

# Challenges to the Chinese Health Insurance System: Users' and Service Providers' Perspectives

Lei Si<sup>1,2</sup>, Qi-Cheng Jiang<sup>2</sup>

<sup>1</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart, Tasmania 7000, Australia

<sup>2</sup>Department of Health Insurance, School of Health Administration, Anhui Medical University, Hefei, Anhui 230031, China

**Key words:** Healthcare; Health Insurance System; Healthcare reform

To achieve universal health insurance coverage, China has launched three phases of health care system reforms. The first round of reforms was embarked on in the mid-1980s with the introduction of market incentives. The second round began in 1997 with the introduction of the Urban Employee Basic Medical Insurance (UEBMI) scheme which provided health insurance coverage to all urban workers in addition to a long-term/historical scheme for government workers. Both the government and UEBMI schemes were limited to individual enrolment; however, dependents such as a spouse or child were not covered. The third phase of reforms began in 2003 with the launch of the New Rural Cooperative Medical Care System (NRCMS). This system covers rural residents at the household level. In 2007, the Urban Resident Basic Medical Insurance (URBMI) program was introduced that further expanded the insurance coverage to unemployed urban residents.<sup>[1]</sup> UEBMI, URBMI, and NRCMS are acknowledged as basic medical insurance (BMI) and all schemes require payment of enrolment premiums.

Both the BMI and government payment systems employ co-payment rates that vary between plans and jurisdictions. In addition to co-payment, there are deductibles and annual ceilings in the BMI system. As of 2011, the government insurance scheme and the BMI system covered 95% of the Chinese population, up from 15% at the start of the third phase of reforms. The remaining 5% of the population were covered by commercial insurance or must fully self-fund their medical treatment.<sup>[2,3]</sup>

Remarkable health outcomes have been achieved since the start of the health care reforms. The infant mortality rate has fallen from 34/1000 live births to 11/1000 live births between

1982 and 2013; while life expectancy has simultaneously increased from 68 years and 75 years.<sup>[4,5]</sup> However, there are still some concerns. First, total health expenditures, and in turn, the proportion of the gross domestic product (GDP) spent on health has increased markedly since the early 1990s.<sup>[6]</sup> However, second, health insurance only accounted for approximately one fifth of the total health expenditures due to deductibles, co-payment rates, and ceilings, the remaining was mostly paid by out-of-pocket (OOP).<sup>[7]</sup> Finally, households spent a greater percentage of income on healthcare: From only 2% of their total spending on healthcare in 1990 to around 9% in 2009.<sup>[6]</sup> The increasing health expenditure proportion of income has triggered a healthcare inequity issue with more households exposed to the risk of high payments when confronting catastrophic illness.<sup>[8,9]</sup>

Normally, three main parties are involved in the healthcare system: healthcare users (patients), healthcare providers (such as hospitals), and the government. The government in particular plays an important role with its steering and stewardship function, because healthcare providers and users behave differently based on incentives in the healthcare system. The paper by Zhang and Hashimoto,<sup>[10]</sup> clearly addresses this phenomenon with three major findings: (1) Patients covered under the government health insurance scheme consumed significantly more medications than those who participate in the UEBMI or the NRCMS schemes in which a much higher co-payment rate is employed; (2) Patients subscribed to plans with annual ceilings are prescribed significantly more medications in the second half of the financial year than in the first half; (3) The length of hospital stay was shorter in patients covered by health insurance subject to government surveillance.

Co-payment is a potential means to control increasing healthcare expenditure in most health systems; however,

Access this article online

Quick Response Code:



Website:  
www.cmj.org

DOI:  
10.4103/0366-6999.151641

**Address for correspondence:** Prof. Qi-Cheng Jiang,  
School of Health Administration, Anhui Medical University, Meishanlu 81,  
Shushan, Hefei, Anhui 230032, China  
E-Mail: jiangqicheng@ahmu.edu.cn

evidence demonstrates that it has reduced demand for medication consumption, doctor consultations, and ambulatory uses.<sup>[11]</sup> This study partially confirmed the previous findings by comparing the medication consumption in individuals under health insurance with different co-payment rates. It was suggested that the co-payment was less influential for hospitalizations,<sup>[12]</sup> however, the impact from co-payment rates on hospitalization prevalence was not able to be addressed as the study population where patients already admitted in an orthopedic ward. In our opinion, it is necessary to introduce co-payment in the health financing system but the healthcare policy makers are encouraged to intensively measure the equity impact of the co-payment rate.

Annual reimbursement ceilings are applied in UEBMI, URBMI, and NRCMS with wide variations between jurisdictions and plans.<sup>[13]</sup> The original objective of introducing an annual ceiling was to control rapidly growing health expenditures and to attempt to reduce the potential for moral hazard. In this study, the authors found that patients tend to spend more on medications in the second half year compared with the first half of the year. In turn, Zhang and Hashimoto<sup>[10]</sup> argue that the efficacy of controlling patients' moral hazard through an annual ceiling is limited whilst potentially worsening the inequity issue. The authors, therefore, suggest that the annual ceiling should be abandoned, and another type of payment system such as a global budget or case-mix-based payments be employed. To control moral hazard in terms of different prescribing behaviors, one of the endeavors the government implemented in 2004 was a "case-based payment" system, in which payment rates were set for individual diseases according to the International Classification of Diseases code.<sup>[14]</sup> The case-based payment system has been used in more than one-quarter of all hospitals in China,<sup>[15]</sup> and evidence has shown a promising reduction in health expenditures.<sup>[16]</sup> To investigate whether employing annual reimbursement ceilings results in patients' discretionary prescription behavior, we suggest future studies that can observe whether health expenses in the first half year differ from that in the second half year for those covered by health insurance without an annual ceiling, with pure OOP payment, or using a "case-based payment" system.

There is a long on-going debate within China whether our health system should remain government-led or become market-led.<sup>[17]</sup> The government-led approach has been dominant since new China was established, with money flowing directly from the Ministry of Health to the public facilities. One consequence is that healthcare providers do not have to compete for better patient satisfaction. On the contrary, in a market-led healthcare system the healthcare providers, either public or private, have to compete based on their performance. The major differences between these two approaches lead to varied resource use and quality of health services.<sup>[18]</sup> Government monitoring of the behavior of healthcare providers is critical to avoid inefficient resource use. The last main finding from the study is a good mirror

of different behaviors in health resource use between health insurance with and without surveillance. China is attempting to explore the market mechanisms of purchasing and competition to improve the quality and efficiency of the healthcare system, but the key question is to find a prudent purchaser who represents the best interest of the general public. In the current mixed system of both government and market ingredients, surveillance of the healthcare providers is necessary to prevent inefficient resource use.

The limitations of the study were adequately addressed but need further expansion. First, a paucity of data on patients' socioeconomic status (SES) is a substantial pitfall of this study. SES has been shown to be strongly related to health conditions,<sup>[19]</sup> health financing,<sup>[9]</sup> and health resource consumption.<sup>[20]</sup> What will be of interest is how medication consumption differs between patients with different co-payment rates after controlling for SES, and whether patients with different SES under the same health insurance plan consume medications differently? The second limitation is about the generalizability of the results; all the study participants were recruited in an orthopedic ward from a tertiary hospital in Beijing. Further studies are recommended with participants from all levels of hospitals in different places with all levels of SES. In addition, all the analyses were based on inpatient service use. With larger policy disparity across different health insurance plans in outpatient service reimbursement, it is recommended to perform a future study of the patients' and healthcare providers' behaviors with outpatient service use comparing the different incentives in the Chinese health insurance systems.

The optimal objective of Chinese healthcare reform is to build an accessible, affordable, equitable and sustainable healthcare system with reasonably good quality healthcare. On the road to the goal it is recommended for China to take a stepwise approach with close surveillance of equity issues of healthcare financing, distribution, and consumption. The health insurance should be designed to benefit those who are most in need, protecting them from the risk of catastrophic payments. As the OOP payment is still a burden to beneficiaries of health insurances with high co-payment rates, future healthcare reforms are recommended to identify the high risk individuals and households facing poverty due to healthcare expenses, and more importantly, to protect them from economic catastrophes. In a recent study from Chen *et al.*, they reported that the inequity issue still exists in China's healthcare financing distribution system: OOP payment became proportional after China's healthcare reform, which implied that the middle and especially, low-socioeconomic groups would bear increasing OOP payments. The good news from the study is that the progressivity of OOP payment has decreased after the introduction of the latest healthcare reform.<sup>[9]</sup>

Furthermore, an evidence-based decision-making process is encouraged to be practiced for more efficient use of healthcare resources. Health technology assessment (HTA)

and pharmacoeconomics (PE) are typical evidence-based processes that have been accepted in China health policies, and the selection of essential medicines, drug pricing, and clinical pathway was encouraged to gradually incorporate HTA/PE evidence according to the healthcare reform requirements. PE is a branch of economics aimed at how to best use scarce healthcare resources, that is, to maximize health gains possible within the healthcare budget. The need of enhancing PE in China comes with two imperatives: (1) It is estimated that almost half (49%) of the total population in China will be 50 years or older by 2050.<sup>[21]</sup> To minimize the effect of population ageing, new medications and disease prevention programs will continue to be introduced. (2) However, although generally the new medications and medical devices are more effective than those currently in the market, they incur higher opportunity costs. The challenge to the healthcare decision makers though is how to reimburse the technologies with the most health gain and with least possible money spent, that is, cost-effective. In different jurisdictions, acceptance of new drugs are based on different willingness-to-pay thresholds expressed as currency per quality-adjusted life years gained, such as \$50,000 in the US,<sup>[22]</sup> and approximately  $\leq 30,000$  in the UK.<sup>[23]</sup> The recommendations from the WHO of three times the per capita GDP in developing countries<sup>[24]</sup> was used for the Chinese PE guidelines.<sup>[24,25]</sup> Although there is an increasing trend of more PE publications in China that indicates its popularity in academia,<sup>[26]</sup> there is still a need to have legislation to promote HTA/PE evaluations in China.

## ACKNOWLEDGMENTS

The authors would like to thank Dr. Amanda Neil for her useful comments on this paper.

## REFERENCES

- Ramesh M, Wu X, He AJ. Health governance and healthcare reforms in China. *Health Policy Plan* 2014;29:663-72.
- Healthcare: Health insurance covered more than 95% of the population (in Chinese): *China Today*. Available from: [http://www.chinatoday.com.cn/ctchinese/reports/article/2012-11/08/content\\_498416.htm](http://www.chinatoday.com.cn/ctchinese/reports/article/2012-11/08/content_498416.htm). [Last accessed on 2014 Oct 06].
- Chen M, Chen W, Zhao Y. New evidence on financing equity in China's health care reform – A case study on Gansu province, China. *BMC Health Serv Res* 2012;12:466.
- Life expectancy and infant mortality rate by country: The World Bank. Available from: <http://data.worldbank.org/indicator/SP.DYN.LE00.IN/countries>. [Last accessed on 2014 Oct 06].
- Blumenthal D, Hsiao W. Privatization and its discontents – The evolving Chinese health care system. *N Engl J Med* 2005;353:1165-70.
- Ministry of Health. *China Health Yearbook*. Beijing: Ministry of Health; 2010.
- Blomqvist Å, Qian J. Health system reform in China: An assessment of recent trends. *Singapore Econ Rev* 2008;53:5-26.
- Sun X, Jackson S, Carmichael G, Sleigh AC. Catastrophic medical payment and financial protection in rural China: Evidence from the New Cooperative Medical Scheme in Shandong province. *Health Econ* 2009;18:103-19.
- Chen M, Zhao Y, Si L. Who pays for health care in China? The case of Heilongjiang province. *PLoS One* 2014;9:e108867.
- Zhang CY, Hashimoto H. How do patients and providers react to different incentives in the Chinese multiple health security systems? *Chin Med J* 2015;128:633-8.
- Kiil A, Houlberg K. How does copayment for health care services affect demand, health and redistribution? A systematic review of the empirical evidence from 1990 to 2011. *Eur J Health Econ* 2014;15:813-28.
- Kupor SA, Liu YC, Lee J, Yoshikawa A. The effect of copayments and income on the utilization of medical care by subscribers to Japan's National Health Insurance System. *Int J Health Serv* 1995;25:295-312.
- Barber SL, Yao L. *Health Insurance Systems in China: A Briefing Note*. Geneva: World Health Organization; 2010.
- Meng Q. *Health provider payment reforms in china: An updated review*. Washington, DC: World Bank; 2008.
- World Bank. *Health Provider Payment Reforms in China: What International Experience Tells Us*. Washington DC: World Bank; 2010b.
- Yip WC, Hsiao W, Meng Q, Chen W, Sun X. Realignment of incentives for health-care providers in China. *Lancet* 2010;375:1120-30.
- Yip W, Hsiao WC. The Chinese health system at a crossroads. *Health Aff (Millwood)* 2008;27:460-8.
- Hsiao WC. Why is a systemic view of health financing necessary? *Health Aff (Millwood)* 2007;26:950-61.
- Ma X, McGhee SM. A cross-sectional study on socioeconomic status and health-related quality of life among elderly Chinese. *BMJ Open* 2013;3:e002418.
- Shih CC, Liao CC, Su YC, Yeh TF, Lin JG. The association between socioeconomic status and traditional chinese medicine use among children in Taiwan. *BMC Health Serv Res* 2012;12:27.
- International Osteoporosis Foundation. *Osteoporotic Fractures Cost China's Healthcare System Close to 10 billion USD annually 2014*. Available from: <http://www.iofbonehealth.org/news/osteoporotic-fractures-cost-china%E2%80%99s-healthcare-system-close-10-billion-usd-annually>. [Last accessed on 2014 May 12].
- Weinstein MC. How much are Americans willing to pay for a quality-adjusted life year? *Med Care* 2008;46:343-5.
- Towse A, Pritchard C, Devlin NJ. *Cost-effectiveness Thresholds: Economic and Ethical Issues*. London: King's Fund; 2002.
- Baltussen R, Adam T, Tan-Torres T, Hutubessy R, Acharya A, Evans D, *et al*. Generalized cost-effectiveness analysis: A guide. Geneva: World Health Organization; 2002. p. 71.
- China Center for Health Economic Research. *China Guidelines for Pharmacoeconomic Evaluations*. Beijing: China Center for Health Economic Research; 2011.
- Hu S, editor. *HTA Trends in China-The Present and Future*. Dublin: ISPOR 16<sup>th</sup> Annual European Congress; 2013, 2-6 November, 2013.

**Received:** 15-10-2014 **Edited by:** Huan Liu  
**How to cite this article:** Si L, Jiang QC. Challenges to the Chinese Health Insurance System: Users' and Service Providers' Perspectives. *Chin Med J* 2015;128:571-3.

**Source of Support:** This work was supported by a grant from National Natural Science Foundation of China (No. 71173001). **Conflict of Interest:** None.