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Good News, Bad News: Results from a National Representative Panel Survey on China's NCMS



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Good News, Bad News: Results from a National Representative Panel Survey on China's NCMS

Hongmei Yi,¹ Linxiu Zhang,² Kim Singer,³ Scott Rozelle⁴

Introduction

Health is an essential part of human capital and plays an important role in the process of economic development. Good health has been shown to increase the supply of labour, improve productivity, raise the income-earning ability of the poor and lead to lower levels of poverty (Schultz *et al.* 1997; Bloom *et al.* 2001; Fan 2002; Thomas and Strauss 1997; Lindelow and Wagstaff 2005; Jalan and Ravallion 1999).

The most overarching purpose of a national health system is to ensure that the country's population is provided with sufficient health services so that the citizens of the country can attain the good health that is required for development (Rivera, Xu and Carrin 2006). Evidently, China believed enough in the importance of health during the pre-reform era (1950s through the 1970s) since it was thought to have one of the best records of any developing nation in achieving its health system objectives. After the onset of the economic reforms, however, China's priorities - or at least its ability to achieve its health goals - changed. Between the early 1980s and the late 1990s, China's health system deteriorated. During this period the use of medical care in China dropped sharply (Bloom and Gu 1997; Eggleston *et al.* 2006), especially in poor rural areas (Akin *et al.* 2005). The 2003 National Survey on Health Services (MOH 2004) reports that of those who said they should have been hospitalised but were not, nearly 80 per cent lived in rural areas. More than 85 per cent of those in China's poorest quintile stated that the reason was they did not seek medical attention was because they could not afford it (World Bank 2005).

One reason for the drop in the quality of health care in rural areas was the collapse of the Cooperative Medical System (CMS). Through the 1970s, more than 90 per cent of China's rural residents were covered by the CMS, a health protection system run by the commune (that is, the local government). The CMS was characterised by its collective (brigade or commune) financing and the delivery of health services that were implemented through a three tier system - village clinics (run by barefoot doctors), township health centres and county hospitals. This system played a vital role in improving the health of the rural population. However, the coverage rate of the CMS declined after 1980. Although China's government struggled to reconstruct the CMS several times in the early and middle reform period (1980s and 1990s), the coverage of the rural population by the CMS was only 9.5 per cent in 2003 (MOH 2004). The rest of the rural population was basically accessing health services on an out-of-pocket, fee-for-service basis.

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After the central government's command of budgetary revenues began to recover in the 2000s and concerns about the flagging state of health services in rural China emerged, top officials decided to initiate a new effort to raise the state of rural health care. Beginning in 2003 the government launched its new rural health care initiative called the New Cooperative Medical System (NCMS). The overall goal of the NCMS is to improve the access of rural residents to health services and - above all - help rural residents reduce the risks that accompany catastrophic illnesses (WHO 2004). Different from the CMS, the NCMS is run at county level and the central and local governments are supposed to bear the major burdens of funding NCMS. To the end of 2007, most provinces had a target of contributing at least 50 yuan per rural resident into the NCMS health insurance revenue pool. Of this amount, in most places rural residents were supposed to only contribute 10 yuan per person on a purely voluntary basis. According to government statistics, in the past five years the NCMS has expanded dramatically. In fact, the government recently claimed that it has already hit one of its main targets of covering all rural counties (MOH 2008).

When using information from surveys of rural households, what has been the record of the NCMS to date? In fact, there have only been a limited number of efforts to assess the effectiveness of the NCMS - especially ones that are both national in scope and done in recent months (for the ones that have been completed, please see: Chen *et al.* 2005; Zhang *et al.* 2006; Yuan *et al.* 2006; Dib *et al.* 2008). When looking at the results of the studies, the findings have shown the programme's past record can best be described as mixed. On the one hand, Chen *et al.* (2005) concluded that the NCMS played an important role in reducing the poverty caused by illnesses (generating the findings from data from a survey of 1080 households in Hubei province - 2005). Zhang *et al.* (2006) found that although the participation rate was high in NCMS-covered villages, the reimbursement rate was far lower than what had supposedly been promised (using a national representative survey from five provinces). Using survey data from a county of Jiangxi province, Yuan *et al.* (2006) found that NCMS increased the rate of hospitalisation (or inpatient care) of rural residents. Despite the improvements, many respondents reported that they did not seek medical services because it was still too expensive. Using a 15924-household survey in 32 counties, the NCMS Pilot assessment group made up of researchers from Peking University, the Chinese Academy of Social Science, and the Centre for Health Statistics and Information of the MOH stated that the hospitalisation rate increased by 52.7 per cent and that after receiving their NCMS reimbursement, the share of inpatient expenditures - measured as a share of net per capita income - dropped by 24 (from 89 per cent to 65 per cent). Given the importance of health in the rural population and the size and expense of the NCMS programme, it is somewhat surprising that there are no recent (or periodic) national-level, economic studies that empirically assess the effectiveness of the programme over time.

The overall goal of our paper is to understand the progress of the implementation of NCMS, seeking to assess the strengths and weaknesses of the programme and to understand its effect on rural residents using two rounds of national-representative household survey data that were collected initially in 2005 and more recently in 2008 (focusing on the impacts of the programme to the end of 2007). To meet this goal, we are trying to achieve three specific objectives: a) to assess whether or not rural residents believe they have a need for health insurance from the prospective of demand side; b) to describe the progress of NCMS over time, including the coverage,

participation and nature of the payments by household; and c) to describe the effect of NCMS on medical services used by rural residents and try to understand if there are still shortcomings in the NCMS programme.

To meet the objectives, the rest of the paper is organised as follows. The next section describes the data that forms the basis for this paper. The following two sections look at the need for health insurance in rural China and examine the progress the nation has made in creating and extending the NCMS programme. The final substantive section examines the strengths of the NCMS programme as well as several of the shortcomings. The final section concludes.

1. Data

The data are from two rounds of household-level surveys led by the Chinese Academy of Sciences' Centre for Chinese Agriculture Policy in Beijing in collaboration with Sanford University and MIT from the USA. The two surveys were conducted respectively in 2005 and 2008 and focus on a time period which spans from the first full year after implementation (to the end of 2004) and the fourth full year after implementation (to the end of 2007). Being a true panel (that is we made repeat visits to the same households in the same villages in both time periods), the data provide an opportunity to examine the progress of the NCMS effort and impact. Given the timing of the most recent data collection effort, there are few other studies with such recent information - especially from the household's point of view.

The first round of the survey was conducted in April 2005 using a randomly selected, nationally representative sample of 100 rural villages in five provinces (Jiangsu, Sichuan, Shaanxi, Jilin and Hebei). The sample provinces were randomly selected from each of China's major agro-ecological zone. Five sample counties were then selected from each province by a two-step procedure. In the first step the enumeration team listed all counties in each province in descending order of *per capita* gross value of industrial output (GVIO). GVIO was used on the basis of the conclusions of Rozelle (1996) that GVIO is a good predictor of standard of living and development potential and is often more reliable than net rural per capita income statistics. In the second step, the five sample counties were selected randomly from each list. After the county selection was completed, the team then chose the sample townships and villages following the same procedure that was used in the selection of the counties. Finally, the survey team used village rosters and the survey team's own counts (of households that were living in the village but not on the roster) to choose randomly twenty households with each village. In the first round, eight of the households participated in a full household survey; while 12 of the households only participated in a focus group. Descriptive statistics examining the characteristics of both sets of households showed that the two groups were identical. In total, 800 households and 3141 individuals (approximately four members per family) were included in the survey.

The second round survey was conducted in April 2008. The enumeration teams visited the same provinces, counties, townships, villages and households that had been sampled and surveyed in 2005. During the second round, the enumerators re-implemented nearly the same survey instrument (as in 2005). This time, however,

the household survey was given to all 20 households per village (the original eight survey households and the 12 households that were part of the focus group in 2005). In total the household survey covered 2000 households and 7939 individuals.⁵

The household survey form was designed to collect information on a wide number of variables, including information on each individual's participation in the NCMS programme, health status and the medical history of each household member during the previous year. In particular, questions were asked about whether or not NCMS was available in the village and, if so, whether or not each household member participated (and whether the decision was voluntary or not). The respondents also provided information about the reasons why certain individuals did not participate in the programme. The questionnaire included a special block that focused on collecting individual health information. In particular, each respondent was asked whether or not he/she got sick during the previous year and how (and if) he/she responded (by seeking outpatient, inpatient or no medical care). The survey also documented detailed information on two episodes of illnesses during the year, including information on "the most recent illness" and "the most serious illness." This block of the survey included information on such variables as: the place at which each individual sought medical care; the treatment; the total expenditure; whether or not the doctor/clinic was part of the NCMS system. In addition, we carefully documented for each episode, all expenses that the household spent on medical care and the share that was covered by insurance (as well as other sources of financing).

Finally, the enumeration team sent one of its members to interview doctors in the village clinics; doctors and hospital administrators in the township health centres and officials in the county NCMS office. During the interviews, we gathered detailed information on NCMS policy for both 2004 and 2007. In each county, among other pieces of information, we documented the amount of the payment that the NCMS programme demanded of the participants in their county; the nature of the matching payments (the share contributed by the local/regional governments and the central government); the reimbursement rules, such as the size of the deductible, the reimbursement rates (for different levels of expenditures) and ceiling regulations.

2. Need for Health Insurance

In China's post-reform rural economy, there is no doubt that many rural households could benefit from a high quality, effective health insurance programme. According to our data, approximately 75 per cent of all sample individuals self-reported being ill at least once during 2004; 25 per cent of all individuals self-reported to be chronically ill (e.g. diabetes, high blood pressure, back problems or heart disease).⁶ About 90 per cent of those that were ill sought some type of medical care, including 7 per cent that chose inpatient care in a county hospital or township health centre. The incidence of individuals in the sample that self-reported being ill was similar in 2007. In fact, the number of people with illnesses that cost more than 5000 yuan (measured in real

⁵ If the household selected in 2005 migrated out of the village, the enumeration team selected a replacement household following the same procedure that was used in the selection of the households in 2005. The second round survey included a total of 2020 households. By the end of the survey, 84 per cent of original households surveyed in 2005 were successfully re-surveyed in 2008. In total, we have observations on 681 households for both years.

⁶ We gave respondents leeway in their response about what was counted as "being ill." We instructed all individuals that were surveyed to tell us to report on all episodes in which they considered themselves "to be ill."

terms - which in the paper we define as *catastrophic*) to treat—both for inpatients and outpatients - rose between 2004 and 2007.

It is also clear, according to our data, that there is a need for greater access to health care all over China, especially in the case of poor villages. In 2004, there was a particularly high incidence of chronic illnesses in the poorest villages. While only 19 per cent of individuals in our sample self-reported being chronically ill in the richest villages; 29 per cent did so in the poorest villages. Rural residents in poorer villages also self-reported higher incidences of being seriously ill (also a subjective concept - 6 per cent) than those in richer villages (10 per cent). The percentages changed little between 2004 and 2007.

Although from the discussion of the nature of illnesses, the data might seem to indicate that individuals in poorer villages suffered from more serious illnesses, they did not necessarily receive more care. In fact, according to our data, in 2004 of those who were sick and did not seek medical care, it is six times more likely that those in poor areas did not seek medical care due to financial difficulties than in richer villages. In short, although the data suggest that those in poor areas had higher medical care needs, it was more likely that poor households were unable to receive the care that they needed.

Our data also suggest that many individuals that self-reported having a serious illness cannot afford to be hospitalised. In our entire sample, of the 316 individuals that self-reported having a serious illness but did not opt to stay in a hospital in 2004, there were many reasons for not doing so. For example, 7 per cent said they lived too far from the hospital. Five per cent said when they sought medical care there were not any beds available. About 30 per cent said their disease was incurable and decided against seeking any further treatment. Although non-financial constraints are part of the reason for not seeking medical care, by far, of those who did not seek medical care, the most (56 per cent) cited financial problems directly.

In 2007, a similar pattern was found from the data provided by the 2000 household surveys. During the survey, we asked the nearly 8000 individuals in the sample about their most serious episodes of illness (note: this definition of “most serious illness” - which was based an expenditure measure - is different than the subject measure of “being seriously ill.” Of the total number of respondents, 4700 reported that they had at least one episode of a “most serious” illness. Many of these (around 4000) stated that they did not go to a hospital and receive inpatient treatment. By far (about 3200) said that they did not seek inpatient treatment because the illness was not actually severe enough (which - by default - means that they received outpatient treatment). Of the patients that should have received inpatient treatment but did not (701 individuals), 377 of them reported that they did not receive inpatient care because they could not afford it. Clearly there is a need - at least for a large part of the population - for some kind of assistance to help them afford health care in rural areas.

Even using such simple-to-collect descriptive statistics from a sample survey, the need for a rural health insurance plan is clear. Like people everywhere, those in rural China have a great need for health care services. Most people get sick each year, many seriously. With rising health care expenses, health costs are rising over time (World Bank 2004; Yip and Hsiao 2008). Our data show that most individuals in rural

China are able to seek treatment. However, there are a considerable number in all areas, but especially poorer areas, that cannot afford medical care. It is certainly at least in part due to this set of circumstances that nearly 10 per cent of the rural residents that we interviewed during our surveys believed the health care system had deteriorated in recent years.

3. Availability of and Participation in the New Cooperative Medical System

Although our data showed that there was a great need for NCMS in both years of our survey, as of the end of 2004 the programme still had not spread very far and did not appear to be targeted very well. Only 24 of the 100 sample villages were covered by NCMS in 2004 (Table 1, row 1). Of the 3141 individuals that we surveyed in 2004 during our household survey, only 783 (or 24 per cent of the sample) were living in villages that were covered by the NCMS programme (henceforth called *covered individuals*). The level of coverage of our sample, in fact, was close to the national number at that time. According to the China National Statistics Bureau, by the end of 2004, 23 per cent of individuals were covered by NCMS (NSB 2005).

The progress over the past several years in coverage could not have been more successful. In our sample villages by the end of 2007, 100 per cent of villages were covered. In addition, more than 90 per cent of individuals in the covered villages were participating in the programme at the end of 2007. If our sample villages are truly representative of China, it would mean that at least 90 per cent of the rural population is now participating in the NCMS programme. In other words, our point estimate of all of China is that there are now more than 750 million covered individuals in the rural population.

The figures from our survey, in fact, are close to those reported by the Ministry of Health (MOH 2008). In July 2008, a spokesman for the ministry reported that its goal of 100 per cent coverage of China's counties had been achieved. According to ministerial statistics, enrolment rates were 91 per cent by the end of March 2008. When compared to the early 2000s when less than 10 per cent of the population was covered by a national health insurance programme, by any metric the progress has been rapid and comprehensive.

As in 2004, our data also demonstrate that the programme is truly voluntary and the survey also illustrates that there has been progress in the design of the NCMS programme. Fully 98 per cent of participants told the enumerators that the programme was voluntary. In all of the counties outside of Jiangsu in our sample, the covered individuals all made a single 10 yuan payment - on their own. In Jiangsu, although the payments were also almost all voluntary, the payments ranged from 10 yuan in one of the sample counties, to 15 yuan in one county, to 20 yuan in two counties, to 40 yuan in one county, the richest county in our sample.

There is also evidence that the design of the NCMS programme has improved (Table 2). If an individual in the sample did not participate in the NCMS programme, we asked why. The pre-coded reasons were divided into two major categories - for personal reasons (including, "I am already covered by other insurance"; "My

household registration (*hukou*) is not in this village”; “I do not expect to get sick in the coming year”) and for reasons that might be interpreted to be associated with the faulty design of the NCMS programme (including, “I am working in another place and cannot be covered - or it is inconvenient”; “The reimbursement rate is too low”; “The reimbursement procedure is too complicated”). In 2004, nearly half (47 per cent) of the non-covered individuals stated that problems with the programme design were the major reason that they did not participate. Only 18 per cent said so in 2007. For example, more than 10 per cent of the individuals in covered villages did not participate in the NCMS programme in 2004 because they did not live and work in the village (that is, they were a migrant worker); only one per cent of all individuals in our sample said this was the reason for not participating. Most of those that were not covered in 2007 (69 per cent) stated it was due to some personal reason.

Another question in our survey supports the finding that the current NCMS programme is running relatively smoothly. In 2004 there were many complaints (in both the household survey and during our focus groups) about the slow processing of reimbursements for NCMS-related expenses. In 2007, 87 per cent of respondents stated that they were reimbursed within one week. In some township health centres and county hospitals patients did not even need to apply for reimbursement; their final bill was reduced by the amount that they needed to pay by the amount that was covered by the NCMS programme.

4. Effects on the Rural Population

While not all of the increase in the use of medical services between 2004 and 2007 is necessarily due to the NCMS programme, there has been an observed rise in the use of health care services between the two waves of the survey. In response to the question, “Did you seek medical services when you got sick last year?” the share of individuals that responded “yes” rose from 90 to 95 per cent. The share of those that used inpatient medical services rose from 7 per cent in 2004 to 10 per cent in 2007.

Rising *per capita* medical expenditures in real terms also demonstrate that there is at least some propensity to increase expenditures on health care - for both those in poorer villages and richer villages (Figure 1). Outpatients (that is, conditional on seeking outpatient services) in poor areas increased their expenditures by 15 per cent, increasing from 572 yuan to 656 yuan (Panel A). Expenditures by outpatients in richer areas rose from 390 to 565. Expenditures on inpatient care also rose (Panel B). Inpatients in poor villages increased expenditures by 43 per cent from 3362 to 4796. Those in richer villages increased expenditures from 5819 to 7789 yuan.

The rise in direct programme payments - especially relative to the premium that individuals are paying - provides more demonstrative evidence that the NCMS programme is improving. In 2004 the expected level of reimbursements to individuals was extremely low. After making a premium payout of 10 yuan, the average individual in the sample (averaging over all covered individuals) received 14 yuan in reimbursements. If the two largest reimbursements were removed, the expected reimbursement was only 9 yuan, a level lower than the premium. One of the biggest issues during the early life of the programme was that while the combined investment

into the programme from individuals and local and the central government was 35 yuan per individual, the actual payout rate (14 yuan) was far lower.

By 2007 the situation had changed dramatically in a number of dimensions. First, the combined investment from individuals and local and the central government rose to 50 yuan. The share of the central government's contribution accounted for most of the rise. In addition, the expected reimbursement rose. While the premium was still 10 yuan (for most participants), the average covered individual received back 47 yuan. Not only does this mean the return on the 10 yuan was high (a fact that almost certainly accounts for the popularity of the NCMS programme in rural areas and its high rate of participation), it also means that the share of the total investment used for reimbursements also was much higher, rising from 40 per cent in 2004 (14/35) to 94 per cent in 2007 (47/50).

5. Shortcomings in the NCMS Programme

While from casual observation it initially appears as if the reimbursement performance by the NCMS programme is performing well, closer scrutiny reveals a number of possible weaknesses, some of them serious. First, the raw reimbursement rate did not rise between 2004 and 2007. In 2004, 22 per cent of covered participants who sought medical attention (for any degree of medical care - either inpatient or outpatient) were reimbursed for at least some share of their expenditures. In 2007, only 21 per cent of covered patients were reimbursed.

The fall in the share of those who were reimbursed might have occurred if the NCMS programme had shifted its emphasis from reimbursing those who incurred relatively small medical expenses to those who incurred large medical expenses. The data, however, do not support this explanation. In fact, in 2007, of those that received reimbursement, a large share of them (36 per cent) incurred expenses less than 200 yuan (Figure 2, Panel A). An even larger share (41 per cent) of all of those that received reimbursements incurred expenses between 200 and 2000 yuan. In other words, 77 per cent of those that received reimbursements incurred medical expenses under 2000 yuan.

The tendency to favour reimbursements to those that incurred lower levels of expenditures is born out by data that look at the contribution of NCMS reimbursements to total health expenditures. Although overall the reimbursement rate in 2007 for both inpatients (15 per cent) and outpatients (4 per cent) was higher than that in 2004 (for both inpatients - 7 per cent - and outpatients - 3 per cent), the current NCMS programme appears not to be achieving its objective to help rural residents deal with catastrophic illnesses. As seen in Figure 2, Panel B, as one goes from expenditure categories (for inpatient care) from expenditures of 200 yuan to 2,000 yuan; 2,000 yuan to 5,000 yuan; 5,000 yuan to 10,000 yuan; and 10,000 yuan and above, the reimbursement rate falls. Notably, for those that suffered relatively catastrophic illnesses (henceforth, the term for all illnesses in which the inpatient expended more than 5,000 yuan) the reimbursement rate was between 11 per cent (for illnesses between 5,000 yuan and 10,000 yuan) and only 8 per cent (for illnesses above 10,000 yuan).

It is not that rural residents are not willing (or even pleased) to receive the levels of reimbursement that are being offered, but it is clear when asking respondents who participated in NCMS for the sources of funds for covering catastrophic illnesses that the NCMS programme is only playing a minor role (Figure 3). For example, in the case of inpatient care for catastrophic illnesses, the NCMS programme only contributes 9.8 per cent (which is between the 11 and 8 per cent shown in Figure 2, Panel B). To finance the rest of their medical expenses, rural households draw on their own savings for 57 per cent. They borrow from friends and relatives for 17 per cent. They even sell off assets to finance 1.4 per cent of the expenditures on catastrophic inpatient expenditures. So, although any little bit helps, the reimbursements from the NCMS programme are nowhere near a level that they can be said to be providing true insurance against the risks of catastrophic insurance.

According to our data, the problem clearly appears to be that rural residents are not being reimbursed at the levels being promised by the NCMS programme rules. In each of the counties, our enumerators collected information on the level at which different illnesses should be reimbursed. In Figure 2, Panel C, we plotted the official reimbursement rate (right hand bar for each category - averaging about 40 per cent of expenditures) against the actual reimbursement rate (left hand bar). Clearly, the patients are not receiving what the programme is promising. Moreover, the gap widens as the severity of the illness (in expenditure terms) rises.

Further analysis illustrates that the main problem is one of not having sufficient funding. To show this, we begin our analysis by totalling the contributions from the 7175 individuals (participants), 25 local governments (usually county governments) and the central government. In total, the localities for this sample of individuals would have at its disposal a revenue pool of 358,750 for insuring all illnesses of the covered individuals during 2007. As shown in Table 3, however, 358,750 yuan falls far short of being able to cover all of the obligations (promises) of the programme. If instead of using the funds the way that they were used (columns 2 and 3), all of the funds were used to reimburse inpatients with catastrophic illnesses for 22 per cent of their expenditures (a level that is still only half of what the programme promises), all of the funds would be (more than) used up (columns 4 and 5). If the illnesses in all of the categories were reimbursed at the same rate, columns 6 and 7 show that there were only enough funds to reimburse 16 per cent of inpatient care (and that is after giving nothing for outpatient care). Finally, if all of the funds were used for extraordinarily severe illness (greater than 10,000 yuan), in total all of the funds could only cover 31 per cent of the output of the residents.⁷ Clearly, from all of these simple illustrations, the programme is severely under funded - even for the level of promises made by the programme currently.

Conclusions

In this study, we use a nationally representative panel survey of 2000 households in 2004 and 2007 to investigate the newly launched NCMS from the perspective of rural

⁷ Note that in these simple exercises/simulations, we are assuming that when more of the total expenditure rate is being covered by the NCMS programme (which can be construed as the true price of seeking medical care falls), there is no response by the sample individuals to seek more health care. However, it is well known that the demand for health care is price elastic and so this response would mean that the programme is even more under funded.

residents. From our data, we can conclude that there continues to be a strong demand for medical coverage in rural areas, especially in low income regions. There are still many rural residents in China who need more health care than they can afford. During our field work, we found that there were few demands for social services that were in greater demand than insurance for health care.

In terms of developing a new programme that can provide a foundation to address the need for a rural health system, China's NCMS programme has made tremendous progress. The coverage of villages has reached 100 per cent. Nearly 90 per cent of rural individuals are covered by the NCMS. It is voluntary. The programme design is improving. Based on our data and on our interviews, there is no other way to put it: NCMS is a popular programme in China's countryside.

However, China's NCMS programme still has a long way to go if it is to meet its own goal to help rural residents minimise the risks associated with contracting catastrophic illnesses. The programme reimburses rural residents for only a small share - less than 15 per cent of their total health costs. More troubling is the fact that the reimbursement rate falls as the severity of the illness (in expenditure terms) rises.

We have shown in a simple quantitative accounting exercise that the fundamental problem is that the programme is under funded. There are simply just not enough funds in the system to meet the promises of the programme. In fact, this would be true if the government carries through on its new promise to increase funding of the NCMS programme to around 100 yuan per individual. According to our analysis, even without considering the price elasticity of health care expenditures, the programme could not even meet the promised level of reimbursement (40 per cent or so) for those inpatients with illness requiring expenditures of more than 5,000 yuan. If those with catastrophic illnesses received 40 per cent (even with the government providing 100 yuan per rural individual in the programme), there would be no funding left to reimburse any inpatient with an illness costing less than 5,000 yuan (as well as having zero for outpatients)

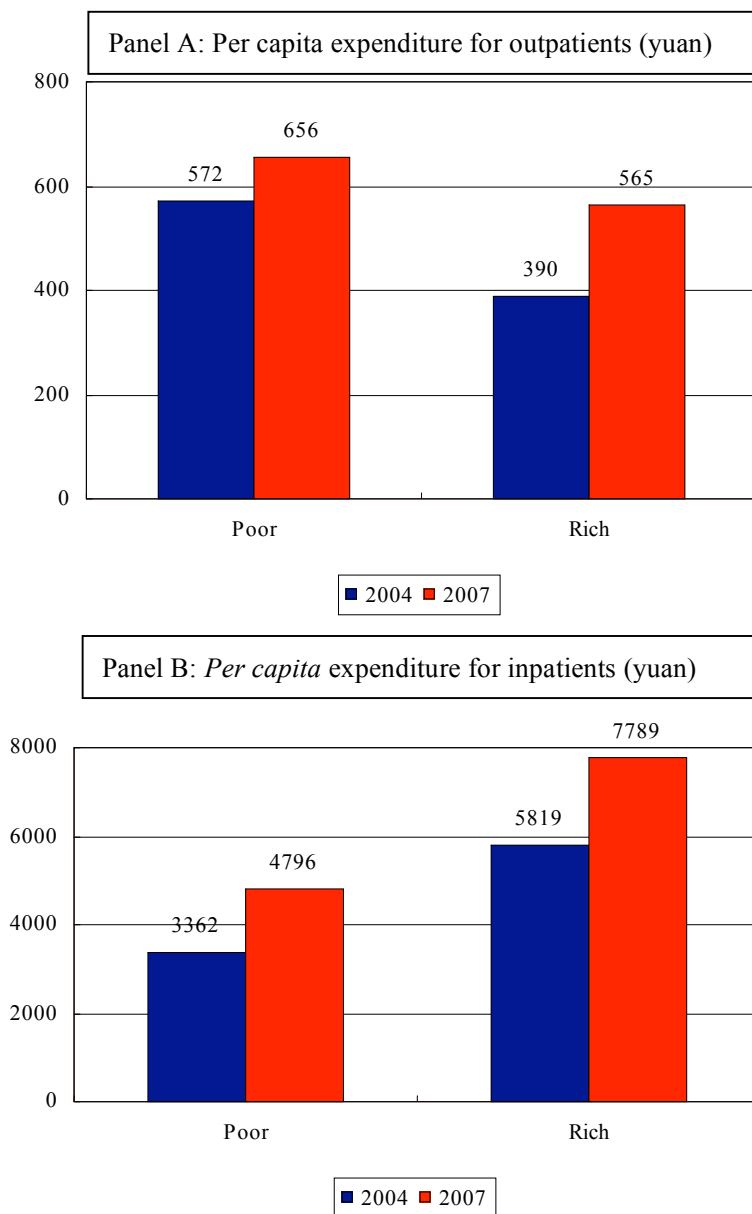
During interviews, farmers expressed a preference for a programme that would cover major illness as that is one of the major risks households face. This is not to say that households are unhappy with the current NCMS programme. In fact, it is very popular. The programme has an expected return of nearly 50 yuan for a premium payment of 10 yuan. However, when we asked respondents if they could choose between two options - one, a system similar to the current NCMS programme; or, two, a programme that was effective at insuring farmers for catastrophic illnesses (that is, for illnesses that required expenditures of 5000 yuan and above) - almost all households chose the second option. Clearly, rural residents seem to prefer a programme that would eliminate at least part of the risk of having someone in the household contract a catastrophic illness.

If China is to develop a more comprehensive health system, the current NCMS programme will have to evolve a long way. Certainly part of the problem appears to be that the county is the unit of governmental jurisdiction which is ultimately responsible for covering the liabilities of rural health insurance. The fundamental concepts of insurance provision would suggest that there are many flaws with the current approach. First, most county governments are themselves in chronic fiscal

deficit. Therefore, most counties will only be able to cover reimbursements that are equal to or less than the amount of their revenue pool. This is part of the reason that their levels of payout are so low. Counties simply do not have the funds to meet the promises of the programme.

Even in counties with some level of fiscal surplus, it is difficult to understand how any county should be thought to have the technical and financial capabilities of running a complicated health insurance programme. According to our interviews, there is little understanding of the actuarials of the rural clientele in terms of the likelihood of catastrophic illnesses, the health expenditure responses to the offering of new reimbursement programmes and the ability to track health expenditures to insure that on the one hand the expenditures are being rationally made and on the other hand that they are covering the needs of the farmers. In simplest terms, new and more flexible programmes are needed if the rural NCMS programme is to meet its needs and it is difficult to see how the current funding arrangements will ever be able to meet the needs efficiently and comprehensively.

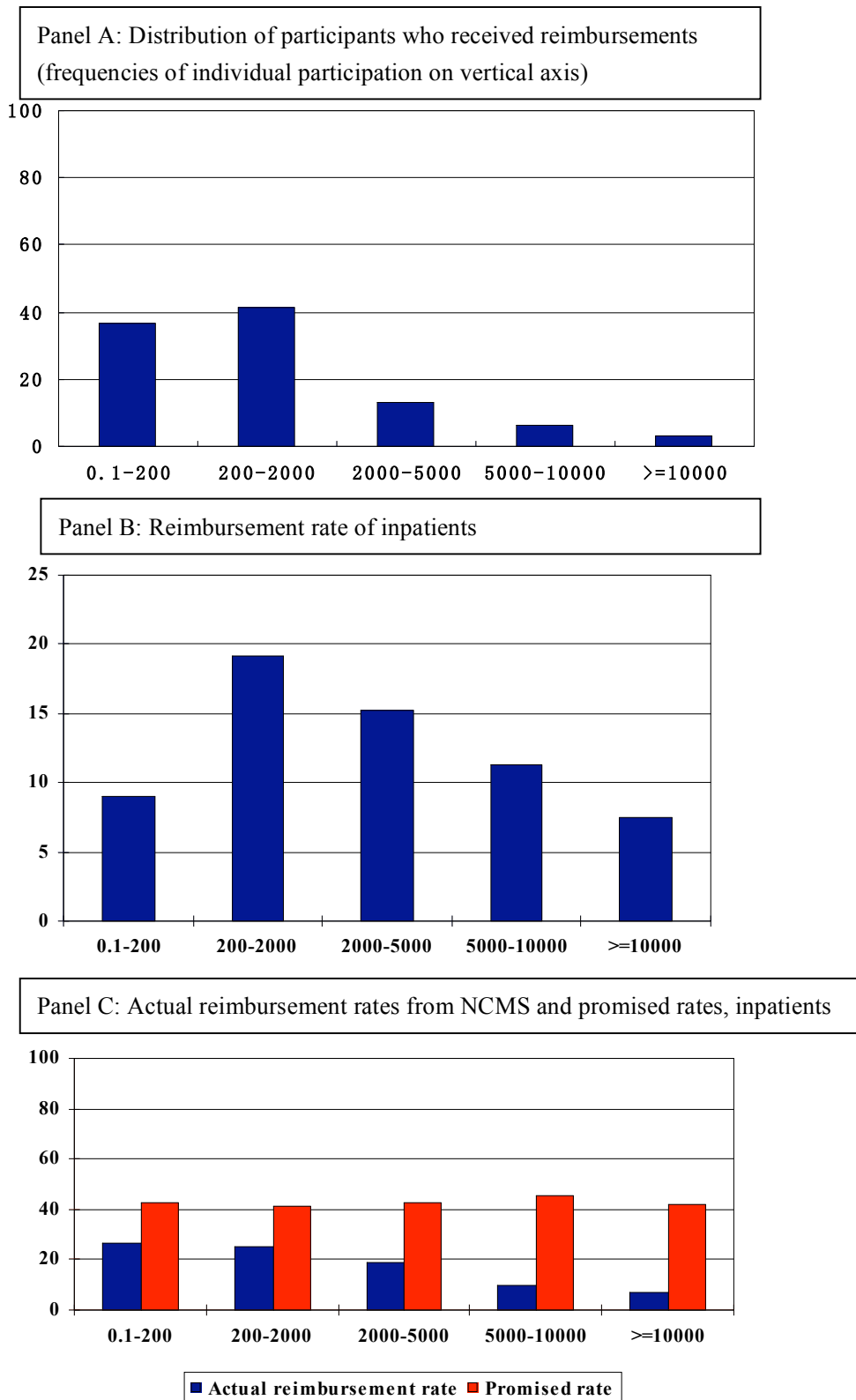
Figure 1. Per Capita Expenditure on Inpatient and Outpatient Medical Care by Sample Households in Rural China, 2004 and 2007



Data source: Authors' Survey

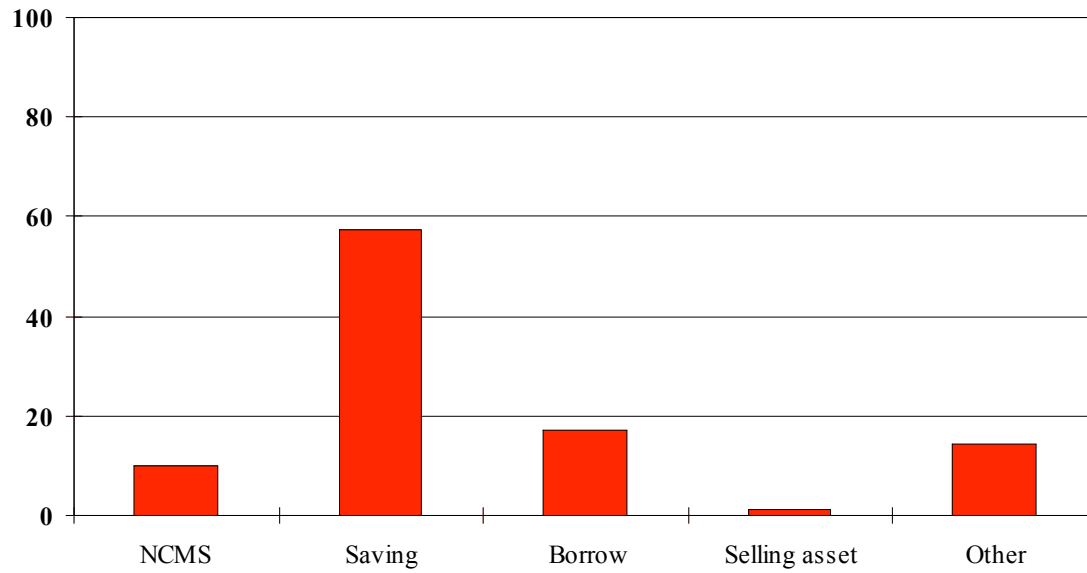
Note: Average expenditures are calculated conditional on the fact that the individual was ill and sought medical care. All figures are reported in real yuan.

Figure 2. Distribution of Reimbursements and Reimbursement Rates in Sample Households in Rural China, 2007



Data source: Authors' Survey

Figure 3. Funding Sources of Catastrophic Medical Care Expenditures (for episodes of illnesses with expenditures greater than 5,000 yuan) for Inpatients in Rural China, 2007



Data source: Authors' survey

Table 1. Coverage of the New Cooperative Medical System (NCMS) Health Insurance Programme across Rural China, 2004 and 2007

	2004	2007
Villages covered by NCMS in sample (per cent)	24	100
Total individuals in sample (per cent)	100%	100%
Individuals living in villages covered by NCMS (<i>Covered Individuals</i> - per cent)	24	100
Covered individuals that participated in NCMS (<i>Participating Individuals</i> - per cent)	79	90
Participating individuals that did so voluntarily (per cent)	93	98

Data source: Authors' survey

Table 2. Reasons Reported by Sample Individuals for Not Participating in NCMS in Rural China, 2004 and 2007

Stated Reasons	2004		2007	
	Of Total Non-Participating Individuals, Number in Each Category	Share of Total (Each Row/Row1)	Of Total Non-Participating Individuals, Number in Each Category	Share of Total (Each Row/Row1)
Total Non-Participating Individuals ^a	160	100.0	738	100.0
Personal Reasons	73	45.6	511	68.7
Already covered by alternative insurance	27	16.9	109	14.8
No <i>hukou</i> in village	18	11.2	255	34.0
Do not expect family members to get sick	14	8.8	76	10.3
Infant or newly married	3	1.9	43	5.8
Cannot afford the NCMS Premium	11	6.9	28	3.8
Problem with programme design	75	46.9	135	18.3
Working outside of village as migrant or self-employed	39	24.4	87	11.8
Reimbursement rate too low	10	6.3	10	1.4
Reimbursement procedure too complicated	9	5.6	17	2.3
Believe NCMS fund management was not accountable	9	5.6	21	2.8
Price of covered services and medicines too high	8	5.0	0	0.0
Other reasons ^b	12	7.5	96	13.0

Data source: Authors' surveys

^a "Total Non-Participating Individuals" is number of individuals in NCMS-covered villages reporting that they choose "not to participate."

^b The Category of "Other Reasons" includes three relatively common answers that do not fit into the "Personal Reasons" or the "Problem with Programme Design" categories, including: a) Individual is so sick he/she is not willing to participate; b) One of the members of the family is a doctor; c) Individual is too busy and missed the enrolment date; and d) etc.

Table 3. Scenario Analysis under the Constraint of Total Reimbursed Amount in Sample Villages, 2007^a

Medical expenditure	Mean	Frequency	Scenario 1		Scenario 2		Scenario 3	
			Reimbursement rate (%)	Reimbursement (Yuan)	Reimbursement rate (%)	Reimbursement (Yuan)	Reimbursement rate (%)	Reimbursement (Yuan)
0.1-200	129	11			16	227		
200-2000	1173	150			16	28,152		
2000-5000	3323	137			16	72,840		
5000-10,000	6671	71	22	104,201	16	75,783		
10,000-50,000	19,940	45	22	197,406	16	143,568	31	278,163
>=50,000	67,475	4	22	59,378	16	43,184	31	83,669
Total		418		360,985		363,754		361,832
Deficit				2235		5004		3082

Data source: Authors' surveys

^a On the basis of information from each county's NCMS office, we were able to calculate the total amount of funding provided for the NCMS programme in each county including the contributions from rural residents, local government and the central government. The total amount in 2007 equalled 358,750 RMB.

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