

IV. INVITED ARTICLE III

Role of Health Insurance in Averting Economic Hardship in Families Following Acute Stroke in China*

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Introduction

Over the last three decades, market reforms and trade liberalisation policies have brought significant wealth and economic prosperity to the people of China. The downside to these changes, though, has been a decline in access to health care for the poor and increasing levels of out-of-pocket payments for health care.³² The high costs of health care has meant that many people face the tragic choice of either forgoing treatment or incurring financial hardship with the onset of illness.³³

Stroke is an enormous health issue in China, as the second most common cause of death, accounting for almost 20 per cent of all deaths in both rural and urban settings.³⁴ As its huge population undergoes rapid ageing, urbanisation and other lifestyle and social changes, stroke is an ever increasing burden on the Chinese health care system. In common with other forms of cardiovascular disease, stroke can have serious economic consequences to families due to loss of income and the cost of health care. In China, where 60 per cent of health care expenditure is financed from out-of-pocket payments, illness is a major cause of economic hardship and poverty.³⁵

It is estimated that 13.7 per cent of the population of China have incomes below a poverty threshold of US\$ 1.08 per day and 44.6 per cent below a threshold of US\$ 2.15 per day. Out-of-pocket payments for health care have been shown to result in 32 million individuals (2.6 per cent increase) being pushed below the US\$ 1.08 a day income threshold and 23 million individuals (1.8 per cent increase) pushed below the US\$ 2.15 threshold.³⁶

Health insurance is seen as an important means of offering financial protection from such economic catastrophe. In urban areas of China, social health insurance schemes based on employment were introduced in 1998, with coverage provided principally to employees of State enterprises and some areas of the private sector. In its early phase, the urban health insurance initiative was shown to have had some success in reducing the financial burden on patients³⁷ and in reducing overall cost pressures.³⁸ However, recent data suggests that the anticipated expansion of coverage has not materialised and that levels of participation amongst vulnerable groups, such as women, low income earners, rural to urban migrant workers, and employees on short-term contracts, has been falling.³⁹ Furthermore, co-payments and gaps in benefit packages can lead to potentially significant out-of-pocket costs, even for those with insurance. The effects are being felt by the population: health care was the social issue of most concern for people interviewed as part of a recent nationwide survey of 101,029 families conducted by the National Bureau of Statistics of China.⁴⁰

* This text is extracted from: Heeley, E. *et al.*, *Role of health insurance in averting economic hardship in families after acute stroke in China*, *Stroke*, 2009, 40(6): 2149-56.

³² Liu (2006)

³³ *Ibid.*

³⁴ WHO Representative Office in China.

³⁵ van Doorlaer *et al.* (2007).

³⁶ van Doorlaer *et al.* (2006).

³⁷ Liu *et al.* (2002).

³⁸ Meng (2004).

³⁹ Xu (2007).

⁴⁰ National Bureau of Statistics of China (2008).

Methods

In this nation-wide prospective 62 hospital registry study of acute stroke in China, we recorded information on patient demographics, clinical features, socioeconomic factors, management and costs of medical care. Information on out-of-pocket health expenses was obtained in surviving patients at three and 12 months follow-up. Catastrophic health care payments, defined as $\geq 30\%$ of total household annual income, were estimated from reported household annual income. A comprehensive description of the methods can be found in the full journal version of this paper.⁴¹

Results

Of 5,557 patients who were alive and available for interview at three months post-stroke, 818 were excluded from the analyses due to missing data on income or health care expenditure. Although these patients had the same distribution of gender, age, baseline stroke severity and level of disability at hospital discharge as the 4,739 patients with complete information, they were more often from the wealthy provinces and less likely to report difficulties in making payments for food, accommodation and other necessities.

Among 4,739 three-month survivors of stroke with outcome data, average hospital and medication costs were 16,525 Chinese Yuan Renminbi (CNY) (US\$ 2,361) and out-of-pocket costs were 14,478 CNY (US\$ 2,068). Overall, 3,384 (71 per cent) patients had experienced catastrophic out-of-pocket expenditure. Workers without health insurance were seven times more likely to experience catastrophic payments than workers with insurance. Health insurance also protected against catastrophic payments in patients who were either retired or not working (those without health insurance were 4.7 and 1.8 times respectively more likely to experience catastrophic health care payments).

Another approach to examining the impact of out-of-pocket health expenses is to consider the extent to which households with incomes above the poverty level are brought below this level once such expenses are deducted. On the basis of this measure, we found that 37 per cent of patients (and their families) fell below the poverty line set at US\$ 1 per day, and 39 per cent when it was set at US\$ 2 per day, following the stroke. However, having health insurance was protective (23 per cent, compared to 62 per cent without health insurance falling below the poverty line of US\$ 1 per day).

Discussion

Our large, country-wide study provides evidence to support growing concerns of rising economic burden from health care costs in the general population of China. We have shown that acute stroke imposes catastrophic health care payments in the majority of households with an affected individual, with many at risk of impoverishment. Health insurance can avert these risks albeit provided there is high enough level of coverage (>75 per cent), as was present in nearly half of the patients in this study. Given the looming regional epidemic of strokes and other chronic diseases, our findings re-emphasise the need for initiatives to expand health insurance coverage in both rural and urban settings in China, and also in other developing countries where out-of-pocket expenses comprise a significant proportion of health care financing. Such initiatives would need to be augmented by efforts to ensure that the level of coverage offered provides adequate levels of financial protection.

Greater financial autonomy in the health sector and reduced government subsidies to hospitals and health centres in China has led to market-oriented financing strategies for health providers that have driven up costs, reduced the provision of primary care and preventative services, and moved resources away from rural areas where the majority of the population resides. These and other changes have led to a fragmentation of the health care system, the emergence of health inequities, and exposure of individuals, their families, and communities, to increased stress from the impact of chronic diseases, such as stroke. Our study shows that health insurance provides protection from such effects, particularly in workers; whilst those with no health insurance but still presenting to hospital tend to be those with higher incomes and thus potentially have sufficient confidence in their ability to access resources to pay hospital bills. A previous multi-city population-based study showed that generally the number of stroke cases hospitalised in China was high (83 per cent); it was higher in developed urban

⁴¹ Heeley *et al.* (2009).

populations and lower for rural populations.⁴² It is possible that patients with low household incomes and without health insurance who experience strokes are not presenting to hospital, but our study was not designed to address the pathways of care outside hospital. The level of health insurance coverage has been highlighted as being an important aspect to the protection from experiencing catastrophic payments offered to households. Even so, the cost of the initial co-payment and medication costs in the first three months post-stroke alone (which are generally not covered by health insurance) can still constitute a catastrophic payment for many patients despite them having the nominal "100 per cent coverage" of health insurance.

Currently the Chinese government is consulting on a multipronged initiative to improve the health of China's 1.3 billion residents by 2020. The key to this round of health system reform is to increase government spending on health and committing to health insurance for the whole population of China, including people in rural areas and non-workers. This is a massive undertaking and must be encouraged as this should help reduce the inequities in health care that we have documented for strokes. In the interim the rolling out of health insurance schemes nationwide to workers and non-workers should help avoid such catastrophic payments being experienced by many families, although it is likely that the coverage provided through the design of current schemes will alone not be enough to remove the risk of economic catastrophe.

These findings in relation to the extent of out-of-pocket payments and levels of economic catastrophe associated with strokes can be generalised to urban China. For rural China, however, where there are greater levels of poverty and lower levels of health insurance coverage, it is likely that a greater proportion of patients will fail to present to hospital; and when they do, are more likely to face greater risk of economic catastrophe from stroke and similar acute disabling illnesses.

Conclusion

In summary, as health care costs are high relative to income in China, families face considerable economic hardship following stroke. Health insurance protects families against catastrophic health care payments, thus highlighting the need to accelerate the ongoing process of building a comprehensive health care system in both urban and rural settings in China.

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⁴² Zhang *et al.* (2003).