Progress on catastrophic health spending in 133 countries: a retrospective observational study

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Summary

Background The goal of universal health coverage (UHC) requires inter alia that families who get needed health care do not suffer undue financial hardship as a result. This can be measured by the percentage of people in households whose out-of-pocket health expenditures are large relative to their income or consumption. We aimed to estimate the global incidence of catastrophic health spending, trends between 2000 and 2010, and associations between catastrophic health spending and macroeconomic and health system variables at the country level.

Methods We did a retrospective observational study of health spending using data obtained from household surveys. Of 1566 potentially suitable household surveys, 553 passed quality checks, covering 133 countries between 1984 and 2015. We defined health spending as catastrophic when it exceeded 10% or 25% of household consumption. We estimated global incidence by aggregating up from every country, using a survey for the year in question when available, and interpolation and model-based estimates otherwise. We used multiple regression to explore the relation between a country's incidence of catastrophic spending and gross domestic product (GDP) per person, the Gini coefficient for income inequality, and the share of total health expenditure spent by social security funds, other government agencies, private insurance schemes, and non-profit institutions.

Findings The global incidence of catastrophic spending at the 10% threshold was estimated as 9·7% in 2000, 11·4% in 2005, and 11·7% in 2010. Globally, 808 million people in 2010 incurred catastrophic health spending. Across 94 countries with two or more survey datapoints, the population-weighted median annual rate of change of catastrophic payment incidence was positive whatever catastrophic payment incidence measure was used. Incidence of catastrophic payments was correlated positively with GDP per person and the share of GDP spent on health, and incidence correlated negatively with the share of total health spending channelled through social security funds and other government agencies.

Interpretation The proportion of the population that is supposed to be covered by health insurance schemes or by national or subnational health services is a poor indicator of financial protection. Increasing the share of GDP spent on health is not sufficient to reduce catastrophic payment incidence; rather, what is required is increasing the share of total health expenditure that is prepaid, particularly through taxes and mandatory contributions.

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Introduction

Although, globally, the share of health spending by patients themselves at the point of care (so-called out-of-pocket payments) has been falling, out-of-pocket spending as a share of income has not been declining. This fact has prompted concerns about the two aspects of universal health coverage (UHC): first, that everyone—poor and rich alike—should receive needed health care (referred to as service coverage);[1] and second, that families who do get needed care do not suffer undue financial hardship as a result (referred to as financial protection).[2] Strong performance on one UHC dimension does not guarantee strong performance on the other. A low incidence of catastrophic payments (ie, out-of-pocket payments that are especially large relative to a family's total income or consumption) might reflect people getting needed care but being protected from out-of-pocket costs. However, a low incidence of catastrophic payments could also mean people not getting (and not paying for) needed care. The two dimensions of UHC need to be examined together.

The second dimension of UHC (financial protection) can be captured through two indicators.[2,3] In this Article, we aimed to present global estimates for one of these indicators—namely, catastrophic out-of-pocket spending. This measure is the official indicator for monitoring of UHC financial protection among the Sustainable Development Goals (SDGs; indicator 3.8.2), with large expenditure suggested to be defined as 10%

Research in context

Evidence before this study

In a global study of catastrophic spending from 2007, which was based on data from 116 health surveys covering 89 countries and with a median survey year of 1997, catastrophic spending was defined as spending that absorbs more than 40% of total consumption, net of an allowance for food expenditures. This threshold was set equal to average food spending among households in which the food spending share (as a percentage of total consumption) was in the 45th to 55th percentile range, the assumption being that, at least in low-income and middle-income countries, the daily food intake of this group averages 2000 kcal. The study reported mean and median catastrophic spending incidence of 2·3% and 1·5%, respectively, and estimated that 150 million people globally incur catastrophic spending annually. Catastrophic spending was (partly) correlated with the share of prepayment in total health spending (negative) and the Gini coefficient for income (positive), and in low-income and middle-income countries with the share of gross domestic product (GDP) devoted to health (positive).

Added value of this study

We not only used the official Sustainable Development Goal (SDG) indicator for financial protection but also compared our results with findings obtained when catastrophic spending was defined as occurring if out-of-pocket spending exceeded 40% of non-food consumption—a definition that is close to the one used in two previous global studies. Our data are more recent than those used in two previous studies from 2003 and 2007, extend country coverage from 89 to 133, report trend data for 94 countries, and estimate catastrophic spending incidence globally for 3 years—2000, 2005, and 2010. As in the two previous studies, we analysed country-level correlates of catastrophic spending incidence, but did so using 553 datapoints rather than 116, and explored how catastrophic payments vary with the share of total health spending channelled through different types of publicly and privately financed prepayment arrangements. We also investigated the degree to which catastrophic payment incidence was associated with the fraction of the population covered by a health insurance scheme or by a national or subnational health service, an indicator suggested as a possible measure of universal health coverage (UHC).

Implications of the available evidence

In roughly half of countries, the incidence of catastrophic spending has been rising, at both the 10% and 25% thresholds, whereas in around 40% of countries, catastrophic spending incidence has been increasing using the non-food measure. However, for all measures, the population-weighted median annual rate of change of catastrophic payment incidence has been positive. The incidence of catastrophic spending varies considerably across countries at any given point in time. This variation does not reflect differences in the share of the population covered by a health insurance scheme or by a national or subnational health service: variations exist among countries officially covering the entire population, and incidence changes over time during periods when health coverage arrangements and rates have not changed. What coverage rates miss, and catastrophic payment incidence captures, is the extent of de jure and, more importantly, de facto coverage of different services. Just increasing the share of GDP spent on health does not seem to be sufficient to provide financial protection. We find that the incidence of catastrophic payments decreases with both the share of health spending that is channelled through social security funds and the share channelled through other government financial protection arrangements; evidence suggests that the negative association is stronger for government financial protection arrangements.

and 25% of total household expenditure. A companion paper[4] presents results for the second widely used indicator of financial protection—namely, medical impoverishment.[3,5] Impoverishment is not an official SDG indicator but supplements the catastrophic payment indicator by trying to highlight the poverty implications of out-of-pocket spending.

Our study updates and extends two previous global studies undertaken in 2003[6] and 2007.[7] We use the official SDG definitions for catastrophic payments and include data for 133 countries (median year 2010). We estimate annual average changes in incidence of catastrophic spending for 94 countries and report global and regional estimates for 2000, 2005, and 2010. We also use multiple regression methods to search for macroeconomic and health system variables that are associated with the incidence of catastrophic spending at the national level. We also aimed to investigate the degree to which catastrophic payment incidence is associated with coverage by a health insurance scheme or by a national or subnational health service,[8] an indicator proposed by some but rejected by others as a possible measure of UHC.[9]

See Online for appendix

Methods

Catastrophic payments as a measure of financial hardship

We focused on one measure of financial hardship that has been used widely in previous studies,[3,6,7,10–16] typically referred to as catastrophic health expenditure. Catastrophic spending can be measured in different ways (appendix). The idea is, in effect, to measure the incidence of financial hardship caused by health payments—ie, the number of households with health spending that is large relative to their ability to pay.

There is no right or wrong way to measure ability to pay. One key question is whether it is reasonable to expect households to borrow or use savings to finance their health spending, as many do.[17,18] If the answer