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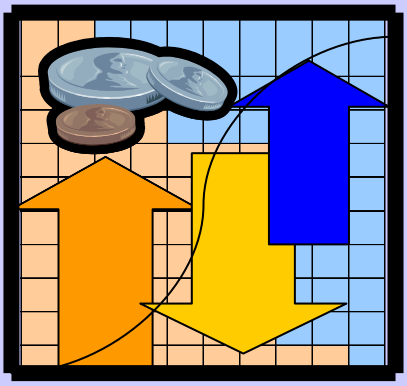

Distribution of health payments and catastrophic expenditures

Methodology

DISCUSSION PAPER

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Introduction

Health systems deliver health services, preventive and curative, that can make a substantial difference to peoples' health. However, accessing these services can lead to individuals having to expend catastrophic proportions of their available income, and some households are pushed into poverty as a result. Furthermore, because of these negative impacts some households forgo health services and suffer ill health.

The fairness of health financing is a subset of the three main goals of health systems; good health, responsiveness, and fairness of financial contribution. Fairness in financial contribution and protection against financial risk is based on the notion that every household should pay a fair share. What constitutes a fair share depends on people's normative expectations as to how health systems are financed. Nevertheless, in all countries, fairness in financial contribution embraces two critical aspects; that of risk pooling between the healthy and the sick and risk sharing across wealth and income levels. Risk pooling denotes the premise that the contributions for those that are healthy pay for the care of those that are sick, so that individuals who become sick are not struck by a double burden of sickness and financial costs of health care. Over the life span, each individual is likely to benefit from the financial security of risk pooling when she or he becomes sick. Risk sharing, while similar, refers to the premise that fairness does not mean equal contributions from all, regardless of income or wealth, but that contributions are greater from those who have more financial resources. In practical terms, embedding these notions of fairness in financing is a step towards preventing the catastrophic expenditure of households when one of the members becomes ill.

Health policy makers have long been concerned with protecting people from the possibility that ill health will lead to catastrophic financial payments and subsequent impoverishment.

This report will address the following questions: (1) Who uses what type of health services? (2) Who pays how much and for what kinds of health services? (3) How do these payments impact on a household's financial situation? (4) What kinds of households are more likely to face catastrophic expenditure?

Data requirements

National representative household surveys that include:

- Individual level:
  - socio-economic information (such as, age, sex, education, urban/rural location and so on)
  - health service utilization
- household level:
  - total household consumption expenditure
  - food expenditure (not include tobacco and alcohol)
  - out-of-pocket health expenditure and private health insurance premium

Definitions and constructions of variables

All the variables related to expenditure are converted to a monthly figure. Where survey data is provided in other units (i.e. when the recall period is 7 days, 2 weeks, 3 months, 6 months, or one year) the data should be adjusted to monthly figures. If the survey was conducted over more than one month and the inflation rate is high over these months, all of the expenditures should be deflated to a common month according to the Consumer Price Index (CPI).

II.1. (1) Out-of-pocket health expenditure (oop)

Out-of-pocket health payments refer to the payments made by households at the point they receive health services. Typically these include doctor's consultation fees, purchases of medication and hospital bills. Although spending on alternative and/or traditional medicine is included in out of pocket payments, expenditure on health-related transportation and special nutrition are excluded. It is also important to note that out-of-pocket payments are net of any insurance reimbursement.

III.1. (2) Household consumption expenditure (exp)

Household consumption expenditure comprises both monetary and in-kind payment on all goods and services, and the money value of the consumption of home-made products.

IV.1. (3) Food expenditure (food)

Household food expenditure is the amount spent on all foodstuffs by the household plus the value of family's own food production consumed within the household. However, it excludes expenditure on alcoholic beverages, tobacco, and food consumption outside the home (e.g. hotel and restaurants).

V.1. (4) Poverty line (pl) and household subsistence spending (se)

The household subsistence spending is the minimum requirement to maintain basic life in a society. A poverty line is used in the analysis as subsistence spending.

There are many ways to define poverty. None of them are perfect considering the soundness in theory and feasibility in practice. Here we use a food share based poverty line for estimating household subsistence. This poverty line is defined as the food expenditure of the household whose food expenditure share of total household expenditure is at the 50th percentile in the country. In order to minimize measurement error, we use the average food expenditures of households whose food expenditure share of total household expenditure is within the 45th and 55th percentile of the total sample. Considering the economy scale of household consumption, the household equivalence scale is used rather than actual household size. The equivalence scale is:

$$eqsize_h = hhsize_h^{\beta}$$

where $hhsize_h$ is the household size. The value of the parameter β has been estimated from previous studies based on 59 countries' household survey data, and it equals 0.56.

Subsistence spending can be calculated as follows:

1. Generate the food expenditure share (*foodexp*$_h$) for each household by dividing the household's food expenditure by its total expenditure

$$foodexp_h = \frac{food_h}{exp_h}$$

2. Generate the equivalent household size for each household as

$$eqsize_h = hhsize_h^{0.56}$$

3. Divide each household food expenditure by the equivalent household size to get equivalised food expenditures (*eqfood*$_h$)

$$eqfood_h = \frac{food_h}{eqsize_h}$$

4. Identify the food expenditure shares of total household expenditure that are at the 45th and 55th percentile across the whole sample, name these two variables as *food45* and *food55*. If the survey includes a household weighting variable, the percentile calculation should consider the weight.

5. Calculate the weighted average of food expenditure in the 45th to 55th percentile range. This gives the subsistence expenditure per (equivalent) capita, which is also the poverty line (*pl*)

$$pl = \frac{\sum w_h * eqfood_h}{\sum w_h} \quad \text{where } food45<foodexp_h<food55$$

6. Lastly, calculate the subsistence expenditure for each household (se$_h$) as

$$se_h = pl * eqsize_h$$

A household is regarded as poor (*poor*$_h$) when its total household expenditure is smaller