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# Insured yet vulnerable: out-of-pocket payments and India's poor

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Protecting households from high out-of-pocket (OOP) payments for health care is an important health system goal. High OOP payments can push households into poverty and make them vulnerable to catastrophic health expenditures. This study, based in India, aims to: (a) estimate OOP payments for health and related impoverishment across economic groups; (b) decompose OOP payments and relate the contribution of their components to impoverishment; and (c) examine how well recently introduced national insurance schemes meant for the poor are able to provide financial protection. The analysis of nationally representative data from India shows that 3.5% of the population fall below the poverty line and 5% households suffer catastrophic health expenditures. The poverty deepening impact of OOP payments was at a maximum in people below the poverty line in comparison with those above (Rs. 10.45 vs. Rs. 1.50, respectively). Medicines constitute the main share (72%) of total OOP payments. This share reaches 82% for outpatient care, compared with 42% for inpatient care. Removing OOP payments for inpatient care leads to a negligible fall in the poverty headcount ratio and poverty gap. However, if OOP payments for either medicines or outpatient care are removed then only 0.5% people fall into poverty due to spending on health.

These findings suggest that insurance schemes which cover only hospital expenses, like those being rolled out nationally in India, will fail to adequately protect the poor against impoverishment due to spending on health. Further, issues related to identifying the poor and their targeting also constrain the scheme's impact. A broader coverage of benefits, to include medicines and outpatient care for the poor and near poor (i.e. those just above the poverty line), is necessary to achieve significant protection from impoverishment.

**Keywords** India, out-of-pocket payments, impoverishment, health insurance, poor, health payments

## KEY MESSAGES

- Out-of-pocket (OOP) health payments are impoverishing for poor and near-poor populations in India.
- Medicines constitute the majority (72%) share of OOP health payments.
- Free inpatient care provides negligible financial protection against health payments by individuals. Free outpatient care or access to free medicines provides adequate protection against OOP health expenditure.
- Insurance schemes targeting the poor need to have a sufficiently wide coverage (include the near-poor above the poverty line). For adequate financial protection, such schemes should include medicines and outpatient care.

## Introduction

Protecting households from high out-of-pocket (OOP) payments for health care is an important health system goal. High OOP payments can push households into poverty, the magnitude of which varies across countries depending upon how health services are financed. Globally, every year around 150 million people face financial catastrophe and about 100 million suffer impoverishment due to OOP payments made for health care. The majority (more than 90%) of these people reside in low-income countries (Xu *et al*. 2007). India, along with Bangladesh and Vietnam, has some of the highest burdens of OOP payments for health in Asia (van Doorslaer *et al*. 2007). In India, impoverishment due to health payments is substantial; various studies have estimated that between 32–39 million people are pushed into poverty every year due to health payments (van Doorslaer *et al*. 2006; Bonu *et al*. 2007; Garg and Karan 2009; Berman *et al*. 2010).

Financially protecting households from high OOP payments can be achieved either by funding health services through taxes or risk pooling through an insurance mechanism. In India, there is an extensive network of government funded and managed health facilities which provide low-cost preventive and curative health services. However, this system has been ineffective in reducing OOP payments and providing financial protection. Indeed, India's health system is highly privatized: the public sector share of outpatient visits declined from 25% to 20% and its share in hospitalizations declined from 60% to 40% over the decade preceding the year 2004–05 (Selvaraj and Karan 2009). Further, government spending on health has consistently been low at around 1% of GDP (MOHFW 2009).

The situation becomes more acute as only 11% of the country's population is covered by some form of health insurance (Planning Commission 2008). A combination of low health insurance coverage and a dominant fee-for-service private sector in the delivery of curative care services has resulted in a situation where the vast majority (69%) of health spending is financed out-of-pocket. Since 1994–95, health expenditures have grown at 14% and this growth is higher for inpatient care (Lal and Sinha 2005).

This study has the following objectives. First, it estimates OOP payments for health and related impoverishment across economic groups in India. Secondly, it decomposes OOP payments and examines the contribution of their components to impoverishment. Third, it explores how well a recently introduced national social insurance programme, the Rashtriya Swasthya Beema Yojna (RSBY), is able to provide financial protection to the poor.

Various types of health insurance schemes exist in India and can be broadly characterized as community health insurance, commercial insurance and social insurance. Community insurance schemes are typically small-scale operations run by non-government organizations (NGOs) and have a low membership base (WHO 2004; USAID 2008). The coverage under various community health insurance schemes is 30–50 million (WHO 2004). Private health insurance is provided by both public and private commercial health insurers and typically covers only hospitalization costs. Private health insurance covers a small proportion (1.5–2.0%) of the population (WHO 2004; Chaturvedi 2007), but it is expected to grow considerably in the near future. Social health insurance schemes are available for government employees and workers in the formal sector.

Concern over the high OOP payments among the poor and their lack of insurance coverage prompted several initiatives to remedy the situation. Starting in 2003, several insurance schemes that targeted individuals below the poverty line were launched. The Universal Health Insurance Scheme was launched in 2003 and offered hospitalization benefits up to a limit to families below the poverty line (BPL) for a nominal premium. However, it has not attracted a large beneficiary base, with only 34 000 families enrolled in 2005 (MOHFW 2005; USAID 2008). In 2007, the Rajiv Arogyasri Community Insurance Scheme was launched in the state of Andhra Pradesh; the scheme covers around 80% of the state's population, does not require any premium to be paid by beneficiaries and covers hospitalization costs up to a limit at both public and private facilities (ILO 2006).

### Rashtriya Swasthya Beema Yojna (RSBY) and targeting the poor

The recently launched RSBY has rapidly become an important feature in India's insurance landscape. The scheme was launched by the Ministry of Labour & Employment, Government of India (GoI) in October 2007 to provide insurance coverage for hospitalization costs to BPL families (up to five members) in the country's unorganized sector. Each eligible family is given a 'smart card' which allows them coverage up to Rs. 30 000 ($600) per year at both public and private hospitals. The scheme includes cashless attendance for hospitalized care for covered ailments, coverage of pre-existing diseases and transportation costs with a ceiling of Rs. 1000 for the patient. The estimated annual premium per household is Rs. 750 and 75% of this cost is contributed by the central government and 25% by the respective state governments. The beneficiary

has to pay a sum of Rs. 30 per annum as a registration/renewal fee. The scheme plans to cover the whole country by 2012–13.

The method employed in identifying the poor has profound implications for how well the RSBY can reach the poor. Households identified as being BPL are given a card that confers eligibility for a range of targeted welfare programmes. The process of identifying BPL individuals is carried out in several stages. The Planning Commission uses nationally representative consumer expenditure data collected by the National Sample Survey Organization (NSSO) to estimate the poverty headcount in urban and rural areas in each state. This becomes the quota for BPL cards that can be issued in each state. The identification of BPL individuals is done via a BPL census carried out by the Ministry of Rural Development and the state governments. The BPL census, which is carried out once in the 5 years before the start of a new 5-year plan, has over the years used different methods for identifying the poor (MORD 2009). The latest BPL census, carried out in 2002, used a score based ranking method in which rural households were scored on 13 socio-economic attributes (e.g. size of land owned, type of house, indicating their quality of life, availability of clothes, sanitation etc.). Once all households were scored, the poorest were identified for receiving BPL cards within the limits of the quota determined by the Planning Commission poverty headcount estimate (MORD 2009).

## Methodology

Data for this study was taken from the Consumer Expenditure survey (CES), 61$^{st}$ round (July 2004–June 2005) conducted by the NSSO. The CES's are undertaken every 5 years and comprise a nationally representative sample of households. A total of 124 644 (45 346 urban and 79 298 rural) households were interviewed during the survey. The CES collects data on household consumption for various items with a reference period of 30 days preceding the date of interview. However, for items consumed less frequently—clothing, footwear, durable goods, education and institutional medical care—information is collected for a reference period of 1 year preceding the interview date.

Total household consumption expenditure was measured as the monetary value of goods and services consumed in the 30 days prior to the survey date, i.e. the Uniform Recall Period. This was expressed in per capita terms, i.e. monthly per capita consumption expenditure (MPCE).

Information on OOP expenses for health care was collected for both non-institutional and institutional medical expenditure. In this study total OOP payments for health care are analysed, i.e. total of institutional (i.e. inpatient) and non-institutional (i.e. outpatient) medical expenditure. The reference period for outpatient as well as inpatient medical expenditure is taken as 30 days. Information on OOP medical expenditure includes expenditures on medicines, health provider's fee, diagnostics, hospital/nursing home charges, family planning and other medical expenses. OOP payments for medicines included payments made for purchase of medicines for both outpatient and inpatient care. Information on non-medical costs of health care in the form of money spent on transport, food and accommodation is not collected in the CES, and so OOP estimates do not include the full direct cost of treatment.

To examine how OOP payments affect those above and below the official poverty line, we split the sample into two groups on the basis of MPCE: those above (APL) and those below (BPL) the poverty line. Further, the APL population was divided into MPCE quintiles. The poverty line cut-offs used were from the Planning Commission's state-specific poverty lines for urban and rural areas for the reference period 2004–05 (Press Information Bureau 2007). The all-India poverty line is Rs. 356.30 per month for rural and Rs. 538.60 per month for urban areas. This poverty line is different for different states and separate for rural and urban areas (Press Information Bureau 2007).

The impoverishing effects of OOP health expenditure were estimated by calculating the poverty headcount and poverty gap before and after the OOP payments for health were made. The poverty headcount is the proportion of individuals who fall below the poverty line, and the poverty gap is the average amount by which individuals fall short of achieving the poverty line. The methodology followed here has been detailed earlier in other publications (Wagstaff and van Doorslaer 2003; Garg and Karan 2009).

Health care spending is considered catastrophic when it exceeds a threshold, defined in relation either to the household's pre-payment income or the household's capacity to pay (van Doorslaer *et al.* 2007). In this study, a household was considered to have experienced catastrophic payments for health care if health expenditures exceeded 40% the household's non-food expenditure (van Doorslaer *et al.* 2007).

All estimates were weighted. STATA$^{tm}$ version 10.0 was used to carry out the analysis (StataCorp LP, College Station, TX, USA).

## Results

During the reference period of the survey, 62% of all households and 52% of BPL households had made OOP payments for health care. Overall, the poverty headcount ratio increased by 3.5% due to these OOP payments. This increase is larger among rural (3.8%) compared with urban (2.7%) populations (Table 1). The increase in the poverty headcount due to health payments varies across the APL expenditure quintiles. In the APL group, the poorest 20% experienced a poverty headcount increase of 17.5%. This increase in poverty headcount is almost 4 times that of the next APL quintile and 26 times the richest APL quintile. Similar gradients are present in rural and urban populations, and for every APL quintile, the increase in poverty is greater in rural compared with urban areas (Table 1).

The poverty gap increased by Rs. 4 due to OOP payments for health care, and similar increases occur in urban and rural populations. The increase in poverty gap for the BPL group (Rs. 10.45) is substantially larger than in the APL group (Rs. 1.49) indicating that that OOP payment for health deepened poverty the most among the very poor. In the BPL group, the poverty gap increased by Rs. 15.20 in urban and Rs. 9 in the rural population, suggesting that deepening of poverty among the poor due to health care payments was larger for the urban

**Table 1** Impoverishment due to out-of-pocket payments for health across economic groups (2004–05)

| | Rural | | | | | Urban | | | | | Combined | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Headcount | | Poverty gap | | Catastrophic expenditure (%) | Headcount | | Poverty gap | | Catastrophic expenditure (%) | Headcount | | Poverty gap | | Catastrophic expenditure (%) |
| | Pre (%) | Post (%) | Pre (Rs.) | Post (Rs.) | | Pre (%) | Post (%) | Pre (Rs.) | Post (Rs.) | | Pre (%) | Post (%) | Pre (Rs.) | Post (Rs.) | |
| Below poverty line (BPL) | 100 | 100 | 69.90 | 78.88 | 2.53 | 100 | 100 | 135.84 | 151.03 | 2.70 | 100 | 100 | 85.58 | 96.03 | 2.57 |
| Above poverty line (APL) quintiles | | | | | | | | | | | | | | | |
| 1 | 0 | 18.58 | 0.00 | 4.16 | 3.50 | 0 | 14.50 | 0.00 | 5.27 | 2.87 | 0 | 17.52 | 0.00 | 4.45 | 3.34 |
| 2 | 0 | 4.69 | 0.00 | 1.41 | 4.33 | 0 | 2.42 | 0.00 | 1.41 | 2.95 | 0 | 4.10 | 0.00 | 1.41 | 3.95 |
| 3 | 0 | 1.38 | 0.00 | 0.51 | 5.61 | 0 | 0.42 | 0.00 | 0.33 | 2.97 | 0 | 1.13 | 0.00 | 0.46 | 4.87 |
| 4 | 0 | 1.04 | 0.00 | 0.56 | 7.51 | 0 | 0.55 | 0.00 | 0.86 | 3.10 | 0 | 0.91 | 0.00 | 0.64 | 6.22 |
| 5 | 0 | 0.81 | 0.00 | 0.56 | 11.54 | 0 | 0.28 | 0.00 | 0.25 | 4.38 | 0 | 0.67 | 0.00 | 0.48 | 9.37 |
| APL subtotal | 0 | 5.30 | 0.00 | 1.44 | 6.78 | 0 | 3.63 | 0.00 | 1.62 | 3.34 | 0 | 4.87 | 0.00 | 1.49 | 5.80 |
| All | 28.04 | 31.85 | 19.60 | 23.15 | 5.76 | 25.81 | 28.51 | 35.06 | 40.19 | 3.21 | 27.48 | 31.01 | 23.51 | 27.46 | 5.06 |

*Notes*: Pre = without health spending; Post = after health spending.

poor compared their rural counterparts. Among APL quintiles, the increase in the poverty gap was the most for the poorest 20% (Rs. 4.45) and was less than half a rupee for those in the richest 20%. The increase in poverty gap across APL quintiles is similar in urban and rural populations (Table 1).

Catastrophic expenditure on health is incurred by 5% of households, with considerably higher proportions among rural (6%) compared with urban (3%) households. In the BPL group, 2.6% of households incurred catastrophic health expenditures compared with 5.8% in the APL group. Catastrophic spending on health increased progressively with higher economic status ranging from 2.6% in the BPL group to 9.4% in the richest APL quintile. Similar socio-economic gradients were observed in rural and urban households, though for each APL quintile a higher proportion of rural households incur catastrophic expenditures for health care (Table 1).

## OOP expenditure on drugs

Overall, 72% (74% rural and 67% urban) of OOP expenditures on health were on drugs. The share of drugs was considerably higher for outpatient (82%) relative to inpatient visits (42%), a pattern seen in both rural and urban areas and across socio-economic groups. The poor consistently spent a greater proportion of their health expenditure on drugs compared with the better-off: the share of drugs in OOP payments was highest for those below the poverty line (88%) and this progressively declined with rising economic status, with those in the top 20% of the APL quintile spending 62% of OOP payments on drugs (results not shown).

## Strategies to reduce impoverishment due to OOP payments

This section examines the effect of three different scenarios—no OOP payments for drugs, for inpatient and for outpatient visits—on impoverishment (Table 2). The status quo represents the current situation, i.e. when current levels of OOP payments are being made for drugs, inpatient and outpatient care.

If no OOP payments were made for drugs, there is no increase in the poverty headcount (Table 2). The poverty headcount remains the same before (27.48%) and after (27.85%) adjusting for OOP payment for health care. Compared with the status quo (31.01%), which represents the prevalent patterns of OOP payments, there is nearly a three percentage point fall in the poverty headcount. In the APL group, the poverty headcount among the poorest 20% fell from 17.5% (status quo) to 2.2% (no OOP payment for drugs). Further, there was negligible increase in poverty headcount in the remaining APL quintiles. This is seen in both urban and rural populations (results not shown). The poverty gap before (Rs. 23.51) and after (Rs. 23.92) adjusting for OOP payments remains the same. Compared with the status quo (Rs. 27.46), there has been a reduction in the poverty gap by Rs. 4. The most remarkable change in the poverty gap was in the BPL group. After adjusting for OOP payments for health care, the poverty gap in the BPL group increased only by around Re. 1, compared with a nearly Rs. 10 increase in the status quo. For the APL group too, the poverty gap increased by only Rs. 0.07 compared with a Rs. 1.49 increase in the status quo. Similar patterns are seen in both urban and rural areas (results not shown).

**Table 2** Impoverishment due to health care payment under different out-of-pocket payment scenarios (2004–05)

| | Poverty headcount increase (%) under different OOP payment scenarios | | | | Poverty gap increase (Rs.) under different OOP payment scenarios | | | |
|---|---|---|---|---|---|---|---|---|
| | Status quo | No payment for drugs | No payment for inpatient treatment | No payment for outpatient treatment | Status quo | No payment for drugs | No payment for inpatient treatment | No payment for outpatient treatment |
| Below poverty line (BPL) | 0 | 0 | 0 | 0 | 10.45 | 1.30 | 10.35 | 1.41 |
| Above poverty line (APL) quintiles | | | | | | | | |
| 1 | 17.52 | 2.18 | 17.40 | 2.33 | 4.45 | 0.23 | 4.32 | 0.34 |
| 2 | 4.10 | 0.28 | 3.90 | 0.41 | 1.41 | 0.07 | 1.25 | 0.21 |
| 3 | 1.13 | 0.02 | 0.95 | 0.17 | 0.46 | 0.00 | 0.34 | 0.09 |
| 4 | 0.91 | 0.07 | 0.56 | 0.36 | 0.64 | 0.06 | 0.33 | 0.25 |
| 5 | 0.67 | 0.01 | 0.16 | 0.38 | 0.48 | 0.00 | 0.11 | 0.27 |
| APL subtotal | 4.87 | 0.51 | 4.59 | 0.73 | 1.49 | 0.07 | 1.27 | 0.23 |
| All | 3.53 | 0.37 | 3.33 | 0.53 | 3.95 | 0.41 | 3.77 | 0.56 |

**Table 3** Catastrophic health expenditure under different out-of-pocket payment scenarios (2004–05)

| | Percentage of households incurring catastrophic expenditure under different OOP payment scenarios | | | |
|---|---|---|---|---|
| | Status quo | No payment for drugs | No payment for inpatient treatment | No payment for outpatient treatment |
| Below poverty line (BPL) | 2.6 | 0.1 | 2.5 | 0.2 |
| Above poverty line (APL) quintiles | | | | |
| 1 | 3.3 | 0.1 | 3.2 | 0.1 |
| 2 | 4.0 | 0.1 | 3.7 | 0.2 |
| 3 | 4.9 | 0.1 | 4.5 | 0.3 |
| 4 | 6.2 | 0.3 | 5.4 | 0.7 |
| 5 | 9.4 | 1.7 | 6.2 | 2.8 |
| APL subtotal | 5.8 | 0.5 | 4.7 | 0.9 |
| All | 5.1 | 0.4 | 4.2 | 0.8 |

In the second scenario, no OOP payments are made for inpatient care. In this situation, the poverty headcount increase due to OOP for health care is 3.3%. Further, there was negligible reduction in the poverty headcount relative to the status quo (3.5%). This is true for both rural and urban populations across all economic groups. In the poorest APL quintile, the poverty headcount increase with no OOP payment for inpatient care (17.4%) is the same as the status quo (17.5%). The poverty gap increased by Rs. 3.77 and was similar to the status quo. In the BPL group the poverty gap increased by Rs. 10.35 and this is again almost identical to the status quo (Rs. 10.45). Similar trends are observed for rural and urban populations (results not shown) (Table 2). Expenditure on drugs constituted 42% of OOP payments for inpatient care.

In scenario three, there are no OOP payments for outpatient care. In this situation, the poverty headcount increase due to OOP payments for health is only 0.5% and is considerably less than the status quo (3.5%) (Table 2). Among the poorest quintile in the APL group, the increase in poverty headcount was only 2.3%, again much lower than the increase in the status quo (17.5%). Further, the poverty headcount increased by less than 0.5% in the remaining APL quintiles. The poverty gap increased by Rs. 1.41 among BPL, considerably less than the increase in the status quo (Rs. 10.45). In the poorest APL quintile, the poverty gap increased by Rs. 0.34, compared with Rs. 4.45 for the status quo. Similar trends were seen in both rural and urban areas (results not shown). Expenditure on drugs constitutes 82% of OOP payments for outpatient visits, suggesting that the impoverishing effect of OOP payments for outpatient care is largely due to the cost of drugs.

The proportion of households experiencing catastrophic health expenditures falls from 5% (status quo) to less than 1% when there are no OOP payments for medicines or outpatient care. Free inpatient care does not provide such benefits (Table 3). Further, removing OOP payments for inpatient care disproportionately benefits better-off households.

## Discussion

In countries like India where the health system is highly privatized and insurance coverage low, it is critical that people,

particularly the poor, are protected from high OOP payments for health care. Not surprisingly, this study shows that around 60% of all households and around half of BPL households made OOP payments for health care. These payments for health care were directly responsible for the overall poverty headcount ratio increasing by 3.5%, with rural populations bearing the brunt of this increase. Other studies also support this observation (Garg and Karan 2009; Sevlaraj and Karan 2009). These OOP payments also caused a deepening of poverty, particularly among the poorest. The poverty gap for those below the poverty line increased on average by Rs. 10.45 and is substantially larger than that experienced by those above the poverty line (Rs. 1.49). However, the deepening of poverty among the poor due to health care payments was substantially larger for the urban poor compared with their rural counterparts.

The greater vulnerability of the urban poor could be the result of more expensive private care relative to rural areas (Sevlaraj and Karan 2009). Further, doubling of health care costs has been observed over the decade preceding the 2004–05 NSSO survey (Sevlaraj and Karan 2009). Increasing privatization, rising costs of care and inadequate insurance coverage (only for inpatient expenses) ensure that an increasing number of people will keep falling into poverty in the future. If current trends continue, a projected 58.5 million[1] people will fall into poverty due to OOP payments by the end of decade following 2004–05. This makes it improbable that India will achieve the Millennium Development Goal of halving the number of poor.

The introduction of social insurance programmes targeted at the poor, such as the RSBY, are an important step in addressing the impoverishing effects of OOP payments for health, particularly for the poor. By reducing financial barriers, the programme can potentially improve hospital utilization among the poor. Not only does the programme attempt to remedy the situation but its presence is an acknowledgement of the problem. While it is critical that social insurance schemes like the RSBY succeed, the findings from this study suggest that it is unlikely to achieve its objectives in its present form.

### The need to expand programme benefits beyond inpatient care

An important constraint in the RSBY's effectiveness is that scheme benefits cover only payments for inpatient care. Findings from this study show that OOP payments for inpatient care are not the most important source of impoverishment. Expenditures on drugs claim around three-quarters of OOP payments for health and constitute 80% of spending on outpatient visits, but less than half of spending on inpatient admissions. Further, the share of drugs in OOP spending was highest for those below the poverty line (88%) and progressively declined with rising economic status, but always commanded a majority share of OOP health spending. Other studies also report that non-hospital costs are more impoverishing than hospital costs (Wagstaff and van Doorslaer 2003; van Doorslaer *et al*. 2007; Vialle-Valentin *et al*. 2008). Although hospitalization is typically a costly event, a cost-of-illness study on the rural poor in India shows that hospitalization constitutes 11% and medicines 49% of the total aggregated cost of care, indicating the huge financial burden on households due to medicines (Dror *et al*. 2008).

As a single event, inpatient treatment is more costly and more likely to have a greater financial shock compared with outpatient expenses. However, the large share of outpatient costs in the aggregate will certainly have a substantial impoverishing effect on households (Berman *et al*. 2010), even though households may find it easier to cope with these payments in the short term. More simply, the substantial money spent on outpatient treatment by households precludes spending on other consumption items thereby diminishing welfare. Many poor households are unable to cope with outpatient spending; around 20% (25%) of untreated illness episodes in urban (rural) areas are untreated due to financial constraints (Selvaraj and Karan 2009). Since medicines constitute a majority share of OOP payments, any strategy to substantially reduce the burden of OOP payments would necessarily need to address the cost of medicines.

Reducing OOP payments for drugs has remarkable effects on reducing impoverishment due to OOP payments for health care. Findings from this paper suggest that removing OOP payments for drugs and for outpatient visits (which is mostly expenditure on drugs) have the biggest impact on reducing impoverishment. In contrast, removing OOP payments for inpatient care has a negligible impact. These findings are not surprising. Coverage of hospital expenditures benefits only those who use inpatient services at hospitals. For poor families, catastrophic health expenditures and impoverishment are mainly the result of paying for relatively low cost items like drugs and ambulatory care, which over time add up to substantial amounts (Knaul *et al*. 2006).

There are several reasons for the non-inclusion of outpatient and drug (for outpatients) costs in the RSBY. For one, the potential for fraudulent claims is high given that there is little regulation of the private sector (where the majority of outpatient visits take place) and the government has limited capacity for oversight. An example of this is the recent revocation by public sector insurance companies of the cashless hospitalization facility at several leading private sector hospitals in India because of artificially inflated costs (*Hindustan Times* 2010; *The Times of India* 2010). Supplier-induced demand is another deterrent to including outpatient costs and drugs. With little government oversight of the private sector and poorly informed patients, there is considerable opportunity for supplier-induced demand to increase patient visits and drug consumption which will increase costs substantially. In addition, this can be harmful to the patient too. Further, including outpatient treatment in the RSBY would automatically lead to a substantial increase in programme costs, which may not be affordable and financially sustainable.

Insurance schemes targeted at the poor and covering both outpatient and inpatient care provide better financial protection against impoverishment. Examples include the Universal Coverage scheme of Thailand and the *Seguro Popular* of Mexico (Knaul *et al*. 2006; Limwattananon *et al*. 2007). The Universal Coverage scheme in Thailand covers both inpatient and outpatient care and co-payments only for medicines not included in national essential drugs list. Following the implementation of the scheme, reductions in both impoverishment and catastrophic health spending were observed especially among poor and near poor (Somkotra and Lagrada 2008).

In Mexico, like the RSBY in India, *Seguro Popular* focuses on the poor and uninsured. Evidence that costs of ambulatory care and medicines are impoverishing and catastrophic to poor households led to coverage of these items under the scheme. Expansion of *Seguro Popular* resulted in reduction in both impoverishment and catastrophic expenditure by households on health (Knaul *et al*. 2006).

On the other hand, the experience of insurance schemes with an exclusive focus on hospitalization has been problematic. Vimo-SEWA in India is an integrated life, health and asset insurance scheme for women and their families in informal employment. About 40% of the claims are for illnesses that do not require hospitalization. The focus on hospital benefits also breeds unethical practices like unnecessary hysterectomies; in Vimo-SEWA the average age for hysterectomies is 37 years and they top all the claims (Desai 2009).

## Poverty lines and the poor

The focus of the RSBY on individuals living below the poverty line in theory precludes those who are above it from receiving any benefits. The findings of this study show that around 5% of those above the poverty line fall into poverty due to health payments. This translates to approximately 34.6 million individuals, and of these, 24.9 million are from poorest 20% just above the poverty line. Thus, by strictly focusing on those below the poverty line, the RSBY ignores the impoverishing effects on those who are slightly above the line but are doubly deprived because they are economically vulnerable but ineligible for a variety of targeted welfare schemes.

The method employed in identifying the poor has profound implications on how well the RSBY can reach the poor. Households identified as being below the poverty line are given a BPL card which confers eligibility for programme benefits. However, methodological and implementation issues concerning the poverty line itself compromise how well the RSBY can reach the poor.

The poverty line itself limits coverage of the poor. The poverty line used by the Planning Commission reflects the cost of purchasing the minimum calories required (2100 Kcal/day for urban areas and 2400 Kcal/day for rural) for a person to function normally. This line was determined in the 1970s and is continually adjusted for inflation. However, recent studies (Deaton and Dreze 2008; MORD 2009) have shown that this inflation-adjusted poverty line grossly underestimates poverty. With the calorie consumption metric, the percentage of population which consumed less than the minimum calorie requirement (76%) in 2004–05 was actually 2.7 times that of the inflation-adjusted poverty line (28%) (Deaton and Dreze 2008; MORD 2009). Even by the minimalist caloric requirement definition of poverty, a substantial number of the poor are ineligible for targeted interventions like the RSBY.

A second source for omission of the poor lies in the disjointed methodologies adopted by the Planning Commission and the states for identifying the poor (MORD 2009). The Planning Commission uses information on consumer expenditure from nationally representative household surveys, while the BPL survey employed by the states uses an asset scoring method. These methodological differences result in different, though not necessarily mutually exclusive, households identified as being below the poverty line.

A third source of omission lies in the way BPL cards are distributed. The BPL card is issued by government functionaries often with little objectivity and influenced by political and other considerations (MORD 2009). Consequently, the households that ultimately receive the BPL cards may not be poor and many of the poor may not receive BPL cards, thus excluding them from programme benefits. One study estimated that 61% of the households identified as poor by the Planning Commission standard did not possess a BPL card (Himanshu 2008). Further, states in which a bulk of India's poor reside, such as Bihar, Madhya Pradesh, Orissa and Uttar Pradesh, report large-scale misuse of the distribution of BPL cards, thus severely undermining the ability of programme benefits to reach their target population (Ram *et al.* 2009).

The estimates of household health expenditures and impoverishment presented in the study are subject to certain caveats. First, the analysis presented is likely to underestimate health expenditures and impoverishment. The source of this underestimation is the non-inclusion of non-medical direct costs (expenditures on food and transportation incurred by the patient and their attendants) and of other indirect cost items (such as lost wages/income of the patient and the attendant) that are typically incurred by households in the course of care seeking. Second, estimates of catastrophic expenditure would be different if the threshold for catastrophic health spending is varied. This study has defined catastrophic health expenditure as exceeding 40% of households non-food expenditure, which is the convention adopted by several studies (Xu *et al*. 2003; Thuan *et al*. 2006; Bonu *et al*. 2007; Xu *et al*. 2007; Sun *et al*. 2008).

Another limitation is that the method for measuring impoverishment used in this study assumes that household spending on health reduces non-medical consumption (which defines household welfare), and that in the absence of health care payments, non-health consumption will increase by the amount of health spending. However, households often fund health spending by borrowing or selling assets, in which case, the apparent reduction in household consumption expenditure in the presence of health payments can be partly or fully negated (Flores *et al*. 2008; Berman *et al*. 2010). Not factoring in financing mechanisms can lead to overestimation of impoverishment. One study estimates the overestimation to be around 17% of individuals and households. Because the CES survey used in this analysis does not collect information on financial coping mechanisms, we are unable to correct for this. In general, the main messages in the paper will not be affected by not factoring in financial coping mechanisms.

Because information used to estimate impoverishment due to health care payments comes from survey data, all estimates of impoverishment are necessarily susceptible to recall bias. However, while shorter recall periods give more reliable estimate of OOP payments for health than longer ones, they also underestimate the OOP payments due to lower incidence of health service utilization in a shorter time period (Somkotra and Lagrada 2008). This study uses a reasonably short period of 30 days for both inpatient as well as outpatient care and so we do not expect the recall bias to be too large.

In India, insurance schemes like the RSBY which focus on the poor are an important new initiative to reduce the impoverishing effects of OOP payment for health. In a health system environment which is dominated by a fee-for-service private sector, the success of such initiatives is critical for reducing impoverishment due to health care payments and encouraging health care utilization among the poor. To be able to achieve these objectives, schemes like the RSBY need to be more expansive in the benefits they offer and in defining their target population. Including drugs in the programme benefits and not limiting beneficiaries to those below the poverty line will substantially improve the capacity of these insurance schemes to reduce impoverishment related to health spending.

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## Conflict of interest

None declared.

## Endnote

[1] Author's calculation based on estimates from Sevlaraj and Karan (2009).

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