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The impacts of health insurance on health care utilization among the older people in China

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ABSTRACT

In an effort to solve the problems that exist in the current health care system, the Chinese government has announced three different types of health insurance programs. We examine the impacts of these programs (Urban Employee Basic Medical Insurance (UEBMI), Urban Resident Basic Medical Insurance (URBMI), and New Cooperative Medical Scheme (NCMS)) on health care utilization among older people in two provinces of China – Zhejiang and Gansu. The data comes from the pilot survey of the China Health and Retirement Longitudinal Study (CHARLS) collected in 2008, which contains 2685 individuals in 1570 households. We use a two-part model to analyze outpatient care. The first part is a binary equation modeling the probability of any use of outpatient service; For the second part, we use a zero-truncated Poisson model and a generalized linear model with a gamma distribution and a log link to explain the number of outpatient visits and the level of out-of-pocket (OOP) payments conditional on at least one visit to a service provider, respectively. For the inpatient care, the logistic regression is employed to predict the probability of being hospitalized. All analyses are weighted and marginal effects are reported. We find that compared with people without health insurance, people with UEBMI and URBMI are more likely to use outpatient services and people with UEBMI have less OOP payments in Zhejiang while in Gansu province, people with NCMS are less likely to have outpatient visits, while people with UEBMI are more likely to be hospitalized. In addition, among those who have at least one outpatient visit, different insurance types do not make much difference in terms of the number of outpatient visits in both provinces. Our study indicates that although the health insurance programs have some positive impacts on the health care utilization, these impacts are still limited.

Introduction

An important feature of China's economic reforms that began in 1978 is the dramatic change in its health care system. It is transformed within a few years from a centrally planned system to the world's largest market-oriented health system. One of the major problems with China's reformed health system is the dramatic drop in the health insurance coverage, therefore reducing people's access to health care, increasing out-of-pocket expenditures, and widening disparities in health and health care. Having realized and tried to solve these problems, the Chinese government has announced to launch three different types of health insurance in recent years: Urban Employee Basic Medical Insurance (UEBMI), Urban Resident Basic Medical Insurance (URBMI), and New Cooperative Medical Scheme (NCMS), in targeting different population groups, aiming to provide universal coverage of health services with a focus on equity in health and health care utilization.

Ever since then, several studies have investigated the impacts of health insurances on health care utilization in China. Gao, Raven, and Tang (2007) examined the trend of hospitalization amongst the elderly in urban China and found that elderly people with insurance were more likely to use inpatient services than those who were not insured. Wagstaff and Lindelow (2008) found that insurance increased the probability of using health services and the expected out-of-pocket payment and the risk of large out-of-pocket payments by using three survey data. Lei and Lin (2009) explored the impact of NCMS on health care utilization by using three waves of CHNS data (2000, 2004, and 2006). They found that participating

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in NCMS improved the use of preventive care, but did not increase utilization of formal medical services. In addition, they did not find the evidence that the NCMS decreased the out-of-pocket expenditure.

To date, few have focused on older people – one of the most vulnerable populations in China. China is now on the fast track of aging. According to the latest census data released in 2010, there are 177.6 million people 60 years or older in China, or 13.26 percent of the total population (National Bureau of Statistics of China 2011). In 2050, this number is expected to reach 437 million, or about 30 percent of the population (United Nation, 2002). The fast growth of aging population could cause far-reaching socio-economic consequences. On one hand, older people are at the highest risk of chronic diseases and therefore major users of health services; on the other hand, China's one-child policy means that China's older population today has fewer children to support them financially than in the past. How to deal with the problems of support for the well-being of older people is one of the greatest challenges to the fast booming Chinese society. The implementation of health care insurance programs is intended to partially address this issue, but how these programs work, especially for older people, is still uncertain. Our paper is among one of the first to examine the impacts of health insurance programs on health care utilization among the older people in China.

The purpose of this paper is therefore to examine how different types of health insurance programs (UEBMI, URBMI, NCMS) affect the following health care utilization outcomes among the older people in China: the probability of outpatient visits during the past one month, the intensity of outpatient visits during the past one month, individual out-of-pocket (OOP) expenditure for the most recent doctor visit, and the probability of being hospitalized during the past one year.

The current health insurance system in China

In December of 1998 the *Decision of the State Council on Establishing the Urban Employee's Basic Medical Insurance System* was issued, known as UEBMI (State Council, 1998). Compared with old insurance schemes, in addition to cover employees in the state owned enterprises (SOE), the government and State institutions, the new program expands coverage to all private and smaller public enterprises, but workers' dependents are not covered any more. The UEBMI is financed by premium contributions from employers (6% of the employee's wage) and employees (2% of their wage). Retired workers' premium contributions are fully borne by their former employers. The total contributions are divided into two accounts: individual medical savings accounts (MSAs; 3.8% of employee's wage) and social risk pool fund (SRP; 4.2% of employee's wage). Under this insurance scheme, enrollees are expected to use funds in the MSAs for all of their outpatient expenditures and funds in SRP for their inpatient expenditures after exceeding certain level of deductibles. Once the funds in MSA are exhausted, enrollee has to pay outpatient expenditures OOP and the maximum payment from SRP for each enrollee is four times the average wage of the workers in that city (Liu, 2002). The UEBMI is managed by each city's social insurance bureau (SIB). Local SIBs are responsible for collecting premium, contracting, and payment for services, and have a certain degree of discretion regarding the choices of deductibles, services covered, reimbursement methods, and methods of payment to providers.

URBMI was launched in 2007. According to State Council Policy Document 2007 No. 20, *Instructions on Establishing the Urban Employee Basic Medical Insurance Scheme*, the URBMI is a voluntary program that has to be enrolled at household level to reduce adverse selection (State Council, 2007). It aims at providing health insurance to primary and secondary school students, young children, and other unemployed urban residents. It is jointly financed by individual contributions and subsidies from central and local governments, and managed by local governments. Government contributions vary depending on the region's economic status and each individual's economic situation. However, it is required by the central government that the total annual government subsidy for each URBMI enrollee should not be less than 40RMB per year. Similar to the UEBMI, the local governments have autonomy in developing and implementing URBMI according to their specific needs. On average, the URBMI scheme covers 45% of related inpatient service medical cost and some outpatient chronic or fatal diseases (Lin, Liu, & Chen, 2009). The URBMI pilot program was initially launched in 2007, and was to be expanded to over 80% of cities nationwide by end of 2009, and 100% by 2010.

In February of 2003, the State Council issued the *Decisions of the State Council on Establishing a New Rural Cooperative Health Care System* to re-establish health insurance for the nation's entire rural population (State Council, 2003). According to the State Council Policy Document, the NCMS is a voluntary program that is funded by enrollee's premiums and by subsidies from central and local governments. The NCMS also requires full household participation, with either all or none of a household member participating in the program. It is operated by the bureau of health in each county government. Under the broad guidelines issued by the central government, each county government is given considerable discretion in the design and implementation of the NCMS, such as the risk covered, the emphasis on inpatient and outpatient expenses, the use of cost sharing policy, and so on, and therefore the programs' design and benefit packages vary geographically. A typical package involves a household MSA for outpatient expenditures and a SPA for inpatient expenses. Due to limited financing, coverage is typically shallow. Many services, particularly outpatient care, are not or only partially covered, deductibles are high, ceilings are low, and coinsurance rates are high (Lei & Lin 2009; Wagstaff, Lindelow, Gao, & Xu, 2009). The NCMS has expanded rapidly since its inception. About 95% of counties in China have been covered by the program by the end of 2009, with a total of 0.83 billion participants (China's Health Statistic Yearbook, 2010). Meanwhile, subsidies from various levels of government have increased considerably: the central and local government subsidy increased from minimum 20RMB in 2003 to minimum 80RMB in 2008 to minimum 120RMB in 2010 per enrollee per year (Lin et al., 2009).

Data and methods

Database

The present study uses data from the survey of the China Health and Retirement Longitudinal Study (CHARLS Pilot) collected from July to September in 2008. The detail of the pilot data is described in Zhao, Strauss, Park, and Sun (2009). Generally speaking, CHARLS was designed in the similar way to the US Health and Retirement Study as a broad-purposed social science and health survey of older people in China. The survey instruments is divided into seven sections: (a) Demographic Background, (b) Family, (c) Health Status and Functioning, (d) Health Care and Insurance, (e) Work, Retirement and Pension, (f and g) Income, Expenditure and Assets, (h) Interviewer Observation.

The CHARLS pilot sample is representative of people aged 45 or older, and their spouses, living in households in the two provinces of China: Gansu and Zhejiang. Zhejiang is located in the coastal region, which is one of the richest provinces in China. Gansu, on the other hand, is one of the poorest and one of the most rural