Can health insurance be a healthy option for health care financing in India: An empirical study with special reference to social health insurance

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Abstract: Utilizing secondary dataset of WHS-2003, NFHS-3 (2005-06) and dataset of a primary survey, the present paper addresses the importance of health insurance for equitable healthcare utilization, and whether health insurance can really be a healthy option for healthcare financing in India. The paper focuses on Employees State Insurance Scheme, a social health insurance. Primary data was collected from 400 households and information regarding quality of care was gathered from 150 patients. Findings reveal that insurance coverage is very low among the people of lower income quintiles, and they spent a larger share of their income to meet healthcare costs. Although, regression analysis indicates households having any health insurance scheme tend to utilize healthcare services more compared to those without any health insurance, risk-reduction outweighs quality of care among those who are insured. Finally, the paper recommends few mechanisms how best the healthcare services can be offered to the poorer people and that may work out as an alternative or supporting option to get rid of the threat of catastrophic health payments and debt-trap.

Key Words: *Health insurance, Healthcare utilization, Social health insurance, Quality of care, Catastrophic health payments*

1. Introduction

In recent times, there has been a growing concern with the increasing cost of health services and the existing mechanisms for financing health care costs. Like other developing countries, in India, the Ministry of Finance seems to undervalue health development particularly for the rural and tribal population because all modern health facilities are getting concentrated in the urban areas. As a result, for health service development, tax collection increasing beyond the limits seems to be critical option for the government (Green 1992). In such a situation, a significant viewpoint has emerged to manage the problem. Taxing the poor most heavily to pay for the health for all may be better than making the sick for the sick, but it is hardly in the line with health for all policies, which identify poverty as major cause of ill health. It would be shocking to advocate making the poor still poorer by taxation (Abel-Smith 1986). The triumph over such complexity of taxation in relation to improve health status and quality of life of the people, health insurance emerges as a potentially better option. For the reason that

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health insurance offers a means of obtaining a substantial part of the funds for urban health services from employers and employees, so that the government can release tax based revenue for preventive and promotive actions for primary health care where coverage is very inadequate and totally absent especially in remote rural and tribal areas.

In influencing the choices that make for better health and lowered financial burden of ill health, the society is typically faced with *three* key challenges. The first has to do with controlling the cost incurred in the provision of health interventions that it supports – be it care, health care regulation, or provision of insurance -- given that resources are limited and face competing demands for their use. The second is to achieve an equitable distribution of the financial burden of ill health and morbidity. This is a direct consequence of the fact that societies are concerned not just about improvements in "average health" but also, especially, about the health and economic welfare of the socially and economically marginal groups in society. A third issue is to ensure the quality of medical care that is provided, because of its central importance to people who need care, and also because of its direct link to the cost-effectiveness of care provision.

Risk pooling initiative for sharing costs among the healthy and the sick leading to insurance schemes act as a substitute for or as supplementary to State provision for minimum uniform services. The well-to-do segment of the population, both in rural & urban areas have acceptability and affordability towards medical care, at the same time cannot be said about the people who belong to poor segment of the society. More than 75 percent of the population utilizes private sectors for medical care. Unfortunately, medical care becoming costlier day by day and it has become almost out of reach of the poor people. Today there is need for injection of substantial resources in the health sectors to ensure affordability of medical care to all. Health insurance seems as an important option, which needs to be considered by the policy makers and planners.

2. Health financing in India

The share of public financing in total health care is just about one percent of GDP compared to 2.8 percent in other developing countries. Beneficiaries are both poor as well as well-fed section of society. Over 80 percent of the total health financing is private financing, much of which is out-of-pocket payments (i.e. user charges) and not any prepayment schemes. Public spending in health care is very low at 17 percent and the National Health Policy (2002) has recognized this. More than 86 percent of healthcare financing is through unplanned for, non-contributory spending.

A number of methods exist for financing health care services - (i) Personal payment (out-of-pocket) (ii) Voluntary insurance (iii) Social insurance (iv) General revenues (v) Charity (vi) Industry and (vii) External financing. In most of the developing countries including India, the first four sources finance the health care service and the last four sources contribute negligible amount. Out of the first four, the former two are private and the later two are public (Sandhya 2005).

While nations declare similar admirable goals to provide their citizens with equal access to a reasonable quality of health care and to prevent health-caused impoverishment, the reality is starkly different. Social health insurance, meant for social security, is one of the principal methods of health financing. Twenty-seven countries have established the principle of universal coverage via this method. In India, the current methods of financing the health care, the under funded government health services and the fee for private health services, are clearly unsatisfactory.

3. Need for the study

Internationally, few studies have examined the relationship between health insurance, health costs, and health care utilization (Dafny and Gruber 2000, French and Kamboj 2002). Most have been observational studies, which analyze outcome differences between insured and non-insured populations. And most of these studies focus mainly on the utilization, and do not capture the aspect of quality of care.

It is needless to say, that the quality of health services provided is an important matter of concern when people seek medical care. Studies conducted in Ghana (1989), Peru (1987), Switzerland (1990) and Zaire region (1989) revealed that quality of health care is a significant factor in influencing 'demand for health care' (Creese 1990) and consequently health care utilization. It may also influence the choice of health facilities. The decision to choose between different health care providers involves evaluating the cost and quality of care in each of the options available. Studies in India show that people spend large amounts out-of-pocket for curative care, by preferring to visit private, rather than public health facilities (Sundar 1995, Visaria and Gumber 1994). It has been observed that higher-priced options, such as treatment in the private sector, are usually associated with higher quality of health care. There has been substantial analysis on the quality of the public health care services and the consensus is that, '…this is not as inexpensive as it seems, is often not of the best quality and is also inaccessible' (Gupta and Dasgupta 2000). The private sector on the

other hand is much more expensive, but easily accessible (Dreze and Sen 1995, World Bank 1995).

The choice of facility reveals that the vulnerable sections still have a higher probability of visiting the government facilities, mainly because of price differentials. If they end up visiting private facilities, it imposes a severe economic burden on them, and on the other hand if they go to the government facilities, coupled with the issue of availability and accessibility, quality of medical care become important (Gupta and Datta 2003). It is not surprising that with enrolment in health insurance schemes, 'consumers hope to get better quality of health care'. This has implications about what kind of system the health insurance companies would want to bring with them, which would ensure high quality (Gupta 2000). According to Ahuja (2004), health insurance, which strengthens the demand, makes sense only when the supply of health care is reasonably well developed and where this is not so, health insurance loses its importance. When there exists any facility-based insurance mechanism, but the issue whether quality of care receives priority or it is the risk-reduction/cost minimization, remains unexplored.

The present study focuses on Employees State Insurance Scheme (ESIS), which is one of the major flagships of the health insurance scheme directly run by the Government. ESI Scheme has a wide reach and the highest coverage among all the existing health insurance schemes in India. In order to understand the effect of risk-sharing towards better utilization of public health services, a careful study of the functioning of such scheme is called for. Unlike most other public and private sector health insurance schemes, there are service facilities designed for the ESI scheme members and their families. This in turn may make difference in ESI beneficiaries' health seeking behaviour with that of general population or of those having some form of insurance scheme other than the ESI scheme. Feasibility of such publicly provided health insurance schemes in India, catering to the specific requirements of the disadvantaged sections of the population needs to be studied as a health financing option for a healthy nation of tomorrow.

4. Objectives

The study intends to explore the potential role of health insurance in health care utilization and quality of care. With this broad objective, the study intends to concentrate on the following specific objectives:

- To observe the state wise variation in health insurance coverage and to analyze the extent of health care service utilization and associated health care costs by insurance status.
- To assess the impact of insurance schemes on health care utilization and financial protection
- To examine the effectiveness of health insurance to protect households against financial catastrophe by comparing the catastrophic impacts among those with and without such cover.
- To investigate the quality of care provided in the health facilities under the ESI scheme and whether it affects health care utilization among the insured or not

5. Hypotheses

- Insured are more likely to seek health care than those of non-insured
- Risk-sharing mechanism has a positive impact on health care utilization and financially protects households from the burden of health care costs
- Risk-reduction outweighs quality of care among those who are insured

6. Data

The paper utilizes secondary as well as primary data. The secondary data sources are the dataset of World Health Survey (2003) and National Family Health Survey-3 (2005-06). The core objective of the WHS survey was to strengthen the health information system of the country and develop the capacity of policy makers to monitor health system performance in terms of three major components namely burden of disease, health financing and health system performance. The survey provides data on a wide range of population health indicators such as health financing, health insurance, human resources for health, health state valuation, risk factors, mortality by cause, morbidity prevalence, reproductive and sexual health care and health system responsiveness relating to inpatient and outpatient care. In NFHS, for the first time information on health care prepayments or health insurance of household members have been collected from the head of the household and is given in the household data file. Unfortunately from the NFHS data, one can not link the insurance status with the utilization of health care services. In order to examine the linkage, a primary survey was conducted in two districts of West Bengal regarding health, health care utilization and quality of care. Primary data was collected using a two-stage stratified random sampling

procedure from 400 households and following an exit interview technique information regarding quality of care was gathered from 150 patients who availed treatment from the ESI service dispensaries and hospitals to capture the domain of client satisfaction and quality of care provided by such public health facilities.

7. Methods

To accomplish the **first objective**, descriptive statistics, bi-variate analysis and appropriate testing procedure has been adopted. Proportion of health care expenditure to total expenditure has been calculated to understand the extent of catastrophic heath care cost or the burden on the household.

Utilization data are generally analyzed by using ordinary least squares (OLS) regression, but they do not satisfy the standard assumptions for that method. Generally, there are a large number of non-spenders, who do not use health care in the reference period. Health care utilization variables are usually not normally distributed, the distribution contain a long, heavy right tail due to very small number of very high spenders. The distribution often looks more like a lognormal distribution (Diehr *et al.* 1999, Jakab *et al.* 2004). When the goal is to understand how health insurance influence health care utilization, a two-part model (Duan *et al.* 1983) seems best because it permits to distinguish factors that affect the propensity to use any services from factors that affect volume of utilization once the person has entered the system (Diehr *et al*. 1999). A conceptually attractive way to address the concentration of zero values is the two-part model, in which one equation predicts the probability that a person has any use and a second equation predicts the level of use (usually on the log scale) for users only. The expected level of use for an individual is then calculated by multiplying these two estimates together. In the present study, to empirically assess the impact of scheme membership on health care utilization and financial protection in the **second objective**, a two-part model has been used. The first part of the model analyzes the determinants of using health care services. The second part analyzes the determinants of health care expenditures for those who report any health care use. Another advantage of taking this approach is that using health expenditure alone as a predictor variable for financial protection does not allow capturing the lack of financial protection for those who choose not to seek health care because they cannot afford it. The framework can be extended to a four-part model, in which the probability of hospital use is estimated among all users and then the costs for users who are hospitalized and for those who are not, are estimated separately.

In the two-part model, part one is a binary logit model, which estimates the probability of an individual's visiting a health care provider. Mathematically,

$$\text{Prob (visit} > 0) = x\,\beta + \varepsilon$$

Part two is a log-linear model that estimates the incurred level of out-of-pocket expenditure, conditioned on positive use of health care services. That is,

$$\log(\text{out-of-pocket-expenditure} \mid \text{visit} > 0) = x\,\gamma + \mu$$

where, x represents a set of individual and household characteristics that are hypothesized to affect individual patterns of utilization and expenditures. β and γ are vector of coefficient estimates of the respective models, and ε and μ are error terms.

In the **third objective**, the incidence and intensity of catastrophic health care costs has been measured. By principle, no household ought to spend more than a given fraction (say, z_{cat}) of their income on health care and above which threshold expenses are to be considered as 'catastrophic'. The obvious summary measure of the extent to which a given sample of individuals has been exposed to catastrophic expenses would be the number (or fraction, say H_{cat}) of individuals whose health care costs as a proportion of income exceeded the threshold z_{cat}. This is called *catastrophic payment headcount*. Let T_i denotes the health care spending and x_i denotes the pre-payment income, then T_i/x_i is the ratio of health care spending to income. Also let O_i be the catastrophic overshoot such that

$$O_i = \frac{T_i}{x_i} - z_{cat} \quad \text{, if } \frac{T_i}{x_i} > z_{cat}$$

$$= 0 \qquad \text{, otherwise}$$

and E_i be an indicator such that $E_i = 1$, if $O_i > 0$

$= 0$, otherwise

Then the *catastrophic payment headcount* is equal to

$$H_{cat} = \frac{1}{N}\sum_{i=1}^{N} E_i = \mu_E \quad \text{, where N is the sample size and } \mu_E \text{ is the mean of } E_i.$$

The height by which payments (as a proportion of income) exceed the threshold z_{cat} is captured by *catastrophic payment gap* (or excess) and dividing this by the sample size, the average excess (G_{cat}), is obtained. Thus, the intensity or severity of catastrophic payments is the average '*gap*' (or excess) of catastrophic payments and obtained as

$$G_{cat} = \frac{1}{N}\sum_{i=1}^{N} O_i = \mu_O \qquad \text{where } \mu_O \text{ is the mean of } O_i.$$

The *mean positive gap* is

$$MPG_{cat} = \sum_{i=1}^{N} O_i \Big/ \sum_{i=1}^{N} E_i = \mu_O / \mu_E$$

Therefore, $\mu_O = \mu_E . MPG_{cat}$. In other words, the overall mean catastrophic '*gap*' equals the fraction with a positive gap times the mean positive gap.

In order to fulfil the **fourth objective**, a composite index of quality of care has been constructed to depict the quality of care provided in the ESI facilities. Suitable multivariate techniques have been used to examine the effect of quality of care on health care utilization among the ESI beneficiaries.

8. Results and discussion

8.1 Health insurance coverage in India

Health insurance coverage in India is far from satisfactory, despite the existence of a large population living below the poverty line and/or illiterate, which lives under great health risks. Existing insurance is largely limited to a small proportion of people in the organized sector (IIPS and WHO, 2006). NFHS-3 asked the respondent to the Household Questionnaire whether any member of the household is covered by a health scheme or health insurance. Health insurance schemes can be categorized as follows: (1) mandatory or government run schemes such as the Employees State Insurance Scheme (ESIS) or Central Government Health Scheme (CGHS), (2) schemes offered by nongovernmental organizations or community based health insurance, (3) employer-based schemes, and (4) voluntary health insurance schemes or private-for-profit schemes.

Findings from NFHS-3 show that only a small proportion of households (5 percent) have at least one usual member covered by a health scheme or health insurance. The state wise percentages shows that in Bihar, Uttar Pradesh and Orissa, less than two percent of households are having a member covered by any health scheme or health insurance plan, where as in Gujarat and Karnataka, more than 10 percent of households are having a member covered by any health scheme or health insurance (Figure 1).

The proportion of urban households covered under a health scheme or insurance is 10 percent, compared with only 2 percent of rural households. Higher coverage is reported in households falling in the highest wealth quintile (16 percent). Among households in the lowest three wealth quintiles, the proportion having a household member with health

insurance does not exceed two percent (Figure 2). Survey data clearly highlight the poor health insurance coverage in the country, a situation urgently requiring remedial steps.

Respondents who reported someone in the household to be covered by a health insurance scheme were asked to identify the type of scheme or insurance. While it was possible to report more than one health insurance scheme, 98 percent of households with coverage reported only one type. Those with insurance are most likely to have privately purchased the insurance (28 percent) or to be covered under an ESIS (26 percent). The third most common form of coverage is under a CGHS (20 percent). The remaining households with insurance are reimbursed by their employer (12 percent), covered under some other insurance with their employer (6 percent), or included in a community health insurance programme (5 percent). The type of health scheme or insurance coverage clearly indicates the predominance of mandatory schemes and employer-based schemes such as the ESIS, CGHS, insurance through employers, and medical reimbursement from employers rather than voluntary health insurances/schemes. Private providers of health insurance have only recently emerged as big players in the Indian health insurance market, after liberalization of the economy.

8.2 Health insurance, health expenditure and health care utilization: Evidence from WHS data

Health subsidies are not particularly well targeted to the poor in India, especially those living in rural areas. The household expenditure on health accounts for a major share of about 70-80 percent of the total health expenditure in India. Rural households in India bear the maximum burden as they account for about 85 percent of the total household expenditure on health (Sanyal 1996). The lack of appropriate and consistent information on out-of-pocket expenditure is found to be the prime reason for the exclusion of this important category from the health policy planning in India (Selvaraju 2000). The World Health Survey collected data on household expenditure on various services of health during the last one month. Out of total health spending maximum is spent on drugs. According to the WHS, household spending on health increased at higher income quintiles and there is systematic increase in average household health spending with increasing income quintiles (Figures 3 and 4).

The scarcity of relevant data in India restricts us to understand the relationship between the two facts - having any health insurance and utilization of health care services. Despite that, an attempt has been made to visualize the issue with the help of World Health Survey (WHS) data. The WHS collected information on diseases like Angina, Arthritis,

Asthma, Diabetes, Depression etc. It is seen from Table 1 that although the prevalence of these diseases is low, these are common in the population and the insured and uninsured are equally affected. There is a wide gap between the proportion diagnosed and those who got treatment for those diseases. The survey indicates that coverage for these diseases is not uniform. The discrepancy in receiving treatment among the insured and uninsured is clearly visible from the table, which shows for treatment of diseases like Angina, Arthritis and Asthma, there is almost 20 point percent difference among the insured and uninsured. In the case of depression, the insured are three times more likely to be covered by treatment.

The World Health Survey asked questions to women in the ages 18-49 about maternal and child health care services availed for births during the five years prior to the survey. The utilization of maternal health care services according to insurance status of women is given in Table 2. At all India level, while 65 percent of insured women[1] received antenatal care[2], and 61 percent of insured women received delivery care[3], the percentages reduces to only about 48 and 34 in case of uninsured women. The result of logit regression (Table 3) shows that, although the insured are more likely to avail antenatal care or delivery compared to those of uninsured, the insurance effect is not statistically significant (controlling for some important covariates).

8.3 Impact of insurance status on health care service utilization: Evidence from primary data

The WHS collected information on certain illness/morbidities, it did not cover general or common morbidities like fever, cold and cough, malaria, diarrhoea etc. Therefore it is not possible to examine whether insured people are utilizing more the health facilities for such common diseases or ailments than those of uninsured. Moreover, the important point is that all the health insurance policies are typically designed and the natures of benefits are different. Therefore, I opine that, it will not be worth examining the impact of health insurance as a whole on the health care utilization.

From the primary data, the impact of the ESI scheme membership on the utilization of health care services for outpatients could not be examined because of the fact that irrespective of the insurance status, among the people who reported any illness or injury in the reference

[1] Women belonging to household having any sort of health insurance scheme (mandatory or voluntary)
[2] Three times pregnancy check up and blood pressure measurement or testing of blood sample or complications in pregnancy.
[3] Care for delivery received at the hospital or maternity house and other type of health facility (attended by specialist such as gynaecologist, obstetrician, surgeon etc).

period of one year; most of them visited any health facilities either formal or informal. There is only 1.3 percent point difference in the utilization between the ESI-Insured persons and the Uninsured.

Therefore, the impact of scheme membership on the utilization of health care services has been analyzed for inpatient care or hospitalization only. Medical treatment of an ailing person as an inpatient in any medical institution having provision for treating the sick as inpatients is considered as hospitalized treatment. There were 52 cases of hospitalization in the reference period of 365 days preceding the survey, and gives an estimate that out of every 1000 persons, 29 persons were hospitalized during a period of 365 days. This proportion is quite comparable with the corresponding estimates of hospitalization per 1000 population for West Bengal as found in the 60^{th} round of NSS dataset (23 and 35 per 1000 of persons hospitalized in rural and urban areas respectively). The result of logit model suggest that controlling for some important individual level, household level and community level characteristics insured people are two times more likely to be hospitalized for any illness and the odds ratio is statistically significant (Table 4). To capture financial protection, out-of-pocket expenditure has been taken as an indicator variable. The results of the log linear regression indicate that the annual hospital costs per person vary somewhat with changes in the variables included and the removal of outliers. In some models, hospital expenditures are significantly lower among ESI-insured. Consistent in the various iterations of model are the findings that hospital expenditures vary directly and significantly with income tercile and significantly higher for private than public hospitalizations.

8.4 Catastrophic effect of health care payments

The out-of-pocket payments as a fraction of pre-payment income was measured and thresholds at 2.5, 5 and 10 percent were set. The results demonstrate that as much as 36 percent of the insured households of the sample recorded out-of-payments in excess of 10 percent of their pre-payment income and 50 percent of the uninsured sampled households spent such payment (Table 5). Inevitably, in both the groups, the proportion of sample exceeding the threshold (H_{cat}) falls as the threshold (z_{cat}) is raised. The mean positive gap (MPG_{cat}) has also increased as the threshold increases for both insured as well as uninsured. The table also suggests that at the lower thresholds, the incidence of 'catastrophic' health costs is more concentrated among the poor and by contrast, at the higher thresholds, the incidence of 'catastrophic' health costs is more concentrated among the rich.

8.5 Health insurance and quality of care

After drawing a line of thinking on the importance of health insurance and relationship between insurance coverage health care utilization, the following section focus exclusively on the Employees State Insurance Scheme (ESIS) mainly to test the hypothesis – quality of care outweighs risk-reduction. As mentioned earlier that information regarding quality of care in the ESI facilities have been collected from 150 patients who availed the facility of the selected ESI hospital and dispensaries, following an exit interview technique in two districts of the state of West Bengal. Table 6 shows the percent distribution of respondents who availed treatment facility in the ESI service dispensaries and hospitals. Majority of them are Hindu, belongs to general category, in the working age group and male. Two-third of the patients came from a distance of more than 5 kilometers for treatment.

The patients who came for treatment to the ESI service dispensaries were asked *"Are you satisfied with the ESI scheme?"* Surprisingly only about 35 percent responded positively which is really a serious matter of concern (Table 7). In response to the question *"In presence of other facility, would you have still chosen the ESI facility?"*, only 15 percent of the respondent said affirmative. Those who responded that they are not satisfied with the ESI facility were asked about the prime reasons for choosing ESI facility for treatment. Among the responses, 'treatment is free of cost' (68 percent) becomes the most important reason followed by 'customary' (35 percent), 'others' (30 percent) and 'medical leave benefit' (26 percent). Therefore it may be said that quality of care outweighs the risk-reduction, or in other words, to the ESI beneficiaries, mostly living in rural areas and with lower economic condition, 'treatment free of cost' is much more important than the quality of services. They do not have the ability or capability to bear the expenses of getting treatment from the private facilities.

There were 14 questions on several aspects of quality of care of services rendered in the ESI service dispensaries. The questions were asked on a three point scale of good, average and poor. As per the ratings of the respondents, most of the parameters got the average rating. Ninety percent of the patients rated 'long' for the waiting time for getting treatment. Around 82 percent and 68 percent of the respondents gave 'poor' ratings to confidentiality/privacy and time spent by doctor for examination/diagnosis. There was a direct question on overall satisfaction. Based on the score values, it comes out that only about six percent of the respondents rated 'good'. On the other hand, when a composite index of

quality of care was computed considering all these 14 parameters, the quality of care in the ESI dispensaries is rated 'good' by one-third of the respondents (Table 9).

9. Conclusion

Out-of-pocket-expenditure accounts for the largest component of total household health expenditure in the country, indicating the inadequacy of public spending and financing health care. The growing reliance on private curative health care even by the poorer people indicates the inability of the state system to cope with the requirements and points to the disturbing possibility that in future even more people will be denied health care because of their inability to pay. There is a need to enhance the effective utilization of existing resources and simultaneously to think of various ways of augmenting such resources. The findings indicate that a majority of households with catastrophic health spending are concentrated in low income deciles and that clearly point towards a higher burden of health spending for the poor households. More than three-fourth of the ailments in these two states and also at the national level are treated by private sources despite higher treatment cost compared to government sources. Findings reveal that in India and all the selected States, insurance coverage is very low and restricted to people of higher income quintiles. Although, regression analysis based on WHS data clearly indicates households having any health insurance scheme tend to utilize health care services more compared to those without any health insurance, the aspect of quality of care also should get equal importance.

Findings of quality of care at the service facilities of a social health insurance scheme reveal that patients are availing the public health facilities only because of non-requirement of money at the time of taking services. They think that the service they are getting is free of cost whereas the fact is that certain proportion of income of the employee is deducted every month as a means of social security. Therefore, question arises about the effectiveness of such health insurance mechanism which fails to protect the households from the burden of out-of-pocket expenditure. It seems that such mechanism is creating a double burden to the employees; on one hand they are bound to pay an amount for ESI and on the other hand, when any member of his/her household falls sick they are utilizing private health facilities paying a higher cost to get good quality of service. However, the paper recommends for some initiatives for awareness and implementation of community based health insurance (CBHI) schemes that may work out as an alternative or supporting option to get rid of the threat of catastrophic health payments and debt-trap.

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Figure 1. Percentage of households covered by any health scheme or health insurance coverage in India and major states, NFHS-3, 2005-06.

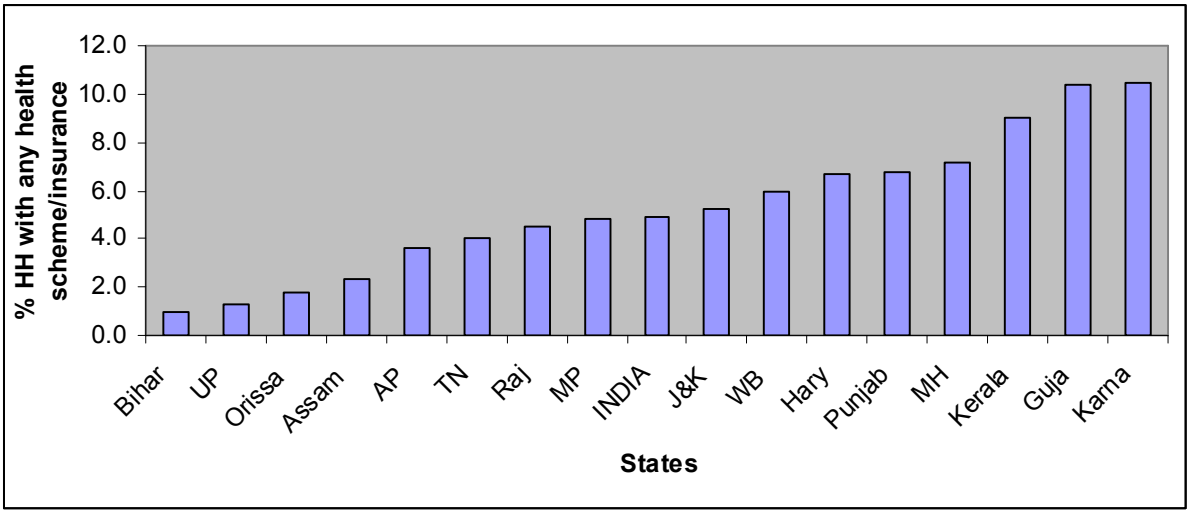
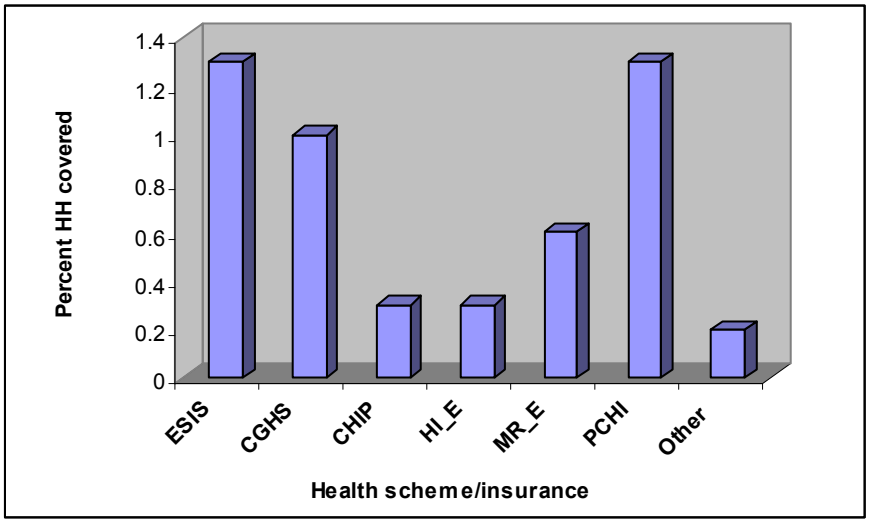


Figure 2. Health insurance coverage by types of health schemes/health insurances, India, NFHS-3, 2005-06.



ESIS: Employees State Insurance Scheme; CGHS: Central Government Health Scheme; CHIP: Commercial Health Insurance Programme; HI_E: Health Insurance provided by Employer; MR_E: Medical Reimbursement through Employer; PCHI: Privately purchased Commercial Health Insurance.

Figure 3. Health insurance coverage by wealth index categories, India, NFHS-3, 2005-06

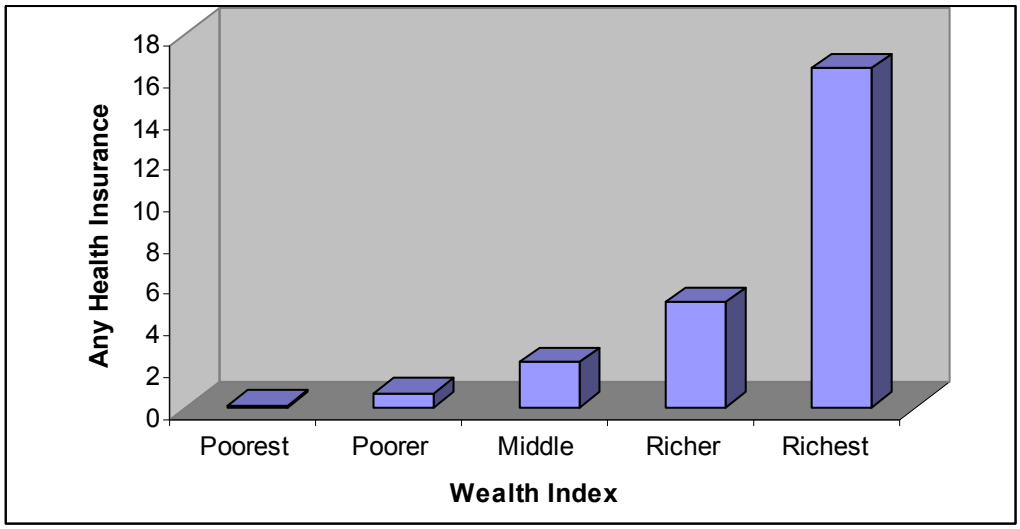


Figure 4. Average household health spending on different items, India, WHS-2003

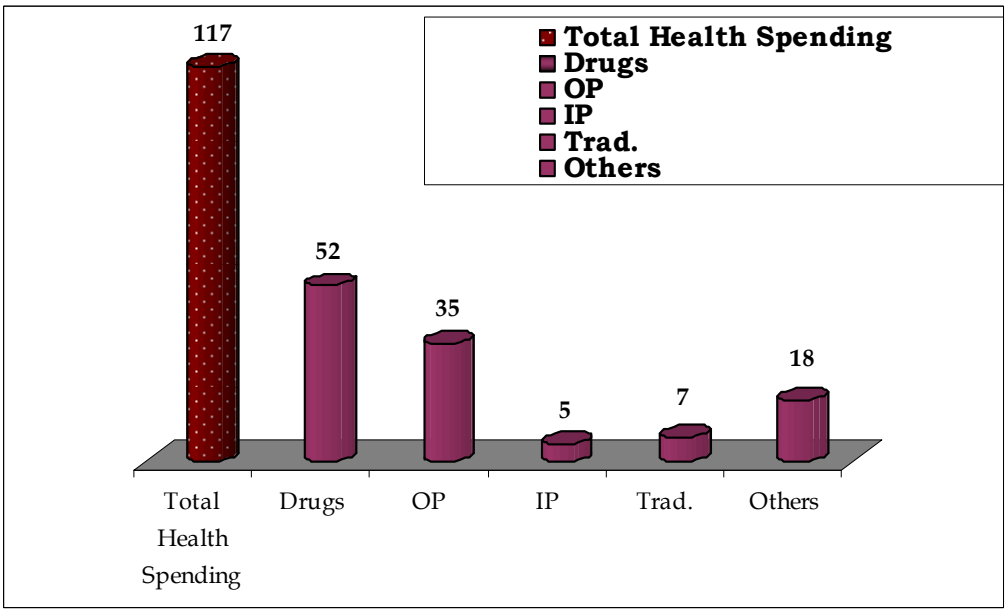


Figure 4. Average household health spending by income quintiles, India, WHS-2003

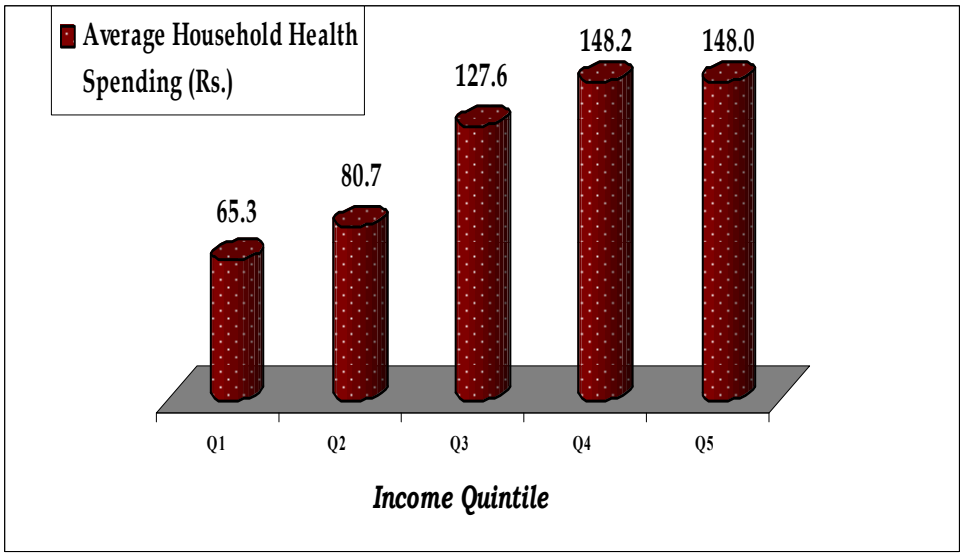


Figure 6. Incidence (headcount) and intensity (or gap) of catastrophic out-of-payments, West Bengal, 2007.

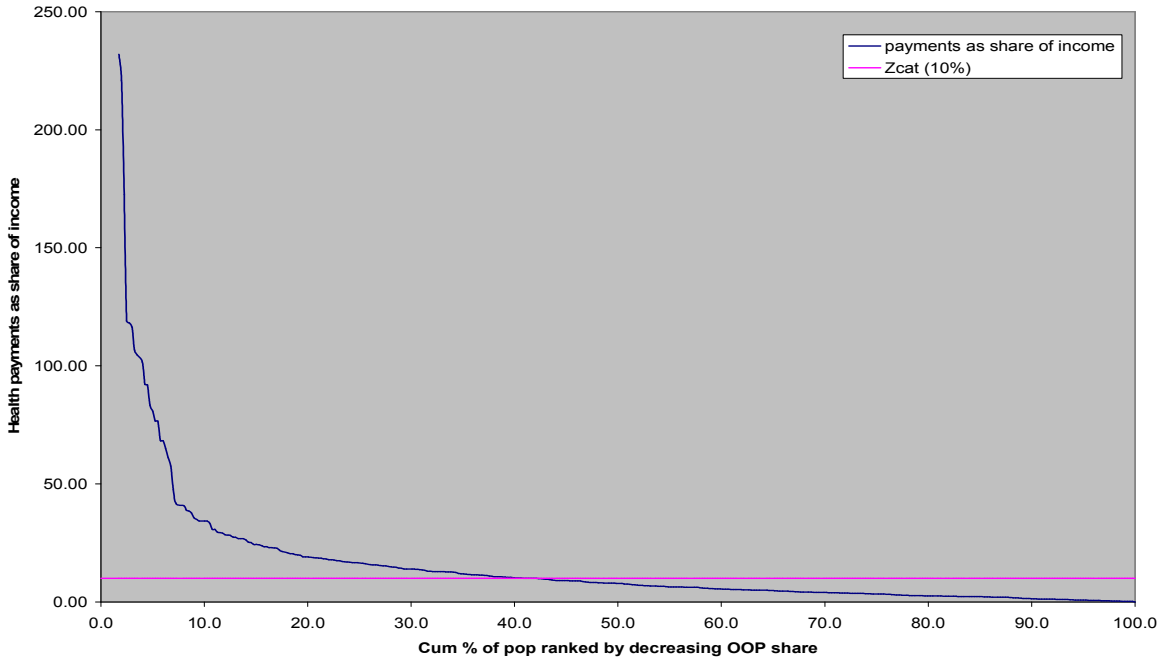


Table 1. Percentage of insured and uninsured population diagnosed and treated for selected ailments, India, WHS-2003.

Insurance Status	Angina	Arthritis	Asthma	Diabetes	Depression
	Need (Percentage Diagnosed)				
Insured	7.7	24.8	7.1	6.8	9.1
Uninsured	8.8	22.0	5.8	2.5	13.1
	Covered (Percentage Treated)				
Insured	88.7	76.5	87.2	84.4	39.1
Uninsured	68.7	60.3	70.9	79.3	12.4

Table 2. Percentage of mothers who received antenatal care in the last five years, India and West Bengal, WHS-2003.

	Mothers who received			
	Antenatal care		Delivery care	
	INDIA	*WB*	*INDIA*	*WB*
Insured	65.0	100.0	61.5	100.0
Uninsured	47.6	59.8	33.8	40.3

Table 3. Odds ratios of antenatal care and delivery care for selected background characteristics, India, WHS-2003

Background Characteristics	Antenatal Care Exp(B)	Delivery Care Exp(B)
Religion (Hindu®)		
Muslim	1.03	0.58*
Others	0.79	1.16
Place of Residence (Urban®)		
Rural	0.48*	0.25*
Age (18-29®)		
30-39	0.78	0.68*
40-49	0.51	0.46
Education (0 Years®)		
1-5 Years	1.87*	1.58*
6-10 Years	2.89*	2.33*
11 & above Years	5.00*	4.50*
Income quintile (Q_1®)		
Q_2	1.02	1.19
Q_3	1.31*	1.59*
Q_4	1.97*	2.50*
Q_5	2.59*	3.99*
Insurance Status (Uninsured®)		
Insured	1.20	1.16

® Reference category; * $p < 0.05$

Table 4. Results of logit regression for hospitalization in last 1 year, West Bengal, 2007.

	Odds Ratio (Exp (B))	*95% CI for Exp(B)*
Insurance status (Uninsured®)		
ESI-Insured	1.803	(1.04, 3.13)

Note: The controlled variables are age, sex, marital status, education of head of the household, religion, caste, household size, income, severity of illness and distance from home to health facility.

Table 5. Incidence (headcount) and intensity (or gap) of catastrophic out-of-payments, West Bengal, 2007.

	Insured			***Uninsured***		
Threshold measures	*2.5%*	*5%*	*10%*	*2.5%*	*5%*	*10%*
Headcount measures						
H_{cat}	77.07%	55.61%	36.10%	81.96%	71.65%	49.50%
Gap Measures						
G_{cat}	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
MPG_{cat}	1.30	1.80	2.77	1.22	1.40	2.02

Table 6. Background characteristics of the respondents who have received treatment facility in the ESI service dispensaries and hospital, West Bengal, 2007

Background characteristics	*Percent*
Religion	
Hindu	72.3
Non-Hindu	27.7
Caste	
SC/ST/OBC	30.5
General	69.5
Age	
< 35	40.4
35-59	48.2
60+	11.3
Sex	
Male	70.9
Female	29.1
Distance from Home (Km.)	
<=5	33.3
5-10	36.9
10+	29.8
N	**150**

Table 7. Percentage distribution of respondents who availed treatment from ESI service dispensaries by various treatment related characteristics, West Bengal, 2007

Characteristics	*Percent*
Consulted anywhere before coming to ESI facility	40.4
Place of last consultancy	
ESI panel doctor	15.0
Govt facilities	25.0
Private facilities	52.5
Chemist/Medical shop	7.5
Reason for choosing ESI for treatment	
Customary	34.3
Trt free of cost	81.8
Facility is nearby	5.1
Facility is of good quality	2.0
To get benefit of leave	10.1
Others	3.0
Waiting time for doctor	
<=1 Hr	65.7
1-2 Hrs	23.2
>2 Hrs	11.1
Time spent by doctor with you	
<=2 Minutes	41.4
2-5 Minutes	50.5
>5 Minutes	8.1
Frequency of using ESI facility more than other facility	32.3
Satisfied with the scheme	
No	61.6
Yes	35.4
DK/CS	3.0
In presence of other facility still chosen this facility	
No	50.5
Yes	15.2
DK/CS	34.3
If not satisfied in ESI services, reason for choosing ESI for trt.	
Customary	34.8
Treatment is free of cost	68.2
Facility is nearby	4.5
To get Medical leave benefit	25.8
Others	30.3
If were not ESI beneficiary, preferred place for treatment	
Only Govt facilities	32.3
Only Private facilities	38.5
Both facilities	29.2
Future preferred place for similar health problem	
Only ESI facility	21.2
Only Non-ESI facility	48.5
Both ESI & Non-ESI facility	12.1
Can't Say	18.2
N	**100**

Table 8. Percentage distribution of respondents who availed treatment from ESI hospital by various treatment related characteristics, West Bengal, 2007

Characteristics	*Percent*
Consulted before coming to ESI hospital	54.8
Place of last consultation	
ESI Panel Doctor	48.0
Private facilities	48.0
Chemist/Medical Shop	28.0
Visit of doctor regular	76.2
Examined in separate room	9.5
Doctors spent enough time	45.2
Doctors listen carefully about health problem	66.7
Prescribed medicine easily available	66.7
Doctor explained properly	32.5
Satisfied with the ESI scheme	57.1
In presence of other facility still would have chosen this facility	29.3
Reason for choosing ESI for trt although not satisfied in ESI services	
Customary	50.0
Treatment free of cost	88.9
Medical leave benefit	33.3
Others	22.2
If were not ESI beneficiary, preferred place for treatment	
Only Govt facilities	52.4
Only Private facilities	11.9
Both facilities	35.7
N	**50**

Table 9. Quality of care in the ESI service dispensaries, West Bengal, 2007

Parameters	*Good*	*Average*	*Poor*
Convenient location of the facility	44.0	46.2	9.9
Availability of doctor/physician	14.3	68.1	17.6
Behaviour of doctors	33.0	51.6	15.4
Behaviour of paramedical staffs	14.3	39.6	41.8
Time of examination/diagnosis	1.1	27.5	68.1
Confidentiality/privacy	1.1	11.0	82.4
Technical competence of doctor	7.7	36.3	2.2
Availability of medicines	9.9	63.7	26.4
Quality of medicine	3.3	48.4	34.1
Cleanliness of surroundings	47.3	50.5	2.2
Special treatment	6.6	64.8	28.6
General comfort	1.1	38.9	50.0
Waiting time for getting treatment	0.0	9.9	90.1
Waiting time for getting medicine	5.5	75.8	18.7
Overall satisfaction	5.5	48.4	46.2
Quality of care Index	**33.3**	**42.2**	**24.4**

Table 10. Quality of care in the ESI Hospital, West Bengal, 2007

Parameters	*Good*	*Average*	*Poor*
Convenient location of the facility	54.8	38.1	--
Availability of doctor/physician/nurse	17.9	74.4	5.1
Behaviour of doctors	30.8	59.0	10.3
Behaviour of paramedical staffs	--	59.0	28.2
Time spent by doctor for examination/diagnosis	--	53.8	41.0
Confidentiality/privacy	--	23.1	64.1
Technical competence of doctor	25.6	17.9	56.4
Availability of medicines	7.7	82.1	7.7
Availability of beds	28.2	53.8	15.4
Availability of diagnostic/surgical equipments	2.6	23.1	25.6
Quality of medicine	2.6	66.7	7.7
Quality of food	2.6	30.8	66.7
Cleanliness of surroundings	--	48.7	51.3
Special treatment	--	20.5	10.3
General comfort		64.1	23.1
Waiting time for getting treatment	2.6	64.1	33.3
Waiting time for getting medicine	2.6	79.5	17.9
Waiting time for getting bed	20.5	66.7	12.8
Overall satisfaction	7.7	66.7	25.6
Quality of care Index	**25.6**	**38.5**	**35.9**