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Examining the association between social health insurance participation and patients' out-of-pocket payments in China: The role of institutional arrangement

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ABSTRACT

Previous work on the relationship between social health insurance (SHI) participation and patients' out-of-pocket payments (OOP) in China has overlooked the mediating mechanisms of the institutional arrangement. This study establishes a conceptual framework involving the reimbursement, behavior management and purchasing mechanisms to elaborate on the institutional arrangement of SHI in China. Using structural equation modeling, data on 1645 hospitalized patients obtained from a nationally representative survey in China are analyzed. The results show that the behavior management and purchasing mechanisms of SHI perform poorly, undermining the function of the reimbursement mechanism and mitigating the association between SHI participation and OOP. As a result, SHI participation has a weak negative or even no significant association with the OOP of hospitalized patients. This seems to contradict the principles of SHI, which aims to reduce people's OOP and enhance their well-being. These findings are expected to provide valuable insights to the ongoing healthcare reform process in China.

1. Introduction

A wave of social health insurance (SHI) initiatives has swept across many developing countries in recent years (Hsiao and Shaw, 2007; Wagstaff, 2007). SHI, as an approach to financing the mobilizing of funds and pooling of risk, is seen by many health planners as a "magic" solution to health financing and delivery problems (Hsiao and Shaw, 2007).

SHI has made remarkable progress in China from the end of the 1990s to the beginning of the 2010s, alongside the restoration of Chinese social security systems under economic transition. In 1998, the state established the Urban Employee Basic Medical Insurance (UEBMI) scheme for employees with formal contracts in urban areas, replacing the traditional Labor Medical Insurance program; in 2003, the New Cooperative Medical Scheme (NCMS) succeeded the traditional Cooperative Medical Scheme and offered cover to rural residents; after that, in 2007, the state piloted the Urban Resident Basic Medical Insurance (URBMI) scheme for unemployed urban residents and then gradually expanded it to other cities. At the time of writing, the SHI system in China comprises four schemes: UEBMI, URBMI, NCMS, and Government Medical Insurance (GMI) for employees in government and public institutions, with GMI enrollees being gradually transformed to the UEBMI. By 2011, the SHI system in China had almost reached universal coverage, with over 90% of residents enrolled in these schemes (Yip et al., 2012).

The slogan favored by those who advocate SHI is that it decreases patients' out-of-pocket payments (OOP) and hence reduces health-related financial problems. However, the problem of the affordability of healthcare seems not to be mitigated by the development of SHI, even though such schemes now cover almost the whole population in China. A 2010 survey shows that public complaints about the problems of healthcare reform and affordability in urban areas increased from 21.1% in 2007 to 34.8% in 2009 (Horizon China Research and Consultation Group, 2010). Using data from three household surveys, Wagstaff and Lindelow (2008) suggest that SHI participation actually increases the risk of high and even catastrophic spending. Other studies note that participation in various SHI schemes has no measurable effect on the reduction of financial risk (Sun et al., 2009a,b; Yip and Hsiao, 2009;

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Wagstaff et al., 2009; Lei and Lin, 2009; Long et al., 2010; Liu and Tsegao, 2011). Nevertheless, other studies draw the opposite conclusion, arguing that different SHI schemes are indeed effective in reducing people's medical expenses and enhancing the affordability of healthcare (Liu et al., 2011; Jung and Liu, 2012).

Why is the impact of SHI participation on the problem of affordability and medical expenses so controversial? Specific effort should be devoted to investigating the mechanisms by which SHI participation affects patients' OOP in more depth. SHI is theoretically not only a financial intermediary which aims to reimburse its enrollees, but also a policy instrument to regulate care-seeking behaviors and an active purchaser involved in regulating and inspecting the perverse incentives to providers (Hsiao, 2007; Eggleston et al., 2008; Yip and Hanson, 2009). In practice, the development of SHI is one of the major methods used to improve the performance of the healthcare system in China (Central Committee of Communist Party of China and State Council, 2009; Ministry of Human Resource and Social Security, 2011). In the first three years (2009–2011) of the latest healthcare reforms, the government invested more than ¥1.4 trillion (Chinese *yuan*), of which about half was used to subsidize the demand to participate in various SHI schemes (Yip et al., 2012).

Previous studies attribute the problem of affordability and medical expenses in China to serious malfunctions in its healthcare systems, such as rapid cost inflation, distorted price schedules, perverse incentives for providers and supplier-induced demand for unnecessary care, passive purchasing performance and fee-for-service payments, failure of referral systems and tiered copayment requirements, non-evidence-based benefit packages and so on (Eggleston et al., 2008; Liu and Mills, 1999; Wagstaff and Lindelow, 2008; Yip et al., 2012; Yip and Hsiao, 2008, 2009). However, few studies investigate the mediating mechanisms of the institutional arrangement of SHI in linking participation to outcomes. Given the rapid development of SHI in China, an emerging question is whether its development can improve the performance of various parts of the healthcare system and, in turn, improve the affordability of healthcare.

Using data from the China Health and Retirement Longitudinal Study, this study aims to investigate the association between SHI participation and patients' OOP as well as the mediating role of institutional arrangement in this relationship. It is expected to fill the knowledge gap in previous studies which have overlooked these aspects of SHI. Moreover, to date most performance measurement targets in Chinese healthcare reform have been criticized as being input-based (such as finance, enrollment, training sessions, and buildings) rather than outcome-based (Yip et al., 2012). Without cost-effective institutional arrangements, the lion's share of health investment in China is likely to be wasted and to be captured by providers as higher income and profits rather than producing benefit and improved wellbeing for patients. This serious potential problem, along with the commendable development of SHI, makes it both necessary and urgent to investigate the performance of the institutional arrangement of SHI and to assess its role in transforming benefits and input into cost-effective services and the wellbeing of the people.

2. Institutional arrangement of SHI

Debates about the relationship between welfare rights of participation and people's wellbeing have been going on for a long time (Taylor, 2007; George and Wilding, 1994). Nevertheless, an increasing number of scholars deemphasize the nature of welfare rights *per se*, focusing instead on the rationality and efficiency of the institutional arrangement of social policies (Gilbert and Terrell, 2013; Le Grand, 1993). Institutional arrangements denote the mechanisms in the policy process from welfare participation to outcome. A rational and efficient social policy can redistribute resources and improve people's wellbeing. Taking a resource allocation perspective, Dwyer (2000) uses the questions of *who gets what, how they get it and why they are seen as being entitled to it* to reveal the key elements of the institutional arrangement of welfare policy. Similarly, Gilbert and Terrell (2013) employ a benefit-allocation framework to interpret social welfare policies as choices among principles determining *what benefits are offered, to whom they are offered, how they are delivered, and how they are financed*.

Following these insights, five institutional components can be detected: the target of welfare benefits (who gets welfare benefits), benefits provision (what benefits are offered), provision rationale (why beneficiaries are seen as being entitled), provision mode (how benefits are delivered), and financing (how benefits are financed). This study considers the target of benefits to be in itself an institutional component, reflecting welfare participation, and SHI as an approach to health financing. Therefore, the study excludes the components of target and financing, and constructs a conceptual framework of institutional arrangements which involves benefits provision, provision rationale and provision mode to explore the vehicles for the delivery of SHI.

2.1. Benefits provision: the reimbursement mechanism

Social democracy theory sees welfare benefits as necessary to realize social solidarity. Structural inequality is seen as a major threat to freedom, and the provision of welfare benefits by government as an effective means of creating and increasing individual freedom (Titmuss, 1963). Thus, the logic of social democracy theory seems to be straightforward: one obtains welfare benefits through enrolling in welfare programs, and as a result enhances one's wellbeing. That is, the performance of benefits provision mediates the effect of participation in welfare programs on beneficiaries' wellbeing.

The reimbursement mechanism is the first and most important institutional arrangement of SHI to generate a risk-spreading function and to provide benefits. A SHI agency collects premiums and pools them into a shared account. Enrollees can have the lion's share of their medical expenses reimbursed by the pooled funds when they spend with the designated healthcare organizations (Hsiao and Shaw, 2007). The increase in the reimbursed fee indicates the improved performance of the reimbursement mechanism. Therefore, this study uses the variable *reimbursement rate* to represent such performance.

We thus develop the first hypothesis, namely that people enrolled in SHI schemes, whether GMI, UEBMI, URBMI, or NCMS, will enjoy a higher reimbursement rate than those who are uninsured, and further that reimbursement rate has a negative association with OOP (Hypothesis 1).

2.2. Provision rationale: the behavior management mechanism

Many neo-liberal and New Right scholars critique social democracy theory as focusing too much on the extent but not the nature of social policy (Taylor, 2007; George and Wilding, 1994; Mead, 1986). Universal welfare rights are regarded as socially damaging and the cause of many social problems such as welfare dependency and behavior dysfunctions of the underclass. Mead (1986) argues that the fundamental cause of these problems is the permissiveness of welfare programs rather than their size. If social programs are unavoidable, beneficiaries must take on some responsibilities, such as enrollment contribution and behavior management, before or after they enjoy the welfare rights offered. Welfare systems should therefore be concerned not only with