Catastrophic Health Care, Poverty and Impoverishment in the Philippines

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Submitted by

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Abstract

The paper attempts to describe catastrophic health spending and its impact to poverty in the Philippine setting. It focuses on the role of out-of-pocket payments for health care as a springboard in the analysis of measuring the magnitude and analyzing the extent of damage of catastrophic health expenditures. It also explores the scope and trends of these spending by different socioeconomic indicators such as household headship, agricultural indicator and regional group. More importantly, it delves into trends over time and among different income groups. It also employs several quantifiable measures and tools in determining the extent of “catastrophic” incidence and intensity to determine the effects on poverty. Lastly it looks into the state of impoverishment after incurring these payments. The results indicate that in general households belonging to higher income groups are more vulnerable to catastrophic health spending and households belonging to lower income groups are more prone to impoverishment.
1 Introduction

*It’s the world’s poor who die earlier.*

This statement taken from a review of World Bank of Millennium Development Goals (MDG) for Health should not be taken with a grain of salt. Rates of mortality and malnutrition tend to be much higher among the world’s poor. The poor in general suffer from far higher levels of ill health, mortality, and malnutrition than do the better off; and their inadequate health is one of the factors keeping them poor or for their being poor in the first place. In the local scene, several MDG indicators such as reducing prevalence of underweight children, incidence and death rates of certain diseases such as tuberculosis and improving accessibility to water and sanitation are still far from targeted levels.

In addressing this problem there should be at least an involvement of public and private money and resources. Looking at the national figures, unfortunately health expenditures in the Philippines come as 3.2% of GDP as of 2003 which is way below the average world percentage level and the standard percentage level for developing countries set by World Health Organization (WHO) at 10.2% and 5% of GDP respectively. On a per capita basis, the country’s spending on health is only $3.8 per capita as compared to world standards of $588 per capita according to World Bank.

What accounts for this measly level of expenditures is a mixture of different sources: (1) local and national government through general taxation; (2) social health insurance such as the Philippine Health Insurance Corporation (PhilHealth), the Government Service Insurance System (GSIS), the Social Security System (SSS), the Overseas Workers and Welfare Administration (OWWA) and Employees
Compensation Commission (ECC); (3) voluntary or private health insurance from health maintenance organizations (HMOs), employer-based plans and from private schools and (4) out-of-pocket payments which are payments made by households at the point they receive health services. Typically these payments include doctor’s consultation fees, purchases of medication and hospital bills.

Figure 1 presents a trend distribution of health expenditures by these sources of funds. For 1991-2004, it is observed that almost half of the total sources of funds are from out-of-pocket expenditures. For these years, on the average, for every P100 expenditure for health care, private households shelled out P46 or almost half the amount from their own pockets, while the social health insurance spent only P8. The rest was paid for by government (P35) and other private health insurance sources (P11). This means that the financial burden on health expenditures remain to individual families at almost half a cost for each peso spending.

However, as Solon [1999] pointed out, the household, through the out-of-pocket expenditures, is the least effective and most inefficient health insurance institution. Family income and size limit the resources that can be pooled. Since members often share or are exposed to similar health risks, the family has limited risk pooling capacity.

In spite of the increasing support of central and local and government units and involvement of private and social health insurance, there is no downward trend in the share of out-of-pocket expenditures in these recent years. This trend is not unusual when compared to other Asian developing countries; their share of government health
spending has been decreasing in the last 10-20 years not necessarily due to budget cuts per se but due to out-of-pocket spending increasing at a faster pace.

It is imperative that out-of-pocket health expenditures should be explored in detail for policy implications. The reliance on out-of-pocket expenditures by households, especially the poor households, shall present a problem especially if there are catastrophic health payments that may push them further below the poverty line and to a state of impoverishment.

The paper attempts to discuss catastrophic health care and its effects on impoverishment and poverty. The second section discusses the scope of catastrophic health care, its causes and consequences. The third and fourth section describes the data and presents the methodologies used in analyzing the effect of catastrophic health care in out-of-pocket health expenditures. The last two sections present the results and conclude with the main points in the study.

2 Catastrophic Health Spending

A WHO report [2005] demonstrates that every year, more than 150 million individuals in 44 million households face financial catastrophe as a direct result of having to pay for health care. This “financial catastrophe” would be a result from households paying fees or co-payments for health care where the amount can be so high in relation to income. These high expenditures can translate to eliminating comfort and convenience gained from spending on leisure and other non-basic items, and even cutting down necessities such as food or clothing or being unable to pay for the children’s education. These out-of-pocket expenditures for health can cause
households to incur catastrophic expenditures, which in turn can push them into poverty. The need to pay out-of-pocket can also mean that households do not seek care when they need it.

Catastrophic health expenditure is not always synonymous with high health-care costs. WHO report [2005] stated that the effect of catastrophic health care costs can be determined depending on the availability of health services requiring out-of-pocket payments, the capacity to pay of households and the availability of prepayment mechanisms for risk pooling. With high out-of-pocket payments, an absence of risk-pooling mechanisms in health care financing systems and high poverty levels can result in catastrophic health care expenditure.

Wagstaff [2001] outlined the analysis of catastrophic health care payments in two methods. The first is based on egalitarian notions of equity or fairness. Fairness in financial contribution and protection against financial risk in health spending is based on the notion that every household should pay a fair share. Gillon [1986] argues that it is the egalitarian notion that health care ought to be distributed according to need which commands the greatest support among health professions and the public at large. Even WHO argued that health system payments should be organized in such a way that the burden of payments is equalized across households. However, according to Murray [2003], it is expected that there will be deviations from this perfect fairness and this can be separated into two distinct effects: a vertical effect and a horizontal effect. The vertical effect refers to the situation where households where different incomes contribute to different proportions of their incomes. The horizontal effect meanwhile refers to the situation where households facing similar conditions pay
different proportions of their incomes. Extreme horizontal inequity occurs when households face catastrophically high health expenditures which can be 40% or more of their ability to pay. Kawabata [2002] also stated that WHO proposes that health expenditures should be called catastrophic whenever it is greater than or equal to 40% of the capacity of pay.

According to some studies, payments for health care, specifically for these health expenditures, should be linked not to usage of health services but rather the ability to pay. There are few possible reasons as explained by Donaldson [1993] for using a payment scheme based on the ability to pay. Because ill-health can be unpredictable and uncertain, the impact of health care costs can be adverse, especially for poorer members of the society. Protection against financial hardship owing to catastrophic illnesses is therefore desirable. Also, the consumption of goods and services which have an impact on health spending is regarded as important thus removal of any financial barriers which impede consumption is desirable.

The second focuses on minimum standards approach requiring that payments should not exceed a prespecified share of prepayment income or not drive households into poverty. This share or in the analysis the focal variable should not to exceed or fall short of the threshold. In this approach, there are two strands of literature regarding the threshold that can be identified. The first sets the threshold in terms of proportionality of income. This threshold should set as a benchmark in ensuring that households do not spend more than some prespecified fraction of their income on health care, and spending in excess of this threshold is labelled catastrophic. The second sets the minimum in terms of the absolute level of income. This threshold
should set as a benchmark in ensuring that spending on health care does not push households into poverty—or further into it if they are already there.

At this point, it can be seen that defining clearly the terms ability to pay and prepayment income is critical in this study. Ability to pay can be deduced as a good indicator of household’s long term “normal” living standards. Derived from a utility function commonly used in the poverty literature, Murray [2003] defined that ability to pay is household consumption minus subsistence expenditure or household non-subsistence spending. More precisely, Wagstaff [2001] defined his ability to pay as total household consumption expenditures deducting its food expenditure (as a proxy for nondiscretionary expenditure) and then deducting (or adding) any income windfalls (or shortfalls). Meanwhile, prepayment income is measured by total household consumption gross out-of-pocket payments for health services. Representing $y$ as ability to pay and $x$ as prepayment income, we can represent the relationship of the two variables as:

$$y = x - D(x)$$

Given the definitions, it can easily be deduced that $D(x)$ represents the total actual food expenditures. However, the variable $D(x)$ can be actual food spending or a food allowance indicating the cost of reaching a target level of nutrient intake. This may arise if some households report food expenditures lower than subsistence spending. In this case, this indicates that the household’s food expenditure is under the estimated poverty standard for that country. As pointed out by Cavagnero [2006], this may occur since reported food expenditures in surveys does not consider food subsidies, coupons, self-production and other non-cash means of food consumption.
No one should spend more than a given fraction of their income on health care. Given out-of-pocket health spending, this fraction would depend on whether income will be in terms of either $x$ or $y$ which were defined earlier. It is vital to express out-of-pocket health payments as a share of prepayment income and ability to pay. This can be expressed as:

\[
T/x = \text{out-of-pocket payments/prepayment income}
\]
\[
T/y = \text{out-of-pocket payments/ability to pay}
\]

Using ratios $T/x$ and $T/y$ where $T$ represents out-of-pocket health payments, a given fraction ($z_{cat}$) can be arbitrarily set. This fraction ($z_{cat}$) is the threshold in determining the extent of catastrophic health expenditures. As mentioned earlier in the paper, based on WHO standards, this fraction is set at 40% using the $T/y$ ratio.

To determine the effect of catastrophic health expenditures on poverty, Wagstaff [2001] outlined these poverty measures of incidence and intensity of catastrophic health care costs as catastrophic payment headcount which measures poverty incidence, and overall mean catastrophic gap which measures poverty intensity. Catastrophic payment headcount is the percentage of the sample whose out-of-pocket expenditures exceed the arbitrary threshold, $z_{cat}$. This measure is represented as a fraction $H_{cat}$, of the sample whose expenditures as a proportion of income exceed the threshold, $z_{cat}$. If a variable $O_i$ represents the catastrophic ‘overshoot’ equal to $T_i/X_i – z_{cat}$ if $T_i/X_i > z_{cat}$ and zero otherwise (alternatively, $T_i/Y_i – z_{cat}$ if $T_i/Y_i > z_{cat}$ and zero otherwise), and a variable $E_i = 1$ if $O_i > 0$, the catastrophic payment headcount is equal to:

\[
H_{cat} = \frac{1}{N} \sum_{i=1}^{N} E_i = \mu_E
\]
where $N$ is the sample size and $\mu_E$ is the mean of $E_i$. He pointed out however that there is a disadvantage in using only the catastrophic payment headcount. This measure fails to capture the height above which individuals exceeding the threshold actually exceed it. By analogy with the poverty literature, the measure analogous to poverty gap is called catastrophic payment gap. This measure captures the height by which out-of-pocket payments exceed the said threshold, $z_{cat}$. The intensity or severity by defining the average gap of catastrophic payments is represented as:

$$G_{cat} = \frac{1}{N} \sum_{i=1}^{N} O_i = \mu_O$$

where $\mu_O$ is the mean of $O_i$. The mean positive gap can also be derived from the ratio of these identities represented by:

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

To determine who among the different sectors would suffer in these health expenditures, certain measures of health inequalities are available and useful in the study. However, as Wagstaff [1991] pointed out, one of these measures, the concentration index, is most likely to present an accurate picture of socioeconomic equalities in health. Using this measure to analyze health spending, people are ranked not by their health but by their socioeconomic status, beginning with the most disadvantaged. Its graphical representation, the concentration curve, plots the cumulative proportions of the population (beginning with the most disadvantaged and ending with the least disadvantaged) against the cumulative proportions of health expenditures. The ideal case is if health spending is equally distributed across socioeconomic groups, the concentration curve will coincide with the diagonal.
The impact of catastrophic health care spending through these measures can be analyzed further by determining the extent of damage of catastrophic payments, or the state of impoverishment caused by these payments. It is a major challenge for health systems to protect households from risk of impoverishment resulting from these health expenditures, and to ensure that the population receives health services when needed. The financial burden of out-of-pocket payments at the time of health care utilization can lead individuals to spend high amounts compared to their available incomes, thereby reducing basic spending on other items or even preventing people from seeking or obtaining care.

Estimated basic subsistence needs serve as poverty line for analyzing the poverty impact of out-of-pocket health payments. Murray [2003] defines that a household is impoverished when it crosses the poverty line after paying for health services, shifting from non-poor to poor. Instead of food expenditures, the subsistence expenditures are used to capture the effects of household subsistence spending. This spending is the minimum requirement to maintain basic life in a society. Some households may report food expenditure that is lower than subsistence spending. This indicates that the household’s food expenditure is less than the estimated poverty standard for that country. Thus a household is impoverished if the total consumption expenditures less out-of-pocket health payments are less than subsistence expenditures.

Figure 2 depicts the poverty impact by using a hypothetical distribution of income, where the horizontal axis measures cumulative income and the vertical axis shows the cumulative percentage of the total households. Using the poverty line, the poverty gap before the health payments is area A, which equals total income required to push
these households above the poverty line. After health payments, the poverty gap has increased that cover areas A, B and C. Besides their impact on the number of households falling below the poverty line, health payments can also influence the extent of poverty for households already below the poverty line, sometimes called the depth of poverty.

3 Methodology and Data

The data to be used in the paper on household expenditures came from Family Income and Expenditure Survey (FIES) from National Statistics Office. FIES is a household survey conducted by the NSO every three years. It collects data on income and expenditures from the sampled families. The most recent FIES collected data for 2003 in two rounds – the first, in July 2003 for the first semester and the second, in January 2004 for the second semester. Although the data from the previous year 2000 were used also for comparison, the 2003 FIES shall be the main dataset to be used in the analysis.

Using these data, the paper does not limit its analysis of extent of catastrophic health expenditures based on the 40% threshold set by WHO. It explores different levels of thresholds and measurements, specifically, the proportions used for out-of-pocket health payments. It uses two proportions, out-of-pocket health payments as a share of prepayment income and as a share of ability to pay. In reference to the survey used, prepayment income is the level of total household consumption expenditures and
4 Descriptive Data Analysis

The horizontal axis in Figure 3 shows the cumulative share of the 2003 sample ordered by the proportion of by ratios $T/x$ and $T/y$. There is an estimated 10% of the total household sample that spends as much as 80% of their total expenditures (both measured as prepayment income or ability to pay) in out-of-pocket health spending. A vertical line representing the WHO standards of 40% threshold can be superimposed in this graph and it can be seen that there is less than 10% of the population that face catastrophic health spending. Based on the data, it can be verified that only 0.2% of the total households face catastrophic health care spending. Therefore, it is deemed more relevant in this study to look at other thresholds as well.

It is also observed in the same figure that the trend of out-of-pocket health payments as a proportion of either measures tapers off in increasing sample of the population since households allot different amounts of health care spending given their spending preferences and income constraints. To understand more the impact of health spending to households of different incomes, Figure 4 presents the effect of burden of health expenditures across income deciles in the said survey data. With an average of 2,578 pesos across sample, the trend of out-of-pocket payments expectedly increase towards the highest income group and shoot up in the tenth income decile. Both proportions of out-of-pocket health payments to prepayment income and to household’s ability to pay increases gradually across deciles and is within range of 1

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1 Food expenditures do not include consumption on alcoholic beverages, tobacco and food consumption outside home (such as meals consumed at school, at work or at hotels, restaurants, etc.)
to 3%. This can be explained because in lower income deciles, almost all their available resources are used for basic needs especially food expenses unlike in higher income deciles where they can give up the non-subsistence purchases and reduce these expenditures to adjust for any possible catastrophic health care costs. This is also similar with the study of Kawabata [2002] who pointed out that the highest proportion of catastrophic health spending does not necessarily occur in the lowest income group.

The trend in income differences is further explored by looking at the distribution by different socioeconomic indicators. Socioeconomic indicators play an important role in the decision making in budget allocation and expenditure patterns of households. Illustrated in Figure 5, agricultural indicators show an interesting trend across income groups. For the first eight deciles, out-of-pocket health payments are slightly greater in non-agricultural households. However, for the two highest income groups, out-of-pocket health payments escalated for agricultural households and the health spending of non-agricultural households pale in comparison to their agricultural counterparts. Similarly, if the share of out-of-pocket payments in prepayment income or ability to pay is considered, it can be observed that this share for non-agricultural households is almost the same in different income groups while this share for agricultural households soars for the two highest income groups. This may be intuitively explained by Hotchkiss [2004] who pointed out in his study that rural individuals seeking health care through hospitals and clinics, which are located solely by municipalities, may feel more vulnerable, and as a response, are more likely to pay more out-of-pocket payments than are urban clients of the same income groups. Another possibility he pointed out that health providers may be more likely to demand
payments from rural clients, perhaps as a result of provider bias or because rural clients are perceived as being less likely to provide more gifts.

Although there are kinks in the increasing trend of health spending, the household headship across different income groups in Figure 6 shows that female household heads contribute more health spending than their male counterparts across different income deciles. This also translates to more likelihood of female household heads to face catastrophic health expenditures. This can be attributed to women’s control over total expenditures that make a difference in health outcomes. In general in many countries, women exercise little control over household resources. Women who assume this headship role give much more importance to well being of her family by spending more on health if necessary. Similar studies show that an individual who belonged to a household headed by a female had a significantly positive association with the magnitude of health expenditure.

Among different regions it is observed in Figure 7 that households located in NCR and ARMM are on the average the biggest and most modest out-of-pocket spender in health care respectively. What is surprising to note is that in spite of being the biggest spender, NCR is the not the most vulnerable region to catastrophic health spending. Having the highest share of health payments to either prepayment income and ability to pay, the most vulnerable regions are Western Visayas and CAR. This validates the result that it is not necessary that those with high levels of out-of-pocket payments translate to high susceptibility to catastrophic health spending.
More importantly, the trend in health spending is observed across time. Compared with 2000 data, Figure 8 shows the 2000 and 2003 trend of out-of-pocket payments as share of prepayment income and ability to pay by cumulative percentage of population. If the data are verified more closely, for the first 10% of the household population ranked by share of prepayment income/ability to pay (starting with the highest share), the probability of facing catastrophic health expenditures among households is greater in 2000 than in 2003. However, for the remaining 90%, the households in 2000 data face a higher chance than those in 2000 in incurring catastrophic health spending. This means that the number of households who incur the most in health spending relative to their total expenditures or total non-food expenditures are greater in 2000 data and the number of households that in general do not incur as much in health spending relative to total expenditures or total non-food expenditures are greater in 2003 data.

To refine the analysis and determine the extent of damage brought by these health spending to poverty, the next section presents useful measures in this study.

5 Poverty and Impoverishment

Different thresholds of out-of-pocket payments as a fraction of total expenditures and as a fraction of ability to pay are illustrated using different poverty measures. This is done since Wagstaff [2001] pointed out this threshold level is inevitably arbitrary and it would clearly depend on whether income was defined in terms simply of total consumption expenditures or in terms of a measure of capacity to pay. As mentioned earlier, based on WHO standards of 40% threshold alone, the survey data used would
not show a clear picture of determining the incidence and intensity of catastrophic health spending.

Table 1 presents these poverty measures. At different set thresholds \((z_{cat})\) at 1\%, 2.5\%, 5\% and 10\% specifically, headcount measures and gap measures are illustrated for both shares (share of prepayment income and ability to pay). It shows that for this both 2000 and 2003 survey data, as the threshold levels increase from 1\% to 10\%, the catastrophic payment headcount, \(H_{cat}\), expectedly decrease as number of households decrease whose out-of-pocket expenditures as a proportion of either total expenditures or total capacity to pay exceed the assigned threshold. In 2003, as much as 7.7\% of the sample recorded out-of-pocket payments in excess of 5.0\% of their consumption expenditures and that 8.3\% of the sample spends more than 5.0\% of their non-food consumption on out-of-pocket health expenditures. It can be also deduced from this table of results that doubling the threshold level, \(z_{cat}\), reduces the catastrophic payment headcount by half. Under shares of prepayment income and capacity to pay, mean positive gap, \(MPG_{cat}\), rises for different increasing thresholds. It is therefore clear that the decline in the overall mean catastrophic gap is due to the decline in the catastrophic payment headcount. More interesting is when comparisons are made with the 2000 data. In 2003 there are more people subjected to catastrophic payment when the share of prepayment income as a measure is used but there are less people subjected to this same burden when the share of ability to pay as a measure is used. Using the same comparison with 2000, overall mean catastrophic gap in 2003 is greater for share of prepayment income and less for prepayment income. This illustrates that these two share definitions give different trends through time. In general therefore when compared with 2000 data, catastrophic character of out-of-
pocket payments in 2000 became larger when the share in prepayment income is used, and became smaller when share of ability to pay is used.

As Wagstaff [2001] mentioned out, it is still more important to use measures that reflect that catastrophic costs matter more for the poor. It seems likely that most societies in general will care more if it is an individual in the lowest income group whose health spending (as a share of its prepayment income or ability to pay) exceeds the threshold than if it is among the highest income group. To see how proportions of those exceeding the threshold vary across the income distribution, concentration curves displayed in Figure 9 was derived using the two survey data. Both concentration curves lie below the diagonal. These graphical tools mean that there is a greater tendency for the better off to exceed the payment threshold. Thus those among the higher income groups face more the probability of facing catastrophic health expenditures. This finding is consistent with the earlier results.

How much do these catastrophic payments cause further suffering that would lead to impoverishment is yet to be answered. Figure 9 shows the distribution of impoverished households brought about by incurring these health payments. More than 80% in the lowest income group is the most susceptible in being impoverished. This is expected since official subsistence threshold expenditures are used in determining the extent of impoverishment in each income group instead of actual food expenditures and households do report food expenditures less than subsistence expenditures. Although the probability of facing catastrophic health expenditures is rising in increasing income groups, the risk of being more poor is still rooted in the lowest income group. Due to catastrophic health expenditures, across sample, an
estimated amount of 14% of total households fell into the condition of impoverishment.

6 Conclusion

In health spending, government is not the only player. The share of private spending leaves near poor households exposed to the risk of impoverishing health expenses. A country’s private share of health spending in GDP may not in practice be related to its per capita income. But on poverty-reduction grounds, there are good reasons to wish that it were.

The government has a clear role. Although the higher income groups is more vulnerable to catastrophic health spending, it must not end up paying the medical expenses of people who can easily afford to spend their own resources. Instead, it needs to concentrate financing on essential public goods and other areas where private spending is inefficient, target its limited resources to the poor, and use its stewardship capacity and resources to control private spending at lower levels of care to protect against catastrophic risks. It may still be necessary to provide subsidies for low-income groups for whom the regular premiums or out-of-pocket expenses would take up too large a proportion of their income. The main benefit from insurance comes from cover against large financial losses from any event of catastrophic illnesses.
References


Tables and Figures

Figure 1: Distribution of health expenditures by source of funds, 1991-2004


Figure 2: Distribution of income and poverty line before and after health payment


Figure 3: Out-of-pocket payments as share of prepayment income an ability to pay by cumulative percentage of population, 2003

Table 1: Incidence and intensity of catastrophic health expenditures, 2000 and 2003

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<th>2000</th>
<th>2003</th>
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<td><strong>Share of prepayment income (T1x)</strong></td>
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<td><strong>Threshold level</strong></td>
<td>1.0% 2.5% 5.0% 10.0%</td>
<td>1.0% 2.5% 5.0% 10.0%</td>
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<td><strong>Catastrophic payment headcount, ( H_{cat} )</strong></td>
<td>27.30% 13.40% 7.10% 3.20%</td>
<td>32.50% 15.10% 7.70% 3.50%</td>
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<td>1.20% 0.87% 0.61% 0.35%</td>
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<tr>
<td><strong>Mean positive gap of catastrophic health expenditures, ( MPG_{cat} )</strong></td>
<td>4.00% 6.05% 8.03% 10.19%</td>
<td>3.69% 5.79% 7.84% 9.81%</td>
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<td><strong>Share of ability to pay (T1y)</strong></td>
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<td><strong>Threshold level</strong></td>
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Figure 9: Concentration curves on health spending, 2000 and 2003

Cumulative % of health spending

Cumulative % population ranked by socio-economic status


Figure 10: Impoverishment and out-of-pocket payments by income decile, 2003