Factors affecting catastrophic health expenditure and impoverishment from medical expenses in China: policy implications of universal health insurance

Ye Li, Qunhong Wu, Ling Xu, David Legge, Yanhua Hao, Lijun Gao, Ning Ning & Gang Wan

Objective To assess the degree to which the Chinese people are protected from catastrophic household expenditure and impoverishment from medical expenses and to explore the health system and structural factors influencing the first of these outcomes.

Methods Data were derived from the Fourth National Health Service Survey. An analysis of catastrophic health expenditure and impoverishment from medical expenses was undertaken with a sample of 55,556 households of different characteristics and located in rural and urban settings in different parts of the country. Logistic regression was used to identify the determinants of catastrophic health expenditure.

Findings The rate of catastrophic health expenditure was 13.0%; that of impoverishment was 7.5%. Rates of catastrophic health expenditure were higher among households having members who were hospitalized, elderly, or chronically ill, as well as in households in rural or poorer regions. A combination of adverse factors increased the risk of catastrophic health expenditure. Families enrolled in the urban employee or resident insurance schemes had lower rates of catastrophic health expenditure than those enrolled in the new rural corporative scheme. The need for and use of health care, demographics, type of benefit package and type of provider payment method were the determinants of catastrophic health expenditure.

Conclusion Although China has greatly expanded health insurance coverage, financial protection remains insufficient. Policy-makers should focus on designing improved insurance plans by expanding the benefit package, redesigning cost sharing arrangements and provider payment methods and developing more effective expenditure control strategies.

Abstract: in العربية, 中文, Français, Русский и Español at the end of each article.

Introduction

According to the World health report 2000, one of the fundamental functions of a health system is to put in place a health financing system that protects the population against the financial risks associated with ill health. Such risks can be quantified in terms of catastrophic health expenditure and impoverishment from medical expenses. Catastrophic health expenditure is defined as out-of-pocket spending for health care that exceeds a certain proportion of a household’s income with the consequence that households suffer the burden of disease. A household is said to have been impoverished by medical expenses when health-care expenditure has caused it to drop below the poverty line.

In China, health insurance coverage has increased dramatically over the last decade, from 15% in 2000 to 96% in 2011. The Medical Insurance for Urban Employees (MIUE) scheme, designed exclusively for urban employees, is a mandatory programme based on cost sharing between employers and employees, with risk pooling managed at the municipal level. The Medical Insurance for Urban Residents scheme (MIUR) is for urban residents who are not covered by the MIUE and is co-financed by enrollees and local government. The New Cooperative Medical Scheme (NCMS) is a voluntary programme based on cost sharing between government and farmers and covers mostly inpatient services and a few outpatient services. However, despite China’s great strides in health insurance coverage, in a more comprehensive sense such coverage is not universal. It falls short when held up to the definition of universal coverage put forth by the World Health Organization (WHO), which includes equitable access to health services for all at an affordable cost and has three dimensions: breadth, depth and height. Breadth refers to population coverage, depth refers to the range of services covered and height refers to the extent to which health service costs are covered.

Despite China’s repeated rounds of health sector reform over the last three decades, increasing public dissatisfaction, particularly with health-care costs, motivated a new round in 2009. Although it had some positive effects, to what extent increased public spending and expanded coverage have reduced people’s financial barriers, if at all, remains unclear. The percentage of total health expenditure paid out of pocket in China increased from 20% in 1978 to 60% in 2001, then dropped to 40% in 2008. With weak expenditure controls in place, the increased breadth of coverage, combined with low benefit levels, may have actually contributed to higher utilization rates and hence to a higher burden of out-of-pocket payments. Under such circumstances increasing the breadth of coverage may not be enough to protect people from catastrophic health expenditure or impoverishment from medical expenses.

The vicious circle linking poverty and disease has been regarded as the biggest hindrance to government efforts to fight absolute poverty. Although the number of people living...
in absolute poverty in China dropped from 250 million in 1978 to 27 million in 2011, impoverishment from medical expenses has not disappeared. In 2004, 23.3% of rural households were impoverished by medical expenses.

In this article, we analyse the rates of catastrophic health expenditure and of impoverishment from medical expenses in China and how they are distributed throughout the country and in the population, and we try to identify the structural factors that underlie the risk of the first of these outcomes. We review catastrophic health expenditure and impoverishment within the wider socioeconomic context to provide guidance for the next phase of health reform.

**Methods**

**Data source and sampling method**

The primary data used to calculate catastrophic health expenditure rates were obtained from the Fourth National Health Service Survey (NHSS, 2008). The NHSS is organized by the Chinese government every five years under the direction of the Ministry of Health. For the fourth NHSS, the ministry used a multi-stage, stratified cluster sampling method with systematic random sampling at each stage. The stages were as follows: All cities – i.e. political, economic, social and cultural centres having a non-agricultural population above 100 000 – in 31 provinces were ranked into five groups according to their socioeconomic, educational, demographic and health indicators. From these five groups, 94 sample cities were selected, and in each city five townships were selected, for a total of 470 townships. Two administrative villages were selected in each township (940 villages in total) and 60 households were selected in each village. This gave a final sample of 56 400 households across China.

**Data collection and quality control**

The survey questionnaire covered the following: general status of the household based on income and household consumption expenditure (out-of-pocket health expenditure and food consumption expenditure); health status of the head of household based on his/her socio-demographic characteristics (age, sex, education, employment and insurance), overall household health status and health service utilization (illness of a household member in previous two weeks, presence of chronic disease in a household member over the past six months, and outpatient and inpatient service utilization by household members during the past year). After use in four national surveys, this questionnaire has been shown to be consistent and reliable. Face-to-face household interviews were conducted by qualified investigators. Quality control was implemented by supervisors charged with guiding and inspecting every step of the survey. Of sampled households, 5% were revisited to check the accuracy of the data, which was >95%. Data consistency was tested and no age bias was detected (Myer's Index: 3.48%). The DELTA dissimilarity coefficient and the GINI concentration ratio showed good consistency in household size between the surveyed population and the general population.

**Statistical analysis**

After the data cleaning process – a small number of households with incomplete or anomalous data were excluded – a sample of 55 556 households (175 577 people) remained and the corresponding data were entered into a database for analysis using SAS (SAS Institute Inc., Cary, United States of America). WHO’s method was employed to calculate catastrophic health expenditure, which was defined as an out-of-pocket payment for health care ≥40% of a household’s capacity to pay. Monthly household consumption expenditure was ranked into quintiles after adjustment for standard household size. This adjustment, recommended by WHO, allows any differences in health spending across countries to be attributed to factors other than the differential composition of their populations. The poverty line was defined by subsistence spending, i.e. the average monthly food expenditure of the household whose food expenditure as a share of total household consumption expenditure fell between the 45th and 55th percentiles of the entire sample. The subsistence spending of each household was calculated as the poverty line multiplied by standard household size. If a household’s total expenditure was less than this figure, the household was categorized as poor. Household non-subsistence spending was used as a proxy for capacity to pay. However, whenever food expenditure was less than subsistence spending, capacity to pay was defined as total expenditure minus food expenditure.

A descriptive analysis was undertaken to identify morbidity, service utilization and health-care spending. Logistic regression was used to predict determinants of catastrophic health expenditure. The independent variables included head of household’s sex, education, employment and health insurance status, and several household characteristics, namely expenditure quintile, household size, having at least one member older than 60 or younger than 5 years, having at least one member with tuberculosis or any chronic, non-communicable condition and having at least one hospitalized member.

**Results**

**Health-care needs and service utilization**

The rate of morbidity during the two most recent weeks was 17.9% overall: 17.0% in rural areas and 19.3% in urban areas. The total prevalence of chronic, non-communicable disease was 15.8%. Among rural households, 6.8% had a hospitalized member, compared with 7.1% of urban households and 6.8% of all households. The “non-admission rate”, defined as the percentage of patients needing hospitalization who were not hospitalized, was 27.9%. Of these patients, 70.2% were not hospitalized because of financial difficulties. The lowest expenditure quintile had the highest non-admission rate: 39.1%, a rate twice as high as that of the wealthiest group. People without insurance had the highest rate of non-admission (35.4%), followed by those covered by the MIUR (30.5%) and by the NCMS (27.6%). In 2008 the average cost of inpatient care per year was 721.9 United States dollars (US$) (exchange rate: 6.9451 yuan to US$ 1.00). The average reimbursement rate was 43.2% but varied among different insurance schemes. The MIUE offered the highest reimbursement rate (55.0%), followed by the MIUR (40.0%) and by the NCMS (30.4%).

**Catastrophic health expenditure in different groups**

Catastrophic health expenditure rates were inversely associated with the
Table 1. Distribution of household health expenditure across consumption expenditure quintiles, China, 2008

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Expenditure quintile*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Average monthly out-of-pocket health expenditure (US$)²</td>
<td>6.8</td>
</tr>
<tr>
<td>Average capacity to pay (US$)³</td>
<td>32.0</td>
</tr>
<tr>
<td>Out-of-pocket share of monthly household expenditure (%)</td>
<td>12.7</td>
</tr>
<tr>
<td>Capacity to pay out of pocket (%)</td>
<td>22.2</td>
</tr>
<tr>
<td>Households with catastrophic health expenditure (%)</td>
<td>15.8</td>
</tr>
</tbody>
</table>

¹ US$, United States dollars. ² Quintile 1 is the poorest and quintile 5 the wealthiest. ³ Based on a currency exchange rate of 6.9451 yuan to US$ 1.00.

household's economic level. The average catastrophic health expenditure rate among urban and rural households with different health-related characteristics located in China's eastern, middle, and western provinces was 13.0%. The average out-of-pocket payment and capacity to pay rose steadily with rising expenditure quintile; the wealthier the quintile, the higher the out-of-pocket payment and capacity to pay. Conversely, the out-of-pocket payment occupied a progressively smaller fraction of capacity to pay with rising expenditure quintile. Thus, the economic burden borne by the wealthier population segments is proportionately smaller because their capacity to pay is higher (Table 1).

Catastrophic health expenditure distribution

We compared catastrophic health expenditure rates among urban and rural households with different health-related characteristics located in China’s eastern, middle, and western provinces (corresponding to affluent, middle-income, and poor regions) (Table 2). Rural households were at greater risk of experiencing catastrophic health expenditure than urban households. Households located in the wealthier provinces were at lower risk of catastrophic health expenditure than poorer regions. Household characteristics, such as having health insurance or having chronically ill, elderly or hospitalized members, were associated with the risk of catastrophic health expenditure in urban and rural households in all regions. The catastrophic health expenditure rate for households covered by the MIUE and MIUR was lower than the national average; the rates for households covered by the NCMS (range: 13.8–16.0%) were above the national average.

A combination of several family-level risk factors with location-related factors, such as living in a rural area, increased household vulnerability to catastrophic health expenditure. Households with hospitalized members and located in rural areas had the highest catastrophic health expenditure rate (35.0%), followed by those with hospitalized members (32.8%), Noncommunicable diseases (NCDs) (23.1%) and elders above 60 (19.7%).

When these vulnerabilities existed together, the risk of catastrophic health expenditure increased. Households with NCD members who were hospitalized had catastrophic health expenditure rates of 39.3%, which was two times higher than households with NCD but not hospitalized and eight times higher than the rate for households without either characteristic.

Poverty levels and impoverishment analysis

In our study, the poverty line was US$ 449.40 per year. Without taking out-of-pocket payments into consideration, poor households accounted for 18.2% of all households and for 86.0% of the households in the poorest quintile. After out-of-pocket payments, 7.5% of non-poor households became poor. As expected, impoverishment from medical expenses was more common in the poorest quintile. Rural households had higher rates of poverty and of impoverishment than urban households (Table 3). The rural poverty rate was almost eight times higher than the rate in urban areas and the rate of impoverishment was about three times higher.

Determinants of catastrophic health expenditure

Logistic regression yielded a wide range of determinants linked with catastrophic health expenditure (Table 4). Households headed by a female, an unemployed person or a person having little education, and households having at least one member who was elderly, ill from tuberculosis or any chronic non-communicable illness, or hospitalized were more likely to experience catastrophic health expenditure. Households without insurance were at higher risk of catastrophic health expenditure.
compared with those covered by the MIUE and MIUR. Economic status was inversely associated with catastrophic health expenditure, that is, wealthier households were more protected against catastrophic health expenditure. Urban households were more likely to escape catastrophic health expenditure than rural households. Having a large family and at least one young member appeared to be protective factors.

**Discussion**

Rates of catastrophic health expenditure and impoverishment from medical expenses provide insight into the level of financial protection that a health-care financing system provides for its citizens. It reflects the financial burden

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Poor</th>
<th>Impoverished</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>3.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Rural</td>
<td>24.6</td>
<td>9.3</td>
</tr>
<tr>
<td>Eastern province</td>
<td>11.3</td>
<td>5.5</td>
</tr>
<tr>
<td>Middle province</td>
<td>17.4</td>
<td>7.9</td>
</tr>
<tr>
<td>Western province</td>
<td>25.2</td>
<td>9.0</td>
</tr>
<tr>
<td>Expenditure quintile*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>86.0</td>
<td>10.6</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>19.1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>4.2</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>2.2</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>18.2</td>
<td>7.5</td>
</tr>
</tbody>
</table>

* Quintile 1 is the poorest and quintile 5 the wealthiest.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>P</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender of household head (male vs female)</td>
<td>−0.147</td>
<td>0.035</td>
<td>17.278</td>
<td>&lt; 0.0001</td>
<td>0.863 (0.805–0.925)</td>
</tr>
<tr>
<td>Educational level of head of household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None vs university or above</td>
<td>1.073</td>
<td>0.141</td>
<td>57.600</td>
<td>&lt; 0.0001</td>
<td>2.924 (2.216–3.857)</td>
</tr>
<tr>
<td>Primary school vs university or above</td>
<td>0.806</td>
<td>0.139</td>
<td>33.745</td>
<td>&lt; 0.0001</td>
<td>2.339 (1.706–2.939)</td>
</tr>
<tr>
<td>Junior high school vs university or above</td>
<td>0.488</td>
<td>0.138</td>
<td>12.467</td>
<td>&lt; 0.0001</td>
<td>1.629 (1.242–2.135)</td>
</tr>
<tr>
<td>Senior high school vs university or above</td>
<td>0.385</td>
<td>0.143</td>
<td>7.251</td>
<td>0.007</td>
<td>1.469 (1.110–1.943)</td>
</tr>
<tr>
<td>Technical secondary school vs university or above</td>
<td>0.385</td>
<td>0.161</td>
<td>5.681</td>
<td>0.017</td>
<td>1.469 (1.071–2.016)</td>
</tr>
<tr>
<td>Junior college vs university or above</td>
<td>−0.090</td>
<td>0.177</td>
<td>0.259</td>
<td>0.611</td>
<td>0.914 (0.646–1.292)</td>
</tr>
<tr>
<td>Employment status of head of household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed vs unemployed</td>
<td>−0.567</td>
<td>0.040</td>
<td>206.000</td>
<td>&lt; 0.0001</td>
<td>0.567 (0.525–0.613)</td>
</tr>
<tr>
<td>Retired vs unemployed</td>
<td>−0.119</td>
<td>0.068</td>
<td>3.089</td>
<td>0.079</td>
<td>0.888 (0.778–1.014)</td>
</tr>
<tr>
<td>Student vs unemployed</td>
<td>−0.805</td>
<td>0.376</td>
<td>4.955</td>
<td>0.032</td>
<td>0.447 (0.214–0.933)</td>
</tr>
<tr>
<td>Insurance status of head of household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIUE vs none</td>
<td>−0.365</td>
<td>0.075</td>
<td>23.937</td>
<td>&lt; 0.0001</td>
<td>0.694 (0.600–0.804)</td>
</tr>
<tr>
<td>MIUR vs none</td>
<td>−0.462</td>
<td>0.105</td>
<td>19.514</td>
<td>&lt; 0.0001</td>
<td>0.630 (0.513–0.773)</td>
</tr>
<tr>
<td>NCMS vs none</td>
<td>0.012</td>
<td>0.057</td>
<td>0.044</td>
<td>0.834</td>
<td>1.012 (0.905–1.131)</td>
</tr>
<tr>
<td>Other vs none</td>
<td>−0.080</td>
<td>0.194</td>
<td>0.171</td>
<td>0.679</td>
<td>0.923 (0.631–1.35)</td>
</tr>
<tr>
<td>Household having:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Member with chronic disease (yes vs no)</td>
<td>1.047</td>
<td>0.030</td>
<td>1247.289</td>
<td>&lt; 0.0001</td>
<td>2.848 (2.687–3.018)</td>
</tr>
<tr>
<td>Hospitalized member (yes vs no)</td>
<td>1.525</td>
<td>0.032</td>
<td>2248.972</td>
<td>&lt; 0.0001</td>
<td>4.597 (4.316–4.896)</td>
</tr>
<tr>
<td>Member with tuberculosis (yes vs no)</td>
<td>0.575</td>
<td>0.109</td>
<td>27.697</td>
<td>&lt; 0.0001</td>
<td>1.778 (1.435–2.203)</td>
</tr>
<tr>
<td>No. of household members (≥ 5 vs ≤ 4)</td>
<td>−0.728</td>
<td>0.034</td>
<td>448.930</td>
<td>&lt; 0.0001</td>
<td>0.483 (0.451–0.516)</td>
</tr>
<tr>
<td>Members aged &gt; 60 years (yes vs no)</td>
<td>0.627</td>
<td>0.033</td>
<td>367.713</td>
<td>&lt; 0.0001</td>
<td>1.872 (1.755–1.995)</td>
</tr>
<tr>
<td>Five or more members (yes vs no)</td>
<td>−0.211</td>
<td>0.064</td>
<td>10.925</td>
<td>0.001</td>
<td>0.810 (0.715–0.918)</td>
</tr>
<tr>
<td>Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural vs urban</td>
<td>0.054</td>
<td>0.007</td>
<td>54.468</td>
<td>&lt; 0.0001</td>
<td>1.055 (1.040–1.07)</td>
</tr>
<tr>
<td>Expenditure quintile*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quintile 1 vs 5</td>
<td>0.306</td>
<td>0.052</td>
<td>34.728</td>
<td>&lt; 0.0001</td>
<td>1.358 (1.227–1.504)</td>
</tr>
<tr>
<td>Quintile 2 vs 5</td>
<td>0.269</td>
<td>0.052</td>
<td>27.084</td>
<td>&lt; 0.0001</td>
<td>1.309 (1.183–1.449)</td>
</tr>
<tr>
<td>Quintile 3 vs 5</td>
<td>0.141</td>
<td>0.051</td>
<td>7.567</td>
<td>0.006</td>
<td>1.151 (1.041–1.272)</td>
</tr>
<tr>
<td>Quintile 4 vs 5</td>
<td>0.006</td>
<td>0.049</td>
<td>0.015</td>
<td>0.903</td>
<td>1.006 (0.914–1.108)</td>
</tr>
</tbody>
</table>

CI, confidence interval; MIUE, Medical Insurance for Urban Employees; MIUR, Medical Insurance for Urban Residents; NCMS, New Cooperative Medical Scheme; OR, odds ratio; SE, standard error.

* Out-of-pocket payment divided by capacity to pay ≥ 40%.

* Quintile 1 is the poorest and quintile 5 the wealthiest.
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shoudered by families and the financial barriers that reduce their access to health care. In our study, the rates of catastrophic health expenditure and impoverishment were 13.0% and 7.5%, respectively. Such rates are higher than those found in other low-income countries.20–21 The drivers of catastrophic health expenditure are summarized in subsequent sections.

Health-care needs, utilization and capacity to pay

Our logistical results show that health-care needs and service utilization are key determinants of catastrophic health expenditure. The risk of households with NCD is 2.8 times higher than those without. Households experiencing hospitalization are 4.6 times more likely to suffer catastrophic health expenditure. The financial protection provided by the present mix of insurance schemes is inadequate.

The risk of catastrophic health expenditure and impoverishment are closely linked with economic status. Households in poorer quintiles are more at risk of suffering catastrophic health expenditure and their impoverishment is more common, which is similar to other studies.22,23 The capacity to pay of the wealthiest population quintile is around 10 times higher than that of the poorest. Disparities in social, economic and environmental conditions in different regions of China also play a part in the risk of experiencing catastrophic health expenditure.

Demographic factors

Logistic regression showed that demographic factors such as age, sex, education, household size, employment status of the head of household and location exert an influence on the risk of catastrophic health expenditure. Households headed by a male or by someone with higher education or employment are less likely to suffer catastrophic health expenditure. Larger household size and the presence in a household of a member less than 5 years of age are protective factors, as reported in studies from Argentina and Turkey.22,23 The high rate of catastrophic health expenditure in households with elderly members is of special relevance in view of China’s ageing demographic profile. An integrated, poverty-oriented social policy approach is needed to address these factors.

Health insurance coverage

In 2008, 87% of China’s population was covered by various insurance schemes, which suggests that the breadth of coverage needs to be expanded further to achieve universal coverage. Catastrophic health expenditure rates varied across affiliates of the different insurance schemes. They were lower among MIUE and MIUR affiliates (9.4% and 8.5%, respectively) than among NCMS enrollees (14.8%). Catastrophic health expenditure rates among MIUE and MIUR enrollees are higher than rates in other developing countries.26 The depth and height of coverage are still insufficient; service coverage is inadequate and out-of-pocket payments remain high.

Benefit packages and cost sharing

A comprehensive benefit package includes not only services, but also cost-sharing mechanisms.27 China’s medical insurance schemes rely on high co-payments to control the financial risk carried by the insurer. Net co-payment rates are 45%, 60% and 70% for MIUE, MIUR and NCMS enrollees, respectively, even though Chinese policy stipulates that the reimbursement rate for inpatients should be above 60%.28

China’s medical insurance schemes are designed to protect against catastrophic expenses during episodes of major illness and hospitalization rather than to prevent such episodes. Because of the limited coverage of pharmaceuticals and outpatient services, households having a chronically ill member may refrain from seeking care until advanced illness sets in. Extending insurance coverage to long-term care for chronically ill patients, outpatient services, routine essential drugs and rehabilitation services should be a priority.

Provider payment methods and cost containment

In China, the main payment method for hospital charges is fee-for-service. In the absence of effective expenditure controls and with limited risk sharing by hospitals, the financial risk has been shifted to the insurer and the patients. Hospitals have no incentives for cost control under an environment of maximum profit-seeking. Bonus payments to medical staff, tied to service volume and revenue, comprise a large fraction of medical remuneration. This constitutes an internal incentive to maximize volume, particularly of high-margin services. The price-cost margin is low for labour-intensive services, but it is higher for drugs and high-technology services, which further intensifies hospitals’ dependency on revenue from provider-induced demand. Hospitals receive less than 8% of their revenues from government support.29 This conjunction of factors contributes to escalating health-care costs. In response, the Chinese Government has promoted a series of pilot studies of alternative payment methods, such as episode-based payment.30

High out-of-pocket payments such as those seen in China (40% of total health expenditure in 2008) and Viet Nam (53.5% of total health expenditure in 2010)31,32 are a risk factor for impoverishment.33 Basing health-care financing largely on out-of-pocket payment is regarded as both inefficient and inequitable.34–36 The high out-of-pocket and high rates of catastrophic health expenditure and impoverishment in China suggest that the support provided by insurance has been surpassed by increased service volumes and charges. More worrying is the possibility that, without effective cost controls, the increased flow of government subsidies to insurance companies has actually helped increase service volumes and charges through provider-induced demand.

Health insurance design

To reduce the risk of catastrophic health expenditure, the current mix of insurance schemes will need to be redesigned to include a mandatory essential benefit package, an essential component of universal coverage.36 Coverage should be extended. Cost- and risk-sharing arrangements need to be reformed. Cost sharing in China favours the insurers rather than the patients. Insurers use exclusions, up-front deductibles and item ceilings to contain costs, and once a medical expenditure surpasses the ceiling, patients take over the remaining burden. This explains the disparity between reimbursement rates as stipulated in policy and actual rates in China. The main risk for hospitals is posed by uncollected debts. The insurers carry some risk with respect to volume, but most of the risk is borne by the enrollee. Insurance arrangements free of the per-
verse incentives associated with these arrangements can be designed.

The fee-for-service payment to health-care providers offers an incentive for reducing unit costs while increasing service volumes; it encourages provider-induced demand with over-servicing and over-prescription. This enables hospitals to shift the financial risk to insurers and patients and has implications in terms of service quality and of the financial burden borne by households and the government.

Conclusion

China's health sector reform has achieved unprecedented progress, but protecting vulnerable groups from health-care-related impoverishment remains a challenge. Health insurance, intended to reduce inequities and increase access to services, does not always accomplish these aims. As shown by our study, expanded coverage doesn't always translate into improved health-service coverage or better protection against health-care costs. Designing health insurance appropriately is critical; if the benefit package is small and cost sharing inadequate, universal coverage will be difficult to achieve. Provider payment methods can have different outcomes; under China's unique circumstances, fee-for-service payment creates perverse incentives that exacerbate catastrophic health expenditure.

More systematic monitoring of catastrophic health expenditure will assist in steering the development of health financing policies in China. The country should focus on addressing the financial access barriers facing vulnerable groups and on developing effective cost-control measures. A more integrated reform strategy is needed to enhance the breadth, depth and height of insurance coverage. In the long run, the various insurance schemes will need to be integrated and harmonized.

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ملخص

العوامل المؤثرة على النفقات الصحية الباهظة والإفقار الناتج عن النفقات الطبية في الصين: الآثار السياسية للتأمين الصحي

المرض الاقتصادي الذي وصل إليها مستوى حيالي الشعب الصيني من الارتفاع المالي الباهظ والإفقار الناتج عن النفقات الطبية واستكمال النظام الصحي والسياسات الحالية المحمد. وكانت الحاجة للرعاية الصحية واستخدامها والديموغرافية ونوع حزمة المزايا ونوع طريقة الدفع المقدم للمؤسسات هي عواملًا في اكتشاف النتائج.

تتزايد النفقات الصحية الباهظة بين الأسر التي تضم أفرادًا تم إدخالهم إلى المستشفيات أو كبار السن أو مرضى مزمنين، بالإضافة إلى الأسر في الأقاليم الريفية أو الأكثر فقراً. وزادت مجموعة من العوامل السلبية من خطورة النفقات الصحية الباهظة. وكانت معدلات النفقات الصحية الباهظة بالنسبة للأسر المسجلة في أنظمة التأمين لدى الموظفين الحضرى أو المقيمين منخفضة عن تلك المسجلة في النظام المشترك الريفي الجديد. وكانت الحاجة للرعاية الصحية واستخدامها والديموغرافية ونوع حزمة المزايا ونوع طريقة الدفع المقدم للمؤسسات هي عواملًا في اكتشاف النتائج.

استنتج على الرغم من قيم الصين تنويع نماذج التأمين الصحي على نحو كبير، إلا أن الحساب الائتلاف تؤثر غير كافية. ويتيح على صناع القرار زيادة في تقديم تقارير تكاليف وطرق الدفع المقدم للمؤسسات ووضع استراتيجيات أكثر فعالية لمواجهة الإقتصاد.

abstract

Analysis of the Determinants of Catastrophic Health Expenditure and Poverty in China

Objective

China has rapidly expanded health insurance coverage, but protecting vulnerable groups from health-care-related poverty remains a challenge. Health insurance is intended to reduce inequities and increase access to services, but it does not always accomplish these aims. The fee-for-service payment to health-care providers offers an incentive for reducing unit costs while increasing service volumes. This enables hospitals to shift the financial risk to insurers and patients and has implications in terms of service quality and of the financial burden borne by households and the government.

Conclusion

China's health sector reform has achieved unprecedented progress, but protecting vulnerable groups from health-care-related impoverishment remains a challenge. Health insurance, intended to reduce inequities and increase access to services, does not always accomplish these aims. As shown by our study, expanded coverage doesn't always translate into improved health-service coverage or better protection against health-care costs. Designing health insurance appropriately is critical; if the benefit package is small and cost sharing inadequate, universal coverage will be difficult to achieve. Provider payment methods can have different outcomes; under China's unique circumstances, fee-for-service payment creates perverse incentives that exacerbate catastrophic health expenditure.

More systematic monitoring of catastrophic health expenditure will assist in steering the development of health financing policies in China. The country should focus on addressing the financial access barriers facing vulnerable groups and on developing effective cost-control measures. A more integrated reform strategy is needed to enhance the breadth, depth and height of insurance coverage. In the long run, the various insurance schemes will need to be integrated and harmonized.

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Факторы, влияющие на катастрофические расходы на медицинское обслуживание и связанное с этим обнищание в Китае: выводы для экономической политики универсального медицинского страхования

Цель Оценить степень защищенности населения Китая от катастрофических расходов домохозяйств и обнищания из-за расходов на медицинское обслуживание, а также изучить систему здравоохранения и структурные факторы, влияющие на первый из вышечисленных процессов.

Методы Данные получены из 4-го исследования Государственной службы здравоохранения. Анализ катастрофических расходов на здравоохранение и обнищание из-за расходов на медицинское обслуживание был проведен с выборкой 55 556 домохозяйств с различными параметрами и проводился в сельских и городских условиях в разных частях страны. Логистическая регрессия использовалась для установления определяющих факторов катастрофических расходов на здравоохранение.

Результаты Уровень катастрофических расходов на здравоохранение составлял 13%; уровень обнищания – 7,5%. Уровни катастрофических расходов на здравоохранение были выше среди домохозяйств, имеющих госпитализированных, пожилых или хронически больных членов, а также в домохозяйствах в сельских или бедных регионах. Сочетание неблагоприятных факторов повысило риск катастрофических расходов на здравоохранение. Семьи, участвующие в системах страхования городских служащих или местных жителей, имели более низкие показатели катастрофических расходов на здравоохранение, по сравнению с зачисленными в новую сельскую корпоративную систему. Потребность в медицинской помощи, а также ее использование, демографические данные, тип страхового пакета и тип способа оплаты поставщика являлись детерминантами катастрофических расходов на здравоохранение.

Заключение Несмотря на то, что Китай имеет весьма широкое страховое покрытие, финансовая защита остается неудовлетворительной. Ответственным за политику в области здравоохранения следует сконцентрироваться на разработке усовершенствованных планов страхования посредством расширения страховых пакетов, переработки соглашений о долевом участии и методов оплаты поставщикам услуг, а также разработки более эффективных стратегий по контролю за расходами.
el método de pago al proveedor fueron los determinantes del gasto sanitario imprevisto.

Conclusión Aunque China ha ampliado mucho la cobertura del seguro de salud, la protección financiera sigue siendo insuficiente.

Las autoridades deberían centrarse en diseñar planes de seguros mejorados aumentando las prestaciones, redesignando los acuerdos para la financiación de los gastos y los métodos de pago al proveedor y desarrollar estrategias más eficaces para el control de los gastos.

Reference