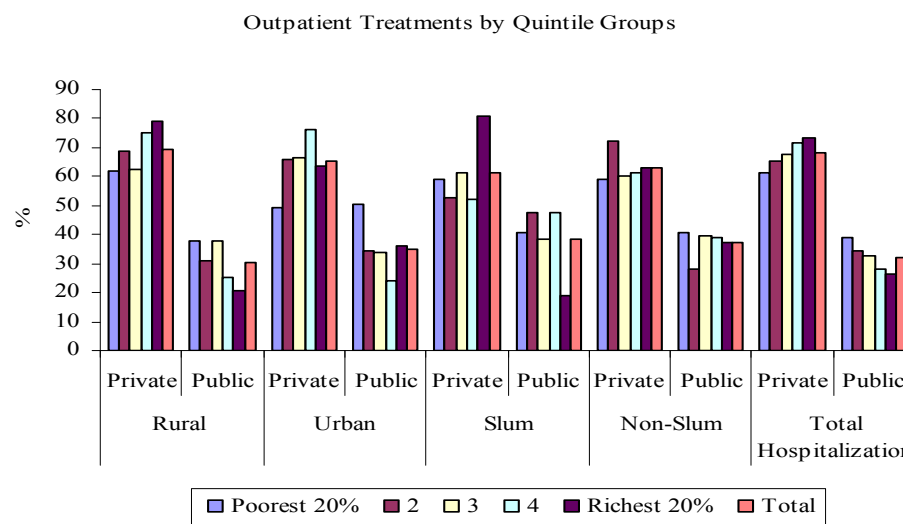
Source: Table 7.2a

Table 7.2b: Utilization of Public and Private Facilities: Non-hospitalization Cases by Quintile Groups
Total Cases = 1735

	Rural		Urban*		Slum@		Non-slum@		Total Cases	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
Poorest 20%	62.1	37.9	49.5	50.5	59.1	40.9	59.1	40.9	61.1	38.9
2	69.0	31.0	65.9	34.2	52.6	47.4	72.1	27.9	65.5	34.5
3	62.3	37.7	66.4	33.6	61.5	38.5	60.4	39.6	67.6	32.4
4	75.0	25.0	76.1	23.9	52.4	47.6	61.1	38.9	71.8	28.3
Richest 20%	79.3	20.8	63.8	36.2	81.0	19.1	62.8	37.3	73.6	26.4
Total	69.6	30.4	65.2	34.8	61.5	38.5	62.9	37.1	68.0	32.0
Chi2(4)	Pr. = 0.000		Pr. = 0.001		Pr. = 0.311		Pr. = 0.727		Pr. = 0.003	

* Including households from slum and non-slum areas of Delhi. @ Very few observations

Figure 7.2b: Utilization of Public Private Facilities: Out-patient Treatment



Source: Table 7.2b

for example, indicates that a good fraction of persons from the two lowest consumption quintiles received care from private providers (see colored numbers in Table 7.2b). Admittedly, while such fractions may not be used conclusively to vindicate certain line of arguments, they however make out a case to go into such instances further and deeper. These are also the issues to be taken into consideration by the *Rogi Kalyan Samities* or such other patient welfare bodies currently working at the district and sub district levels.

Distribution by Catastrophic Households: Hospitalization and Non-Hospitalization Care

As in the previous two sections, herein also we cite a distribution of public and private medical facilities utilized by two sets of households and their ailing family members, differentiated on grounds of mild and severe catastrophe. The former was characterized on the basis of health expenditure at 5 percent of normal consumption budget ($z = 5$ percent), while the latter with an acute form of catastrophe was represented with health budget exceeding almost a quarter of total consumption expenditure ($z = 25$ percent). Tables 7.3a and 7.3b provide these details. For better illustration, these tables were also converted into Figures 7.3a and 7.3b.

It may be interesting to note in both the tables, which profile recipients of medical care with or without hospitalizations, that catastrophe is not entirely the outcome of private hospitals or private medical practitioners. It occurs to patients of public facilities as well (Tables 7.3a and 7.3b; Figures 7.3a and 7.3b). Although, in non-hospitalization cases it mainly results because of private providers – i.e., from little less than two-thirds to over 73 percent of the total cases (Table 7.3b). In addition, the case is the same for both rural and urban areas. Contrasting this, Table 7.3a indicates that hospitalization driven catastrophe is also generally higher among the patients treated in public hospitals. This is particularly true for the low-income households. While somewhat disappointing, public medical facilities are shown to have pushed a good majority of rural and slum households to face catastrophe (see colored numbers in Table 7.3a). Besides, these results also indicate that a fraction of public hospital

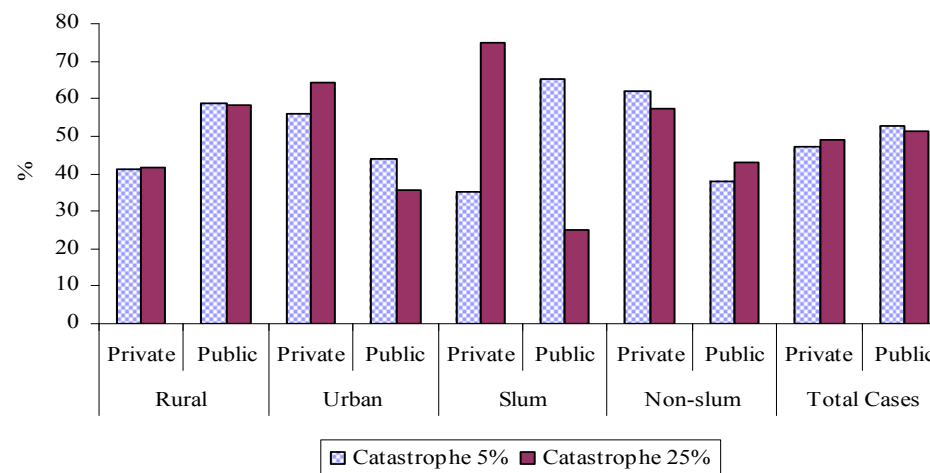
**Table 7.3a: Utilization of Public-Private Hospitals by Catastrophic Households: z = 5% and 25%
Total Hospitalization Cases = 330**

Catastrophe Levels	Place of Residence									
	Rural		Urban*		Slum		Non-slum		Total Hospitalization	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
Catastrophe 1: 5%	41.1	58.9	56.0	44.0	35.0	65.0	62.1	37.9	47.2	52.8
Chi2(1)	Pr. = 0.334		Pr. 0.005		Pr. = 0.090		Pr. = 0.031		Pr. = 0.197	
Catastrophe 2: 25%	41.8	58.2	64.3	35.7	75.0	25.0	57.1	42.9	48.9	51.1
Chi2(1)	Pr. = 0.895		Pr. 0.032		Pr. = 0.000		Pr. = 0.731		Pr. = 0.351	

* Including households from slum and non-slum areas of Delhi.

Figure 7.3a: Inpatients Treated in Public and Private Facilities: Catastrophic Households

Hospitalizations from Catastrophic HHDs: z = 5% & 25%

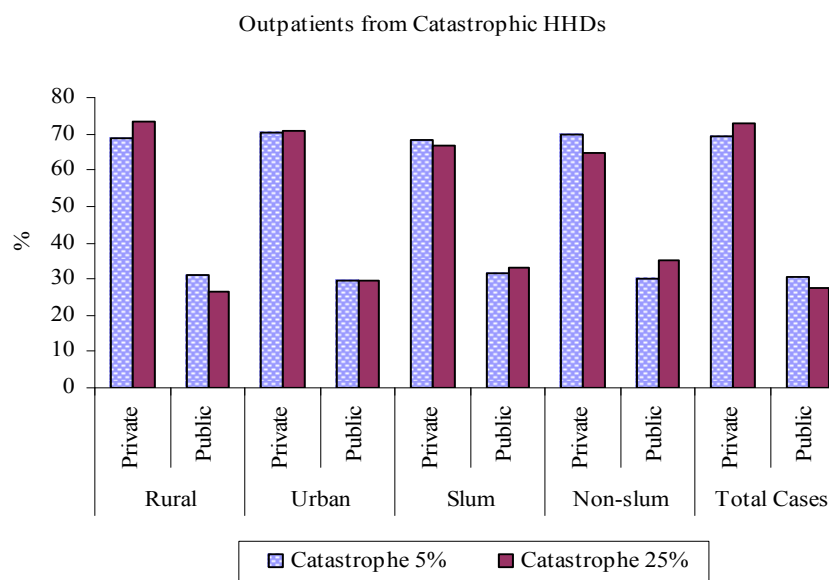


Source: Table 7.3a

**Table 7.3b: Utilization of Outpatient Public & Private Facilities by Catastrophic Households: z = 5% and 25%
Total Cases = 1735**

Catastrophe Levels	Place of Residence									
	Rural		Urban		Slum		Non-slum		Total Cases	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
Catastrophe1: 5%	68.9	31.2	70.2	29.8	68.2	31.8	69.9	30.1	69.3	30.7
Chi2(1)	Pr. = 0.216		Pr. = 0.000		Pr. = 0.045		Pr. = 0.006		Pr. = 0.045	
Catastrophe2: 25%	73.4	26.6	70.6	29.4	66.7	33.3	64.7	35.3	72.7	27.3
Chi2(1)	Pr. = 0.136		Pr. = 0.261		Pr. = 0.579		Pr. = 0.870		Pr. = 0.038	

Figure 7.3b: Outpatients Treated in Public and Private Facilities: Catastrophic Households



Source: Table 7.3b

patients have also ended up with most the oppressive form of catastrophe (z = 25 percent), presumably because many of the services in public hospitals are now available on payment basis. These are over and above the cost of drugs and medicines; some of them may not be essential.

While some of these results are constrained by a limited number of observations, they appear to be still useful for drawing a few inferences at the policy level. Two issues are apparently more significant as regards policy considerations and may need to be discussed at length. Firstly, why even those who were treated for ailments in public hospitals and other facilities could not save themselves from catastrophe? And secondly, why many low income slum and rural people don't go to public facilities? In other words, what makes many of them wary of public facilities? A related question may as well be the National Rural Health Mission (NRHM, April 2005), which is believed to fill many of the voids in rural healthcare system, is able to induce people to rely more on public facilities. The discussion to follow seeks to explore the last two issues more explicitly. Catastrophe-public facility linkages need a separate examination with additional data.

7.2: Factors in Non-utilization of Public Health Facilities: Respondents' Views

One lead question and another two sets of eight questions each were asked at the time of the survey to identify factors responsible for the apathetic attitude of health care users towards public medical facilities.³³ The lead question, asked to the household head, was: have you used public health care services during ailments requiring hospitalization as against outpatient care? Those who replied 'no' were asked to check for possible reasons from the relevant sets. A slightly different set of questions were used to probe the reasons linked with indoor (hospitalized) as against outdoor (non-hospitalized) treatment.

³³ It ought to be mentioned that the debate on disassociating factors making people indifferent towards the public health facilities is decades old. There have been several studies directed to this issue in the past (see for example, Bose & Tyagi, 1983: 104 -122). What is however interesting is that the inferences drawn in those earlier studies match closely with our own. In other words, the public sector, despite major attempts, has not been able to shed many of its past limitations.

Table 7.4a: Non-Utilizations of Government Hospitals/Facilities: Respondents views

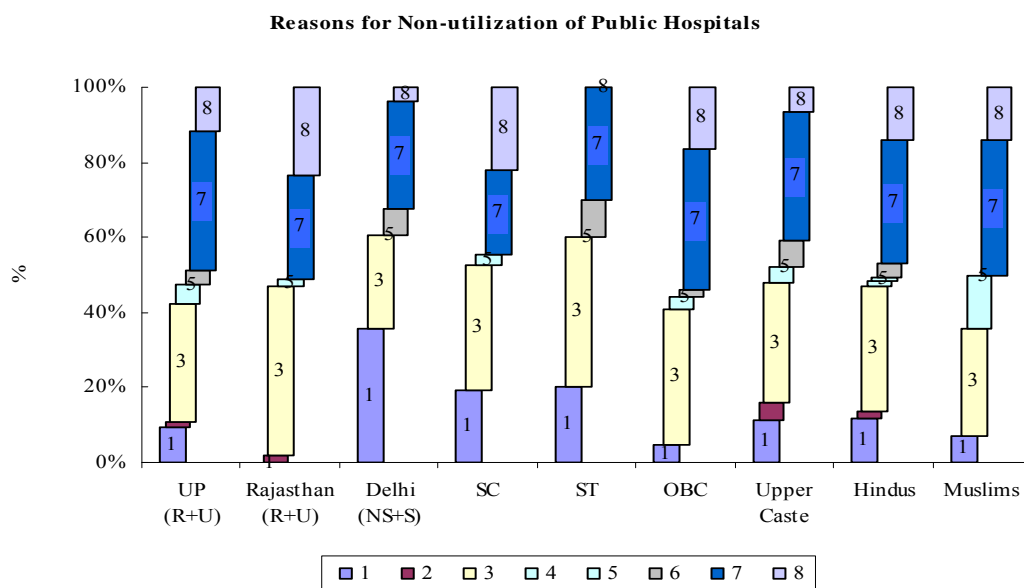
States/Socio-religious categories	Non-utilization of Public Hospitals: Reasons								N*
	1	2	3	4	5	6	7	8	
UP (R+U)	9.2	1.4	31.6	5.3	0.0	3.9	36.8	11.8	76
Rural	8.3	0.0	35.4	4.2	0.0	6.3	33.3	12.5	48
Urban	10.7	3.6	25.0	7.1	0.0	0.0	42.9	10.7	28
Rajasthan (R+U)	0.0	2.1	44.7	0.0	2.1	0.0	27.7	23.4	47
Rural	0.0	3.2	45.2	0.0	3.2	0.0	35.5	12.9	31
Urban	0.0	0.0	43.8	0.0	0.0	0.0	12.5	43.7	16
Delhi (NS+S)	35.7	0.0	25.0	0.0	0.0	7.1	28.6	3.6	28
Non-Slum	38.1	0.0	23.8	0.0	0.0	9.5	23.8	4.8	21
Slum	28.6	0.0	28.6	0.0	0.0	0.0	42.8	0.0	7
SC	19.4	0.0	33.3	0.0	2.8	0.0	22.2	22.3	36
ST	20.0	0.0	40.0	0.0	0.0	10.0	30.0	0.0	10
OBC	4.9	0.0	36.1	3.3	0.0	1.6	37.7	16.4	61
Upper Caste	11.4	4.5	31.8	4.6	0.0	6.8	34.1	6.8	44
Hindus	11.9	1.5	33.6	1.5	0.7	3.7	32.8	14.2	134
Muslims	7.1	0.0	28.6	14.3	0.0	0.0	35.7	14.3	14

* N gives number of persons responding to a particular question from each study area and socio-religious groups. Small number of observations needs to be borne in mind while interpreting the results.

Reasons for non-utilization of Public Hospitals:

1. Public facilities too far.
2. Govt. Hospitals charge for most services.
3. Inefficient.
4. Doctors/Staff rude.
5. Govt. facilities used mostly by richer people.
6. Poor do not have easy access.
7. No drugs or medicine.
8. Others, which mostly include over crowded facilities.

Figures 7.4a: Reasons for Non-Utilization of public hospitals (% Respondents)



Source: Table 7.4a

Table 7.4b: Non-Consultation of Public Facilities & Medical Doctors: Respondents views

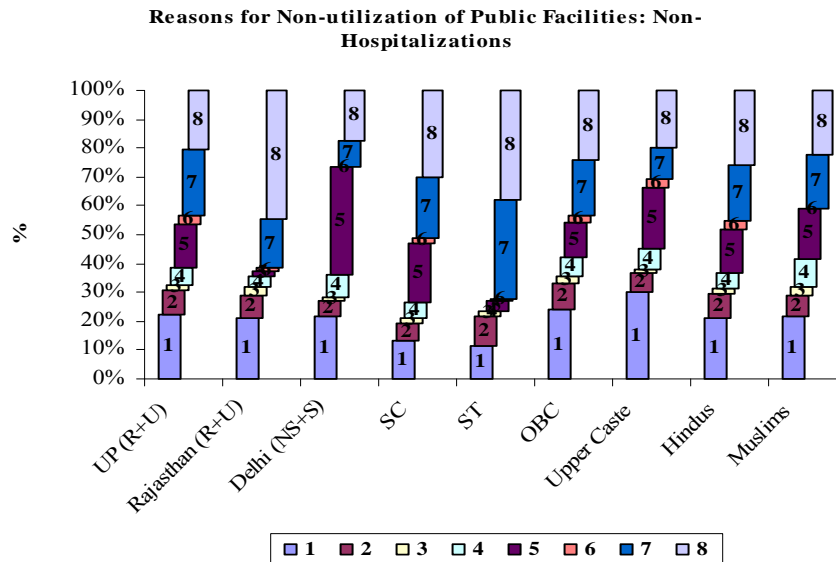
States/Socio-religious Categories	Reasons for Non-consultation								N*
	1	2	3	4	5	6	7	8	
UP (Total)	22.3	8.3	2.0	6.0	14.9	3.4	22.9	20.3	686
Rural	16.2	8.7	2.2	6.4	15.8	2.4	27.8	20.7	551
Urban	47.4	6.7	1.5	4.4	11.1	7.4	3.0	18.5	135
Rajasthan (Total)	21.0	8.2	2.8	3.6	1.8	1.1	17.1	44.5	281
Rural	17.1	9.2	1.8	3.7	1.8	1.4	22.1	42.9	217
Urban	34.4	4.7	6.3	3.1	1.6	0.0	0.0	50.0	64
Delhi (Total)	21.6	5.6	0.9	8.0	37.1	0.5	8.9	17.4	213
Non-Slum	24.7	3.2	1.3	9.7	36.4	0.6	5.8	18.2	154
Slum	13.6	11.9	0.0	3.4	39.0	0.0	16.9	15.3	59
SC	13.1	6.2	2.1	5.2	20.6	1.7	21.3	29.9	291
ST	11.7	9.9	1.8	0.0	3.6	0.9	34.2	37.8	111
OBC	24.1	9.0	2.6	6.6	12.1	2.4	19.3	23.9	456
Upper Caste	30.1	6.8	1.2	7.1	20.8	3.1	11.2	19.6	322
Hindu	21.4	8.0	1.9	5.3	15.5	2.6	19.3	26.1	1,047
Muslim	21.7	7.0	3.5	9.6	17.4	0.0	18.3	22.6	115

* N gives number of persons responding to a particular question from each study area and socio-religious groups. Small number of observations needs to be borne in mind while interpreting the results.

Reasons for non-consultations of Public Facilities:

1. Financially comfortable, can afford private facilities
2. Easy to access
3. Refused to treat patient
4. Doctors not available
5. Doctors/staff rude in behavior
6. Doctors want patients to consult at home
7. Too far from residence
8. Others, (no drugs, over crowded, services not available at odd times)

Figure 7.4b: Reasons for Non-Utilization of Public Facilities: Non-hospitalization



Source: Table 7.4b

The options prompted to health seekers as possible reasons for not accessing public facilities — both outpatient and hospitalization — included the following:

<u>Reasons for:</u> <u>Non-Utilization of Consultation Facilities</u>	<u>Reasons for:</u> <u>Non-Utilization of Hospital Facilities</u>
1. Financially comfortable, can afford private doctor	1. Govt. facilities too far & not easily accessible
2. Easy to access a private doctor at emergencies	2. Govt. hospitals charge for most services
3. PHC/CHC or government hospital refused to treat	3. PHC/CHC & government hospitals inefficient
4. PHC/CHC/government doctor not available	4. Doctors & staff in government hospitals rude
5. Govt. doctors and staff are generally rude	5. Govt. hospitals are mostly used by rich
6. Govt. doctors want patients to consult at home	6. Poor do not have easy access to Govt. hospital
7. PHC/CHC or public hospital too far from home	7. No drugs or medicines in government hospital
8. Others (no medicines, non-available at odd hours)	8. Others (e.g. hospitals over crowded)

A simple frequency distribution of responses drawn from both the categories of service users are presented in Tables 7.4a and 7.4b (also see the attached figures). It may be noted from both these tables that the factors generally dissuade people to utilize public services remain more or less traditional. To illustrate, those who preferred not to access public hospitals facilities found justification in four commonly known reasons: (i) public facilities too far, (3) public hospitals inefficient, (7) most drugs prescribed by the in-house doctors are either out of stock or for self-purchase, and (8) public hospitals are invariably very crowded (see Figure 7.4a). While most of these factors are fairly known and oft repeated, it may be noted that medicines and efficiency in service delivery by public facilities are the two major expectations that need to be ensured by the government and its health apparatuses. Another point to be noted in the context of this discussion is that despite perceptions a very small fraction of respondents had complained against doctors' behavior or growing burden of paid hospital services. Apparently, efficiency in service delivery and subsidized drugs may help in bringing substantial relief to a large number of low income health seekers of public hospitals.

Similarly, patients needing non-ambulatory (or outdoor) care have also held three major constraining factors responsible for non-utilization of consultation services provided by primary or secondary health centers or city hospitals (Table 7.4b). These are: (5) misbehavior by hospital staff including doctors and paramedics, (7) distant locations of public facilities, and (8) others, which largely included overcrowding and non-availability of drugs. It implicitly suggests that the users of health care facilities tend to substitute public health care in favor of the private providers owing to some of these basic constraints; non-availability of drugs and drag on time are the two particularly serious issues for many low

income health care seekers. And yet it seems that the time factor remains diluted when it comes to hospitalizations. Yet another interesting observation relates to the affordability as a criterion to access private medical care. Many of those who decided not to utilize the public facilities were able to afford the cost of private consultation. In other words, there is a possible trade-off between the private and public healthcare facilities — largely because of the latter's inefficient service delivery, non-availability of medicines and cost of transportation.

7.3 National Rural Health Mission (NRHM): A cursory Analysis

The Millennium Development Summit, which was perhaps among the most important meetings of world leaders convened by the United Nations, has adopted a Millennium Declaration on 8th September 2000 in committing all the member countries including India to achieve the following by the end of 2015:

- (i) eradicate extreme poverty,
- (ii) achieve universal primary education,
- (iii) promote gender equality and empower women,
- (iv) reduce child mortality,
- (v) improve maternal mortality,
- (vi) combat HIV/AIDS, Malaria and other diseases,
- (vii) ensure environmental sustainability, and
- (viii) develop a global partnership for development.

In pursuance of these millennium development goals (MDGs), India has initiated in the preceding few years a number of programmes in the realms of education, employment and primary health care. The National Rural Health Mission (NRHM, April 2005) was essentially designed to achieve the specific objectives of improving child survival and reducing maternal mortality (i.e., objectives iv and v). Both the objectives are set to be fulfilled by the end of the current plan period (2007-2012). Since its very inception, the NRHM has tried to differentiate itself from earlier programmes by working to integrate the key determinants of health outcomes including nutrition, drinking water, hygiene and sanitation facilities together with the components of rural health services; all of these were in a gender perspective with an emphasis on poor women and children. The NRHM has also tried to decentralize the health programmes by involving panchayats and other local bodies at district and sub-district levels along with an easier access to financial resources.

Confining largely to its supply side measures, a certain number of review articles have tried to bring out many of the key elements embodying this programme, provision for a completely new brand of health personnel like ASHA (Accredited Social Health Activists), greater role of practitioners trained in Ayurveda, Unani, Siddha, Homeopathy (AYUSH), improved functioning of block level hospitals, and ease in mobilization of physical and financial resources (Sinha, 2009; Kumar, 2005). Contradicting to a large extent the views expressed by Sinha (2009) and Kumar (2005), Ashtekar (2008) tried to bring out several limitations — financial, skill related and limited prospects of integrating sectors that largely help to determine most health outcomes.

Unfortunately, a great deal of the on-going debate on this programme — both in favour and against — has failed to make observations on the basis of certain outcome variables. We therefore try to present below a few simple facts with an objective to make inferences about the following:

1. The extent to which the NRHM has caught the attention of rural people from different socio-economic strata including those suffering catastrophe due to unproportionate spending on health, and
2. Post-NRHM improvements (if any) in availability of health care services, PHC doctors and other health workers. Respondents' views on distribution of medicines/vitamins being given to women during pregnancies, utilization of doctors trained in Indian systems of medicine (AYUSH) and ASHA health workers.

Responses collected from a total of 1,250 selected rural households from UP and Rajasthan are summarized in Tables 7.5a and 7.5b. The two tables, as was mentioned, broadly reflect the awareness, utilization and satisfaction with rural healthcare facilities post-NRHM. Unfortunately, however, to what extent these facilities have been able to perform better from their pre-NRHM level (or have been able to attain a better outcome) may not be discussed with the help of the data available to us. In addition, the time gap involved between the launch of this programme and our own study appears to be too limited to derive more conclusive observations.

Table 7.5a describes the availability of primary health services in the survey areas. It also highlights the fraction of sample households aware about the NRHM and its objectives

such as the role of ASHA or the services being provided by primary health units to ensure institutional delivery. Respondents have also reacted to certain qualitative questions like improvements in delivery of services during the past few years (or since the introduction of NRHM). Nonetheless, risks of subjectivity while interpreting those responses ought not to be ignored.³⁴

On the awareness issue, Table 7.5a doesn't seem to be very encouraging as very small fractions of people from both the states, in particular from Rajasthan, knew about the NRHM or the level of priorities attached to improved child health and institutional delivery. Between the two states, residents of Unnao and its villages appear to be better informed about the NRHM. About a fifth of the total respondents in Unnao have reported their awareness about the Mission. The same in Rajasthan was below 10 percent. People from upper caste categories and economically better-off respondents (e.g., above poverty or higher quintile households) have however shown a greater awareness about the rural health mission and a couple of its intended objectives, although even their shares do not exceed far beyond a fifth or a quarter of their respective numbers. Interestingly, however, despite so much of ignorance about the NRHM or its basic concerns, a much bigger fraction of respondents have not only reported satisfaction with the services provided by the primary health units but have also reported visible improvements in the delivery of health services over the preceding two or three years. To make it more specific, they further confirmed improvements in services covering reproductive and child health (Tables 7.5a and 7.5b).

³⁴ In addition to subjectivity, it must also be confessed that the survey designed to undertake this study and most of its questions were not framed with the NRHM as the central issue. Hence, a further and more in-depth analyses of the issues raised here would require a separate study and data base.

Table 7.5a: Awareness about the NRHM & Availability of Primary Health Facilities: Responses From Rural Households

Households' Characteristics: States, Districts, Socio-religious, Consumption Quintile & Catastrophe Levels	Knowledge about NRHM	Village with a health centre including PHC/CHC	Developed PHC in the village	Satisfied with the delivery of services	Improvement in health services over past few years	Percent
						Role of Panchayat/ Municipal Bodies in Primary health services
Share with Affirmative Responses						
<i>A. District Sample</i>						
Unnao	20.0	58.2	21.3	67.2	42.2	18.4
Jhansi	8.0	64.7	6.3	76.3	40.0	13.0
Uttar Pradesh	15.2	60.8	15.3	71.1	41.3	16.3
<i>B. Economic Characteristics</i>						
Dausa	7.2	56.0	3.6	87.9	41.2	10.8
Dunger Pur	8.4	74.8	4.8	90.4	66.4	10.8
Rajasthan	7.8	65.4	4.2	89.3	53.8	10.8
Below Poverty (BPL)	4.1	59.2	6.8	87.7	53.2	12.4
Above Poverty (APL)	16.2	64.3	12.9	74.6	43.0	14.9
<i>Con. Quintiles</i>						
Lowest 20%	2.4	62.4	5.6	89.1	56.0	11.6
2	7.6	58.8	8.8	83.7	47.6	14.0
3	9.6	67.7	11.6	73.5	44.2	15.1
4	14.9	59.0	11.2	73.5	41.8	13.3
Richest 20%	26.8	65.2	17.2	74.2	42.0	16.4
<i>Catastrophic HHDs</i>						
Mild: z = 5%	12.3	63.7	11.3	77.9	47.0	13.3
Acute: z = 25%	13.4	59.7	9.5	73.9	38.1	13.4
<i>C. Social Characteristics</i>						
<i>Social Groups</i>						
SC	14.1	66.0	15.5	77.6	42.6	15.5
ST	2.6	57.6	0.9	87.2	45.9	9.1
OBC	12.7	58.1	11.8	77.5	45.5	12.9
Upper Caste	19.4	75.6	13.4	75.0	54.2	20.9
<i>D. Religious Characteristics</i>						
<i>Religion</i>						
Hindu	12.1	60.9	10.6	80.1	46.4	13.8
Muslim	14.3	82.7	14.3	66.7	44.9	17.3
<i>E. Total Sample (N = 1250)</i>						
	12.2	62.6	10.9	78.7	46.3	14.1

Table 7.5b: Utilization and Felt Improvements in Service Delivery since NRHM Responses from Rural Households

Households' Characteristics: States, Districts, Socio-religious, Consumption Quintile & Catastrophe Levels	Improvement in reproductive & child health services over past 3 years	Regular visit by the PHC doctor/s	ASHA workers in place	Recipients of ASHA Service/s	Distribution of certain medicines, vitamin tablets and ORT from PHCs	Percent
						Users of traditional Indian system (AYUSH)
Share with Affirmative Responses						
<i>A. District Sample</i>						
Unnao	69.3	80.4	61.3	30.4	55.3	27.3
Jhansi	92.7	85.7	93.3	47.7	85.0	11.0
Uttar Pradesh	78.7	82.5	74.1	37.3	67.2	20.8
<i>B. Economic Characteristics</i>						
Dausa	96.4	94.0	72.8	33.6	75.6	9.6
Dunger Pur	98.8	91.6	88.8	43.6	68.8	53.2
Rajasthan	97.6	92.8	80.8	38.6	72.2	31.4
<i>C. Social Characteristics</i>						
Below Poverty (BPL)	86.7	90.8	81.1	59.6	73.8	21.1
Above Poverty (APL)	86.0	84.6	74.7	43.8	66.9	27.0
<i>Cons. Quintiles</i>						
Lowest 20%	86.4	89.6	82.0	63.9	75.6	20.8
2	87.6	89.6	78.8	54.8	72.0	21.2
3	87.6	90.4	77.7	43.6	68.9	26.7
4	85.1	82.7	73.5	45.9	65.5	21.7
Richest 20%	84.4	80.8	72.0	36.1	64.0	34.8
<i>Catastrophic HHs</i>						
Mild: z = 5%	86.1	84.9	76.3	53.5	66.9	26.5
Acute: z = 25%	82.7	86.1	71.0	43.3	57.1	22.9
<i>D. Religious Characteristics</i>						
<i>Social Groups</i>						
SC	84.5	86.3	79.4	41.6	71.1	23.0
ST	97.0	91.3	84.9	42.4	68.4	26.0
OBC	82.5	85.6	68.9	33.4	67.9	21.1
Upper Caste	86.1	84.6	84.6	38.8	70.6	37.3
<i>E. Total Sample (N = 1250)</i>						
	86.2	86.6	76.8	37.8	69.2	25.0

On the flip side, these responses have remained considerably large across all the households distributed according to their socio-economic (social groups, quintile groups, etc.) characteristics. Even the two categories of catastrophic households, mild (z = 5%) and

severe ($z = 25\%$), have also felt the same way. Some other interesting observations stemming from both the tables include:

- PHC doctors visit regularly. It was reported by more than 80 percent of the respondents.
- ASHA workers already in place; confirmed by almost three-quarters of the sample people.
- Between 30 to 64 percent of households from different socio-economic and religious categories has received help from the ASHA workers. Interestingly, shares of low income and catastrophic households among them were considerably large (Table 5.7a).
- As for the vitamin tablets, ORT or some other common medicines, respondents admitted to have received them from the health workers and their PHCs.
- Barring sample of persons from Dunger Pur (Rajasthan), economically better-off and upper caste households, a very small fraction of respondents have used AYUSH services. The share of AYUSH users remain invariably below 20 percent of the respective samples. Muslims and residents of Unnao are the worst off on this count.

Finally to cap some of the discussions, it must be noted that the two diametrical messages are emerging from the analysis presented in this chapter. On the one hand, we observe that a large percentage of responding households (even a majority in many cases) do not find it worthwhile to rely on facilities provided by the government, particularly for non-ambulatory or out-patient care. On the other, we notice that the NRHM has caught recognition of a good number of rural people in a short span of three years (i.e., time gap between this study and the inception of NRHM in May 2005) and they did appreciate the services provided by the primary health units. They also report favorably about the PHC doctors, ASHA and certain qualitative improvements in rural healthcare services since the NRHM. The question may therefore be: why is there so much of health related catastrophe or apathetic attitude among the service users towards public facilities. Answers appear to lie at two levels. First, rural healthcare has largely been confined to a particular age segment. In addition, it is restricted to a particular health domain as well. A large number of diseases falling beyond the reproductive health domains have remained poorly managed. As those diseases cause catastrophe to a very large extent, the government will have to consider ways to bring significant improvements in the delivery of secondary and tertiary healthcare services as well.

References

Bose, Ashish and Tyagi, R.P., 'Rural Health Services: Present Status' in Ashish Bose & P.B. Desai, *Studies in Social Dynamics of Primary Health Care*, Delhi: Hindustan Publishing Corporation (I): 104-122, 1983.

Shear, S. 'The National Rural Health Mission – A Stocktaking', *Economic and Political Weekly*, September 13, 2008, pp. 23-26.

Kumar, A.K. Shiva, 'Budgeting for Health, Some Considerations', *Economic and Political Weekly*, April 2, 2005, pp. 1391-1396.

Ministry of Health and Family Welfare (Government of India), 2006: *Family Welfare Statistic in India – 2006*, pp. 33.

Planning Commission, Government of India, *Eleventh Five Plan (2007-2012), Social Sector, Volume II*, New Delhi: Oxford University Press, 2008 p. 58.

Sinha, A. 2009 'In Defense of the Rural Health Mission', *Economic and Political Weekly*, April 4, 2009, pp. 72-75.

Broad Conclusions and Policy Directions

Drawing upon a set of comprehensive field based data and an in-depth analysis of the OOP health payments by a cross-section of households from selected rural and urban areas of three different states — UP, Rajasthan and Delhi — there appears to be major challenges ahead for both the planners and administrators of healthcare services. This can easily be noticed from the discussion so far. While this chapter however doesn't intend to replicate most of that discussion or its underlying messages in a conventional setting, it does attempt to cull out briefly a few of the major observations after piecing them together from different chapters as reference points.³⁵ As regards directions of policy this chapter sets out to provide scores of considered opinion given by the respondents on issues of critical concerns – e.g., recent increase in healthcare charges, over-prescription of medicines and/or diagnostics by medical professionals, role of drugs in making healthcare expensive, etc. This will be followed by another set of respondents' reactions covering issues in a policy framework such as health insurance, and the extent respondents would be willing to go for such a product on a payment basis. Most of these questions and their responses are expected to help in deriving a host of policy recommendations based on considered judgments of those who really matter. It may nevertheless be noted that in no way these recommendations may be treated as out of box.

Most of the analysis was broadly directed to focus on the following concerns: (i) OOP health payments and attendant issues of poverty and inequality, (ii) catastrophic health payments and some of its correlates, (iii) decomposition of health payments and share of drugs/medicines in total health expenditure, (iv) share of public health services in hospitalization and out-patient care, (v) public health care utilization and catastrophic payments, (vi) extent of untreated ailments mainly because of high health care costs, (vii) attention generated by the NRHM among the rural households and their views on improvements in delivery of health services over the past few years, etc.

³⁵ A summary of the major findings is already presented at the beginning of this study.

8.1: Highlights of Major Findings

As has already been pointed out, a number of observations have been cited in the preceding chapters and, barring a few, most of them have not been repeated here to ensure brevity. Among the notables, one of the more critical observations perhaps relates to the role played exclusively by the OOP health payments in adding to the overall poverty level. We have culled a table on the basis of certain earlier exercises to show the role of health payments in poverty enhancements. Table 8.1 gives poverty levels both before and after the OOP health expenditure. This table clearly shows the vulnerability of a significant fraction of the rural and slum households to health payments. In addition to deepening poverty of those who are already below the poverty line, health payments, for instance, bring an additional 10 to 14 percent of households under the poverty net (see painted numbers in Table 8.1). In addition, there appears to be another significant policy message from this table — households at the fringe of poverty level may easily experience a shift in their economic status from above to below poverty level due to no or very limited affordability in terms of health payments. It may further be construed that the declining poverty in many situations remain deceptive as a good fraction of fringe level households, both rural and urban, may remain vulnerable to situations like self or family ailments. An analysis of household indebtedness in Chapter 3 (section 3.3) has shown that more than a quarter of indebted urban households had borrowed to meet medical exigencies. The same in rural areas turns out to be little over 19 percent. Chapter 3 also indicates a big share of private money lenders in those borrowings. Does it mean to suggest that the health care services in the country are not affordable in their present form for a significant percentage of households? While a categorical answer to this question may need further and more in-depth studies, this is indeed an issue that warrant a greater consideration, especially from health policy mandarins.

Table 8.1: Increase in Poverty due to the OOP Health Payments: Sample Households
Percent

	PCMCE 1		PCMCE 2 = PCMCE 1 - OOP		Increase in poverty due to OOP health payments	
	Poverty Head Count: 1*		Poverty Head Count: 2**		Rural: 2(a) - 1(a)	Urban: 2(b) - 1(b)
	1(a): Rural	1(b): Urban	2(a): Rural	2(b): Urban		
Total Sample (n = 2010)	33.0	18.8	46.5	24.9	13.5	6.1
UP (n = 1000)	36.0	25.6	49.6	29.6	13.6	4.0
Unnao (n = 600)	34.7	20	48.89	22	14.2	2.0
Jhansi (n = 400)	38.0	34.0	50.7	41.0	12.7	7.0
Rajasthan (n = 650)	28.4	28.6	41.8	38.0	13.4	9.4
Dausa (n = 300)	21.6	38.0	34.0	56.0	12.4	18.0
Dungarpur (n = 350)	35.2	24	49.6	29.0	14.4	5.0
Delhi (n = 360)	-	10.0	-	16.1	-	6.1
Slums (n = 102)	-	26.5	-	41.2	-	14.7
Non – slum (n = 258)	-	3.4	-	6.2	-	2.8

* Poverty Head Count 1 = Per capita monthly consumption expenditure (PCMCE) of a household – state wise poverty line (z) given by the Planning Commission (for details, see Chapter 3).

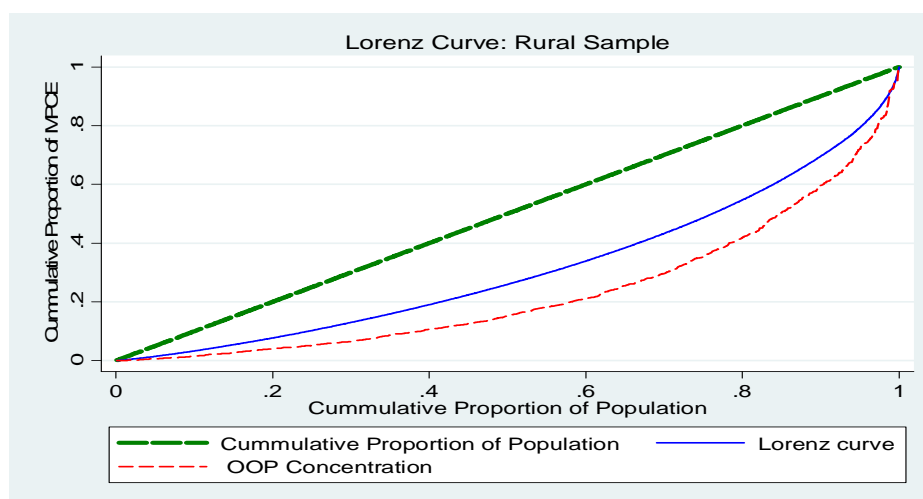
** Poverty Head Count 2 deducts the OOP health expenditure from the PCMCE before computing the poverty.

A related point in the underlying context that arose from the preceding discussion is that anti-poverty measures in the country, and particularly in areas under study, may not work to their real potential unless the health services are scaled up to a considerable extent — that too in every health domain. It also requires taking into account the needs of persons or households forced to borrow money from private sources on coercive conditions at the time of ailments. Could there be a role for the community-based micro credit institutions to lend small amounts to the poor and needy during certain health emergencies? This is indeed a significant issue and may be considered from its different perspectives. A major stumbling block in raising such institutions would be the intra-regional diversities requiring appropriate changes in organizational matters. To be precise, perhaps a perfect replication of a particular system or mode of organizational structure may not be possible across different places. Civil society institutions may have to be propped-up to work on a system amenable with local conditions and environment.

An interesting point to note from most of our poverty analysis is the non-emergence of a well specified target group that could become most eligible for health subsidies. In the

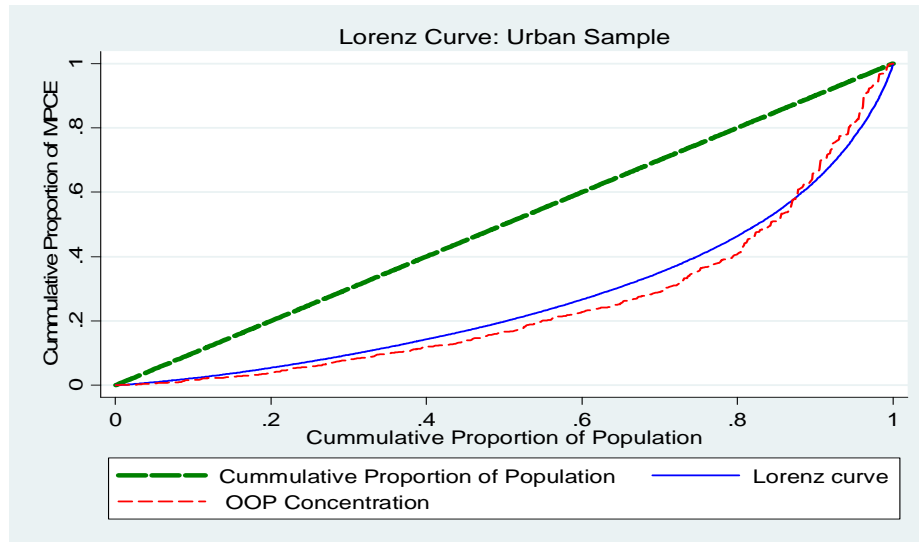
context of poverty and inequality, for example, health expenses remain critical to most of the sample households – irrespective of their residential or socio-economic and religious characteristics. While these factors, particularly caste and place of residence, do matter in many ways, it cannot be argued conclusively that a particular segment or group of households must bear an overriding public concern over others. When it comes to health, a great deal of both rural and urban populations suffers from serious issues and face inequalities. Even in many cases a fraction of higher income people suffer from non-affordability (or lack of capacity to pay) problems. And yet, our results do indicate the worsening state of the rural and slum households. A couple of Lorenz curves separately for the rural (UP and Rajasthan) and the urban (UP, Rajasthan and Delhi including the slums and non-slums) areas (Figures 8.1 and 8.2, respectively) illustrate the points argued here. Health payments clearly bring inequality issues more sharply in urban areas, and logically the slum households bear most of the brunt. Certain higher income categories also appear to pay for health care in excess of their affordable limit. In case of the rural sample, OOP inequality is seemingly less sharp (OOP Gini = 0.707), though the differences between the two are marginal. Two points may therefore be made. First, inequalities and critical nature of health issues remain more or less

Figure 8.1: Ability to Pay and Health Inequalities: Rural Households (UP & Rajasthan Combined: N= 1250)



Gini Coefficient: ability to pay = 0.367 OOP Gini: Inequality in health payments = 0.707

Figure 8.2: Ability to Pay and Health Inequalities: Urban Households
(UP, Rajasthan & Delhi Combined: N= 760)



Gini Coefficient (ability to pay) = 0.473

OOP Gini: Inequality in health payments = 0.742

of equal importance for the households, irrespective of their place of residence. Second, inequalities in health payments are much larger than the consumption inequalities, implying inaccessibility of health services for a number of the poorest rural and urban households. A third point may be made that a segregation between the above and the below poverty households as claimants of public subsidies may not work as in many situations both remain vulnerable to an equal measure.

Moving to the issues of catastrophic health payments, our results appear to indicate that the catastrophe cut-off levels, as frequently used in international literature, make no or a very limited sense for the observed sample of households. This is to a greater extent true at the higher cut-off levels. With the share of non-food consumption expenditure as low as observed in the present analysis, any fraction of OOP health expenditure may not only look catastrophic, it would rather overshoot the defined catastrophe limit. There is thus no wonder that we are getting very high incidence of catastrophe (along with higher MPO values)³⁶, and its correlates mostly include the socio-economic and public health deficits. Stretching this argument little farther would imply that even a small amount of OOP spending on health may push a large number of households into some degree of

³⁶ See Chapter 5, section 5.3.

consumption catastrophe. Also, it applies to both the rural as well the urban households. Yet another notable observation in this context may be the fact that even the users of public healthcare facilities are not able to save themselves from catastrophic payments. This is partly because of the systematic withdrawal of subsidies on drugs and diagnostics by the government.

Obviously, all this boils down to a basic question: what component/s of health spending drives households to face a catastrophe? Intuitively, this question may have a role in pinning down a few policy interventions to minimize the catastrophic incidences. In response to this question we tried to compute the shares of (i) consultation fee, (ii) expenditure on drugs and medicines, (iii) expenses on diagnostics, and (iv) cost incurred on commutation and other related expenses in the total health expenditure of the sample households. In a large number of cases, our computations reveal drugs as the biggest expenditure, and in some cases it turns out to be around 90 percent of the total health budget. Even in normal situations, drugs and medicines account for over three-fourths of the total OOP spending on health. This result is in consonance with some other studies recently conducted at the all India level. This raises many serious issues from the policy view point. Two of them bear serious considerations. First, most public medical facilities do not provide medicines to their patients including the poor patients. Even in many cases, these facilities expect service users to provide sundry items like cotton or bandages. These are in addition to items such as registration fee, costs of various diagnostic tests and commutations including attendant's stay. Besides being a push factor to catastrophe, it also dissuades even poor service users from using public facilities, especially in non-hospitalization cases.

The second issue relates to drug pricing, and growing concerns have already been raised in many national and international literature regarding the World Trading Organizations (WTO) Agreement on Trade-Related Aspects of Intellectual Property rights (TRIPS).³⁷ These negotiations and agreements have clearly set minimum standards for the protection of intellectual property. It has also helped to generate considerable gains for the

³⁷ TRIPS agreement was drawn in January 1995 with a view to bring global minimum standards for the protection of intellectual property, including a minimum 20 years' patent protection on pharmaceuticals. The compliance of the agreement was however deferred until 2005 for the developing countries and 2016 for least developed countries (Smith, Correa and Oh, 2009).

global pharma companies. Commenting on a study by Smith, Lee and Drager (2009) in favour of TRIPS and its trade related advantages, Stiglitz (2009) has noted certain fundamental problems with the system as it restricts the use of knowledge, brings (temporary) monopoly power and gives rise to enormous economic inefficiencies.

In India, despite the use of generic drugs, the share of non-generic market is as high as 70 percent of the total. In addition, the generic market has suffered a static growth over the past few years. Table 8.2, cited in a study by Smith, Correa and Oh (2009), brings out the significance of non-generic medicines in the context of the Indian health scenario which is marred in many cases by the over prescription of drugs and diagnostics. Two significant points follow from this table. As the non-generic products account for 70 percent of the domestic market, an inference may therefore be made that the drug prices may not be completely in sync with the Indian poverty scenario. Market forces would operate and influence the health budget with a disproportionate affect on the poor and the deprived. The effects of increase in drug prices may also be felt because of its share in the total health spending. Persons and households with degenerating diseases, especially the aged, may suffer their worst. Growing roles of TRIPS and patenting linked drug prices may also have a bearing on availability of medicines in government facilities.

Table 8.2: Indian Pharmaceuticals and Health Care Sector

	2006	2007
Generic Market (US \$ billions)	3.1	3.3
Generic market as % of total market	30	30
Market share: imports (%)	35	35
Market share: domestic output (%)	65	65
Health expenditure (US \$ billions)	41.3	44.0
Hospital sector ((US \$ millions)	16,300	16,400

Source: Smith, Correa and Oh (2009, Table 3).

Where does the solution lie? This is perhaps a complex issue and requires a deft handling of TRIPS negotiations along with a serious policy make-over in regard to making medicines available at subsidized prices to patients. To be precise, would it be possible for the government to find enough resources and to provide subsidy on medicines? While a clear cut answer to this question may not be found in this analysis, it may however be pointed out that all the three, i.e., the OOP health expenditure, most of its attendant issues,

and the drug pricing, are mutually inter-connected. And, therefore, none of them may be decided independently.

Negotiations to make TRIPS less painful apparently involves a sustained and evidence-based advocacy to sensitize the world community about the issues and the catastrophic nature of health spending with the largest share of health budget being allocated to buying medicines. Especially the TRIPS-plus may be far more difficult and is expected to bring further complexities to the issues of poverty and OOP health expenditure. Besides the evidence-based advocacy and policy dialogues, health policy officials may also use the in-built flexibilities in patenting rights and make use of the life saving drugs clause to introduce compulsory licensing for a maximum number of drugs. It may however require a deeper understanding about the disease profile and bulk drug requirements at regional and sub-regional levels along with the socio-economic background of those who suffer from these diseases. A small team of multi-disciplinary experts may work in the Ministry of Health and Family Welfare or in the Planning Commission exclusively on these issues by keeping the TRIPS-plus in perspective.

Somewhat alarming but a fairly known issue in the context of health delivery is the poor utilization of public health care facilities by health seekers – both ambulatory and non-ambulatory. Reasons remain primitive, long hours of wait, non-availability of drugs, poor outreach, lack of emergency services in local (village level) health centres and improper behavior by the medical staff. And yet, a number of respondents have been disposed-off fairly well and have started taking note of the NRHM and its services. There has especially been a positive response towards the role played by the ASHA health workers, availability of PHC doctors and distribution of certain medicines required by women and children. How far the mission is able to cover the health care needs of those in non-reproductive ages is not clear from this study and, therefore, an area worth of exploration in future research. The incidence of catastrophic health spending raises doubts about the versatility of the NRHM. Also there appears to be very limited utilization of consultation facilities provided by the AYUSH practitioners in many healthcare centres. This is largely true for the low income rural people. In contrast, while certain fractions of upper castes and economically better-off segments consult these doctors, their numbers remain small.

Given some of these major observations, which only represent a part of the entire analysis, four issues appear to be critical at policy level: (i) delivery of health services is of paramount importance if India is to succeed in its attempts to minimize poverty – although the current definition of poverty is over-simplistic, (ii) making drugs available at a subsidized price appear to be the most critical factor for any policy intervention as expenditure on drugs accounts for most of the health spending, and (iii) prevalence of health catastrophe appears to be quite high and forces many households to face considerable loss of well-being, and (iv) public health care facilities do not insulate people from the risks of catastrophe.

The obvious question would then be: what interventions are likely to bring some respite. A number of earlier studies have already been grappled with this question with a plethora of suggestions. Many have for instance recommended improving the quality of health services, expanding the outreach of public facilities, bringing top-down planning approach, generating additional finances to introduce greater facilities, enhancing the role of community and charting community leaders as the watch dog, etc. Instead of making a remix of the earlier suggestions, we collected households' responses on certain key questions with considerable policy contents.

8.2: Respondents' Views on Critical Policy Issues

Survey respondents were basically asked to comment mostly on issues on which they were expected to have a better understanding. A few of those respondents, especially in rural areas, were also given certain background information, particularly on operational aspects of health insurance. Some of the more important questions included: (a) Do you feel that the health services have become costlier over the past one year? (b) Do you think doctors generally over prescribe medicines/diagnostic tests? (c) In your opinion, would a low premium

Table 8.3: Respondents' Views on Critical Policy Issues

Household Characteristics	Health services become costlier by more than 50% during the past one year	Has income also grown almost at a similar pace?	Drugs have a maximum role in escalation of OOP expenditure on health	Doctors mostly over prescribe medicines	Doctors mostly over prescribe diagnostic tests	Low premium health insurance may be a possible option for the poor	Would you be willing to join an insurance system on self-payment basis?
Share of Respondents in Agreement (%)							
UP	79.2	45.2	46.8	63.6	52.8	55.7	51.6
Rural	80.0	48.0	48.5	64.5	52.7	54.7	51.7
Urban	76.8	36.8	41.6	60.8	53.2	58.8	51.2
Rajasthan	86.0	57.5	59.1	76.9	59.7	77.8	71.7
Rural	86.8	55.2	61.8	75.6	60.0	75.4	69.2
Urban	83.3	65.3	50.0	81.3	58.7	86.0	80.0
Delhi	92.5	21.9	28.1	38.6	48.9	30.6	28.3
Slum	90.2	16.7	29.4	35.3	31.4	38.2	36.3
Non slum	93.4	24.0	27.5	39.9	55.8	27.5	25.2
Social Groups							
SC	84.0	42.0	49.0	63.1	52.3	53.4	49.5
ST	82.3	51.0	55.8	66.7	50.6	69.9	65.5
OBC	81.2	45.3	48.4	66.5	55.5	63.1	58.3
Upper Caste	88.1	44.4	40.6	57.7	56.1	50.3	45.9
Religious Gr.							
Hindu	84.0	46.0	48.3	63.8	55.1	58.7	54.2
Muslim	81.4	34.6	44.7	60.6	48.9	57.4	53.2
Con. Quintiles							
Poorest 20%	74.1	45.3	40.0	61.4	51.5	57.7	51.5
2	78.6	51.7	49.8	65.4	46.5	68.7	64.4
3	84.8	41.8	50.5	68.7	55.5	58.7	54.5
4	87.8	45.0	54.5	68.4	58.5	61.2	57.2
Riches 20%	93.5	41.3	42.3	53.2	59.7	45.5	42.0
Catastrophic HHDs							
Mild (z = 5%)	91.8	47.1	61.7	74.6	60.7	57.0	54.6
Acute (z = 25%)	94.7	45.1	83.7	82.1	66.8	58.3	57.7
Total Sample	83.8	45.0	47.4	63.4	54.3	58.4	53.9

health insurance would be a workable solution, and finally (d) If required, would you be willing to subscribe to such an insurance scheme? The last two questions were asked against

the backdrop of a recent initiative by the government to launch a Rashtriya Swastha Bima Yojna (RSBY) for a segment of the below poverty households.³⁸

Table 8.3 summarizes respondents' views on all the major questions. It may be noted that a very large number of respondents, almost 8 to 9 out of ten, have agreed that the health services have become expensive by more than 50 percent over the preceding 12 months.

However, a smaller percentage of them have also agreed that their incomes grew almost in the same proportion simultaneously. Interestingly, however, such respondents were lowest in Delhi.

Upper caste respondents, Muslims and slum households have also largely disagreed to the 'proportional growth in income' idea. Another interesting observation arising from this table relates to the over prescription of medicines and diagnostic tests by medical doctors. Barring Delhi slum dwellers, most others felt the same way. Almost a similar response was drawn in case of the drug prices as well. Particularly, the catastrophic households (both mild and severe) and respondents from Rajasthan have agreed to the view that the drug prices play spoil-sport and contribute to a significant extent in escalating the level of OOP expenditure on health.

When asked about health insurance, it may be interesting to note that those with better access to health care do not mostly subscribe to this suggestion. Table 8.3 shows that in the richest quintile, Delhi, respondents as well as upper caste people have favored such a scheme in much smaller fractions. Those who endorsed the health insurance idea were however in majority among other categories of respondents including the rural and urban households of UP and Rajasthan. Almost a similar response has emerged from the last question – namely, would you be willing to join an insurance system on self-payment basis? Following from the earlier question, those with better access or affordability to health care largely showed disinterest. Others have however favored. But still, it may be surmised that a self-paid health insurance is a strong possibility if the government is able to regulate the

³⁸ Government is currently in the process to launch three important insurance covers to fulfill some of its social security obligations: (i) the Aam Admi Bima Yojana to provide death and disability cover to the poor, (ii) the Janshree Bima Yojana with an objective to cover health and life risks, and finally (iii) the Rashtriya Swastha Bima Yojana (RSBY) in order to cover the medical risks. An interesting feature of the RSBY is that it proposes to remain without any exclusion clause. With an annual premium of Rs. 600, paid by the Centre and states jointly on 75:25 basis, the below poverty policy holders and their family will be authorized to avail hospitalization benefits worth Rs. 30,000 a year.

system well, particularly against the menaces of exclusions and cartelization among medical professionals, service providers and major pharma companies.

8.3 Broad Policy Directions

Now, where do we go from here? Perhaps the respondents' views underscore three significant points. Besides the couple of those which has already been discussed earlier, there is an indication that the supply side management of the health market remains mired because of the growing dependence among health seekers on private providers. In several cases, public sector facilities do not prove a close substitute to private providers. This is particularly true for out- patient services. Even in hospital services, a large segment of people depend on private providers. All this affect the private medical services and their price determination system. This has aptly been summarized by the respondents when they report over 50 percent escalation in their medical budget over a brief period of the past 12 months. A related point may be noticed from the perception that doctors over prescribe medicines. Does it reflect certain laxity in administration of medical rules? Also there is serious problem with the medical ethics in the country. Medical profession is now largely guided by corporate practices with core objective to maximize profit through increased occupancy rates or patients' consultation. An apprehension has also been made that the RSBY may further aggravate the situation, particularly for the uncovered families. Health policy makers may have to take some of these factors into consideration to bring down the cases of catastrophe. Public facilities will have to become efficient, client responsive and a close substitute to private services. The recent initiative to appoint Rogi Kalyan Samitis will have to be strengthened.

Patients of public hospitals facing catastrophe need to be examined. Drug pricing and availability of essential drugs to patients in public facilities warrant serious consideration. Deployment of manpower and management of public hospitals need considerable fine tuning. Especially there is a need to minimize non-clinical responsibilities of medical doctors in most public facilities. If at all viable, certain hours may be fixed in a week for every medical doctor to devote to their clinical responsibilities. Poor patient-doctor or patient-health worker relationship is a perennial issue and needs serious consideration. Medical ethics is another area to minimize complaints such as over prescriptions.

Beyond all this, perhaps a most potent issue for consideration is to work on a comprehensive risk pooling arrangement, covering both in and out-patient treatments. While the RSBY is apparently a good initiative, it simply covers a very small segment of poor population (roughly 12 million). In addition, it's directed only to hospitalization (including day care) cases. Given a very high prevalence of ailments requiring non-ambulatory care — i.e., around 15 percent as against 2.5 to 3 percent requiring hospitalization — the non-coverage of out-patient care may leave most of the problems unresolved. Moreover, our study has highlighted that expenses on out patient care has been equally catastrophic in nature, and therefore worth covering under schemes like the RSBY.

Patenting rights and TRIPS negotiations require very serious understanding about the health status of the country's population. To achieve some of these objectives, there is a very strong need to undertake a series of micro-level studies to know about the health status of poor and low income people, especially from economically low performing districts and states.

References

Smith, Richard D., Kelley Lee and Nick Drager, 'Trade and Health: An Agenda for Action', *The Lancet*, Vol. 373, Issue 9665, 28 February 2009 pp. 768– 73, doi: 10.1016/S0140-6736(08)61780-8. published online January 22, 2009.

Smith, Richard D., Carlos Correa and Cecilia Oh 'Trade Trips and Pharmaceuticals', *The Lancet*, Vol. 373, Issue 9664, 21 February 2009 pp. 684-91.

Stiglitz, Joseph E. 'Trade Agreements and Health in Developing Countries (Comment)', *The Lancet*, Vol. 373, Issue 9661, 31 January 2009 pp. 363-365.