Global Journal of Applied, Management and Social Sciences (GOJAMSS); Vol.25, February 2023; P.1 – 9 (ISSN: 2276 – 9013)

The Impact of State Health Insurance Scheme on Access and Utilization of Healthcare: An Empirical Examination of Kano State Contributory Health Insurance Scheme

KAMILU YAKUBU ISHAQ
Department of Economics
Bayero university Kano
Gsm: +2347030393916, +2349040445455
Gmail: yakubukamilu10@gmail.com

Abstract
State leads health insurance schemes are becoming increasingly recognized as an instrument to finance and provide access and utilization of healthcare in Nigeria. Taking the example of Kano State contributory health insurance scheme this paper examines its impact on access and utilization of healthcare among the insured employees using two-part model and a binary logit model. Regarding the impact on the access to healthcare, although as of the time of conducting this research some employees were yet to register for the scheme even though their contribution is being deducted monthly, those that are enroll provides a spectacular insight on access and utilizations within the metropolis, that empirical evidences from the research suggest that level of education, physical health condition, family size, level of income of the respondent, marital status, distance to the hospital, type of health facility as well as severity of sickness are increasing function of healthcare utilization. Although these socio economic and demographic variables are not easily influence by policy makers but they can be integrated alongside other health related variables and supply side intervention to poster access and utilization of healthcare not only among the insured but in the entire state because its expected when the participating facilities are upgraded there will be an improvement in public health.

Keywords: Access and Utilizations, Two-part model, Binary logit model, and Contributory health insurance scheme

Introduction

More than 2 billion people live in developing countries with health systems afflicted by inefficiency, inequitable access, inadequate funding and poor quality services. These people account for 92% of global annual deaths from communicable diseases, 68% of deaths from non-communicable conditions, and 80% of deaths from injuries. The World Health Organisation (WHO) estimates that more than 150 million of these people suffer financial catastrophe every year having to make unexpected out-of-pocket expenditures for expensive emergency care (WHO various years).

Within countries, the burden of dysfunctional health systems is disproportionately felt by the poorest households. Their access and use of services, such as immunizations and attended deliveries, tend to behalf those of richer households. They have limited recourse to purchase quality services from private providers. Their enrollment in health insurance tends to be marginal. And they are unable to shield themselves from catastrophic health expenditures by drawing on accumulated wealth In view of these shortcomings, policy makers in many low-and middle-income countries are debating the virtues of scaling up health insurance to improve health outcomes. The solution proposed by WHO and other international bodies has been to strive toward universal health coverage (UHC), notably through prepayment and risk pooling mechanisms in lieu of payments at the point and time of service delivery (James and Savedoff, 2010; World Health Organisation, 2010). In essence, the most popular option so far adopted in Nigeria is the establishment of the national health insurance scheme (NHIS), to ensure all citizens access to good health care services. Expanding coverage and minimizing out-of-pocket expenditure primarily through greater federal government health care funding is not a realistic proposition given Nigeria's income status, and more important, the autonomy

that the constitution gives the states to determine their health care priorities and spending choices.
The foregoing presents the rationale for the proposal put forward by National Strategic Health Development Plan (NSHDP) 2010-2015 for reforming health care financing in Nigeria as a prerequisite for progress toward UHC. This proposal recommends shifting away from the federal-led social health insurance scheme toward leveraging the constitutional autonomy enjoyed by the states to extend social insurance coverage to residents of each state by establishing states health insurance schemes.

Kano State Contributory Health Insurance Scheme
Projections from the 2006 census reveals that states in Nigeria range in population from about 2-11 million, with Kano State being the most populous among the 36 states of the federation, and has the largest number of public service employees in the country. This demographic feature presents the state with a large pool of working population without health insurance. In essence, lack of Access to affordable healthcare continues to be a challenge for most of the state residents due to high levels of poverty (especially in the rural areas) and significant reliance on out of pocket payments. Beside it's on this background that the state comes up with its insurance scheme to ensure that every resident has access to good health care service, protect families from the financial hardship of huge medical bills and to ensure equitable distribution of health care cost among depreciate income groups. According to its management, the state health insurance/contributory scheme had commenced operation for almost 6 years, and had become successful with over 370,000 enrollees accessing healthcare. The scheme is presently operating in 245 health facilities, comprising 134 primary healthcare facilities, 37 secondary healthcare facilities and 74 private healthcare facilities across the State.

Forward to aforementioned, one of the most fundamental aspects of health insurance scheme is critical assessment of its overall impact. Development policymakers across the world are beginning to understand this and impact assessment research has become a major tool to inform the policy dialogue in healthcare management. Such assessment may lead to crucial decisions to scale-up health insurance programs, alter them or replace them with alternative mechanisms. Hence it's necessary to highlights the importance of impact assessment at a time where both a large disease burden and constrained budgets weigh heavily on governments and donor institutions. Policymakers and researchers have realized the imperative of distinguishing between programs with positive impact and programs with little or no (or even negative) impact. This has resulted in an increase in a demand for such evaluations and more evidence-based research (Escobar et al. 2010).

Being heavily motivated by the aforementioned, whatever our policymakers want to do to emulate successful health financing reforms, from the developed countries there are knowledge gaps that create enormous risks of failure from many perspectives. This research attempts to begin filling some of them through empirical investigation.
The widest knowledge gap concerns the impact of health insurance on access and utilization of healthcare. Do people with health insurance in developing countries, or even developed countries, have better access and utilization of healthcare than those without? Evidence from developed countries suggests yes. But what about developing countries like Nigeria? However, it's on the heel of this, that this study seeks to investigate the impact of Kano State contributory health insurance scheme on access and utilization of healthcare among the insured
Objective: The only way to know whether healthcare financing strategy such as Kano State contributory/insurance scheme, which addresses both the demand and the supply side, ***is a better model than a purely supply-side or direct delivery model, is to conduct its rigorous impact assessment (how it provides access and utilization of healthcare).*** Demand-side interventions can take many forms and have various names such as community-based health insurance (CBHI), social health insurance, micro-insurance, and subsidized private voluntary health insurance. To date, the findings in the literature for such insurance-based approaches are mostly promising; for instance, Giedion and Diaz in Escobar et al. 2010 conclude: "The positive effect of health insurance on medical care and use has been widely demonstrated and generally accepted". But what is meant by positive effect? What exactly has been evaluated to date? How robust are the findings? This research will summarize the main findings from the literature and explore the impact of health insurance on access and utilization of healthcare in Nigeria using Kano State as a case study.

Literature review

In line with a vast number of theoretical arguments, a vast number of empirical studies had been conducted to examine and assess the impact of health insurance coverage on access and utilization of healthcare, financial protection from out-of pocket health expenditure, and health status. However, according to the International Labour Office 2018 and WHO 2010, the prime welfare objectives of social health insurance are to: i) prevent large out-of-pocket expenditure; ii) provide universal healthcare coverage; iii) increase appropriate utilization of health services; and iv) improve health status. However, while one of the four welfare objectives of social health insurance mentioned above are within the context of this study, the other objectives are not within our scope. Social health insurance can improve welfare through better health status and maintenance of non-health consumption goods by smoothing health expenditure over time and by preventing a decline in household labour supply (Townsend 1994). Insurance should at least allow those insured greater care with a reduced financial burden through risk sharing across people and across time to help smooth consumption for those who fall ill.

Besides providing financial protection from the economic consequences of illness, health insurance is meant to improve access (Nyman 1999). A priori, we expect health insurance to increase access and utilization because it lowers the price of health care. Individuals will have better health if they are utilizing preventive and curative health care when needed and in a timely manner. The literature shows generally positive impact of health insurance in developing countries on access and utilization. This thesis will concentrate its review on the studies with the most robust evidence of the impact of health insurance. The potential for moral hazard or the overuse of medical care is a view that opponents of subsidized health insurance often hold. In essence, this study views it differently, because given the lack of access and other constraints that poor and vulnerable households face, the likelihood of demand-side moral hazard seems unlikely. To date, evidence is weak on the matter, however, so it is not possible to prove one way or the other.

The impact of the *subsidized* regime component of a national health insurance program in Colombia is examined by Trujillo et al. (2005). Using propensity score matching (PSM) techniques, the authors find the intervention to greatly increase utilization of medical care among poor and uninsured individuals. Giedion et al. (2007) measure the impact of the *contributory* regime component of the same Colombian insurance scheme using instrumental variables (IV) techniques and thorough review of potential methodologies to address the issues of selection bias, the authors concluded that, health insurance has a positive causal impact on access and utilization. It is noteworthy that the authors highlight the importance of examining heterogeneous effects by examining differential impacts among individuals with different types of employment.

Chen et al. (2007) find Taiwan's National Health Insurance scheme to increase utilization of inpatient and outpatient care among the elderly, with more pronounced effects among the low and middle-income groups. These authors, using the econometric technique of difference-in-differences (DD) to address issues of endogeneity, find that one year after the establishment of the health insurance scheme, previously uninsured elderly people increased their use of outpatient care by nearly 28% and that previously insured elderly people increased their use by over 13%. The difference-in-difference change therefore is an increase of nearly 15%, which can be solely attributed to the National Health Insurance scheme.
Wagstaff et al. (2007) estimate the impact of a national rural health insurance scheme in China and find that the scheme increased utilization of both inpatient and outpatient care by 20-30% but that the scheme had no impact on utilization among the poor. Yip et al. (2008) use a combination of DD and PSM to find that the China health insurance program increase utilization by 70%.

In a different region, Wagstaff and Moreno-Serra (2007) investigate the impact of the introduction of social health insurance in 14 countries in Central and Eastern Europe and Central Asia and find an increase in acute in-patient admissions. Taking advantage of a "natural experiment" given explicit policy changes in the region, but with a lack of randomization of the intervention, the authors use the best possible econometric techniques to address the issue of selection bias.
It's noteworthy that there are few impact assessment or evaluations of health insurance in African countries and those that do exist, demonstrate a weaker methodology than the articles reviewed above. One example

is Smith and Sulzbach (2008) which examines the impact of health insurance in three African countries. The authors find a correlation between health insurance and use of maternal health services but highlight that the inclusion of maternal health care in the benefits package of the insurance is key. Another example is Jutting, 2003 in which the author finds, in a study of mutual health organisations (community-based health insurance) in Senegal, an increase utilization of hospitalization services but a failure of the program to address the needs of the poorest of the poor.

Chankova et al. (2010) evaluate the effects of national health Insurance Scheme implementation on health care use and spending, their findings revealed a significant increase in both inpatient and outpatient hospital visit. But record no significant changes in proportion of women visits for both antenatal and postnatal care. Gustafson-Wright (2010) evaluate the impact of low-cost health insurance scheme to protect the poor in Namibia, empirical findings clearly demonstrate no impact of the program on access and utilization of healthcare services. In Nigeria, Gustafson-Wright et al. (2013) employed the difference- in- difference and Propensity Score Matching (PSM) techniques to evaluate the short term impact of the Health insurance fund program in central Kwara. Empirical evidences proved that the intervention not only increases utilization of health care among the insured by over 70% (as well as in the treatment community overall), but it also significantly increases utilization of *quality* health care.

Nyman and Gustafson-Wright (2013) noted that, an additional potential impact of health insurance is increased utilization among nonparticipants Members because, in most case when insurance is made available, participating facilities are upgraded. Naturally, we might also expect individuals to have better health if the quality of the health care they receive is improved. Since it is difficult to measure the impact of improvements in quality per se, and because few insurance interventions explicitly address the supply-side, the literature is unclear about the separate impact of quality improvements of the supply of care versus making health insurance available and affordable.

Methodology

This study employed both descriptive and diagnostic research design using survey method via a mixture of count data models. This research design has been used by various studies in the past to assess the impact of health insurance on healthcare utilization, in different countries. See Hidayat and Pokhrel (2009), d'Uva, (2006), Mullahy (1998), Deb and Trivedi (1997), Cameron and Trivedi, (1996, 1998), Nguyen et al. (2011), Saheed & Olaniyan (2013), and Belotti et al. (2015) in all, the methodologies prove to be valid and efficient in achieving its desired objective.

The research population is the entire employees of Kano State and its 44 local governments covered by the State contributory health insurance scheme.

A multistage cluster sampling procedure was employed in the selection of respondents from the three senatorial zones, while 3 State and local government public sector organisations were selected each from Kano north and south zones, 6 public sector organisations were selected from Kano central, because the nature of distribution of public sector employees and their corresponding organisation is statistically skewed in favour of Kano central. In each selected organisation a department was randomly selected and from the departments a section was selected, and from each section respondents were selected randomly, and the sample size of 300 respondents where used.

Research Model:

The impact of health insurance on access and utilization of healthcare - count data hurdle model

According to Deb and Trivedi (1997) a logit model will be used to estimate the probability that the individual visits an OP provider (part one) and a truncated-at-zero NB model to estimate the number of OP visits (part two). Although the motivation for this model is to handle excess zeros, it is also capable of modeling too few zeros.

A hurdle model has the interpretation that it reflects a two-stage decision-making process. For example, a patient may initiate the first visit to a doctor, but the second and subsequent visits may be determined by a different mechanism (Pohlmeier and Ulrich, 1995). The **hurdle model** or **two-part model** relaxes the assumption that the zeros and the positives come from the same data-generating process. Therefore, a logit model estimating the probability that the individual visits an OP provider (part one) is specified as follows:

$$Li=\left(\frac{opv}{1-opv}\right)=\beta_o+\beta_{1is}+\beta_{2ms}+\beta_{3age}+\beta_{4gen}+\beta_{5phc}+\beta_{6mexp}+\beta 7edu+\beta_{8cgp}+\beta_{9pth}+\beta_{10inc}+\beta_{11dht}+u_i$$

The second part of the Hurdle model (part two) is a truncated-at-zero NB model design to estimate the number of OP visits, take the following form after linearization.

$$Pr\ (Nopv)=\beta_o+\beta_{1is}+\beta_{2ms}+\beta_{3age}+\beta_{4gen}+\beta_{5phc}+\beta_{6mexp}+\beta 7edu+\beta_{8cgp}+\beta_{9pth}+\beta_{10inc}+\beta_{11dht}+u_i$$

Results and Discussion

Table 1. Parameter estimates for the two-part hurdle and Logit Regression Models with respect to access and healthcare utilization in Kano State

	TWO PART HURDLE MODEL				LOGIT MODEL
	MDU		OPU		
VARAIBLES	FIRST PART	SECOND PART	FIRST PART	SECOND PART	
Intercept	-0.518 (0.138)	-0.545 (0.185)	-0.525 (0.258)	-0.434 (0.458)	-0.087 (0.403)
THF	0.046 (0.543)	0.262 (0,663)	0.063 (0.113)	0.731 (0.543)	0.060 (0.872)
DTH	0.285 (0.675)	- 0.011 (0.675)	- 0.085 (0.375)	0.015 (0.175)	0.876 (0.154)
FS	0.004 (0.5876)	0.043 (0.646)	0.037 -(0.376)	0.121 (0.736)	0.176 (0.532)
GCP	0.005 (0.654)	-0.004 (0.665)	0.045 (0.281)	0.055 (0.126)	0.562 (0.862)
EDU	0.046 (0.732)	0.085 (0.765)	0.087 (0.981)	0.081 (0.751)	0.071 (0.461)
PHC	0.091 (0.876)	0.005 (0.641)	- 0.005 (0.011)	0.045 (0.132)	0.451 (0.892)
MEXP	0.025 (0.212)	0.015 (0.412)	0.058 (0.543)	0.227 (0.612)	0.091 (0.137)
AGE	0.009 (0.654)	0.057 (0.571)	0.049 (0.314)	0.003 (0.511)	0.089 (0.532)
MS	0.068 (0.598)	0.124 (0.708)	0.463 (0.898)	0.443 (0.615)	- 0.127 (0.965)
LINC	0.005 (0.765)	0.061 (0.315)	- 0.561 (0.531)	0.145 (0.415)	0.567 (0.321)

Note; the reported logit are in marginal effect (dy/dx).While the first and the second part refers to binary conditional on use regression respectively.

Table 2. Model Goodness of Fit

Variable	Model	Log(L)	AIC	BIC	GOF
MDU	Logit	41411	64859	85010	132.2
	TPM	42159	84392	84638	176.65
OPU	LOGI	-4180	88145	89995	433.8
	TTPM	-44555	90779	90025	234.4

MDU, number of outpatient visits to an MD; OPU, number of outpatient visits to all providers.

Table 3 Show Parameter estimates and their standard errors obtained from TPM and Logit model, the individual parameters are precisely determined, and in general the coefficients on most variables have the expected signs and significance. The outcome of the goodness of fit statistics showed that two part model best fits the model as it has largest value of the two test criteria: AIC and BIC utilized in the study.
Marital status of the respondents MS have positive influence on the number of hospital visits among the sampled respondents both married divorced/widowed respondents as the result shows, increased in the demand for healthcare is linked to the marital status of the respondents. This finding is in line with the findings Mwasu, (2017) Kings, et al. (2012) and Yuan and Chen, (2015). Choice of healthcare provider THF analysed via the logit regression reveals that though not a significant factor in determining type of healthcare provider but being married exert positive influence on the choice of type of healthcare provider with health insurance policy.

Educational qualification of the respondents positively affect number of hospital visits as an increase in a one Degree or unit change in the log of the expected count the educational status of the respondents will increase by 0.071 and an incidence ratio of about 73%, the results of the marginal effects on the other hand implies that demand for healthcare in Kano state varies to some extent with the educational qualification of the respondents of the respondents with about 46% increase in the number of hospital visits influenced by level of education of the respondents.

Consultation of general practitioner is a variable reflecting special healthcare need according to both models it considerably increases the number of hospital visits to MDU and OPU, (number of outpatient visits to an MD;, and number of outpatient visits to all providers) by 86% in logit model , with 65% and 28% to MDU and OPU respectively in the two part model, which is in line with the findings of Baloul and Dahul (2014) and chen (2015) which report positive influence of severity of sickness on healthcare utilization. except in the second part of access to MDU where it has negative influence on number of hospital visit, a result which violet a priory expectation of the model, because under normal situation we expect this variable to co-vary with number of hospital visit by the patients, in essence we expect people with special healthcare need to visit hospital on regular basis.
Income of the respondents is another important variable that affect healthcare utilization, result from the logit model shows any increase in respondent income by one unit, will lead to more than 50% increase in healthcare utilization or hospital visit. Likewise, the two-part model the result shows income as an increasing function of healthcare utilization or hospital visit.
Also findings with regards to other covariates like age, monthly expenditure on health, physical health condition, and family size, in both models are consistent with our a priori expectation, that while those with poor reported health condition has more hospital visit compared to those with favorable reported health condition, with regards to family size also an increase in one number of family leads to 17.6% increase in hospital visit.

Conclusion
This paper is set to deliver evidence on how Kano state contributory health insurance scheme leads to access and utilization of healthcare among its insured members, because the prime welfare objectives of any social

health insurance are to: i) prevent large out-of-pocket expenditure; ii) provide universal healthcare coverage; and iii) increase appropriate utilization of health services. Empirical evidences from the research suggest that level of education, physical health condition, family size, level of income of the respondent, marital status, distance to the hospital, type of health facility as well as severity of sickness are increasing function of healthcare utilization. Although these socio economic and demographic variables are not easily influence by policy makers but they can be integrated alongside other health related variables and supply side intervention to poster access and utilization of healthcare not only among the insured but in the entire state because its expected when the participating facilities are upgraded there will be an improvement in public health. As Nyman and Gustafson-Wright (2013) noted that, an additional potential impact of health insurance is increased utilization among nonparticipants Members because, in most case when insurance is made available, participating facilities are upgraded. Naturally, we might also expect individuals to have better health if the quality of the health care they receive is improved.

References

Andrews, D.W.K. (1988a).Chi-square diagnostic tests for econometric models: theory. Econometric 56, 1419-1453

Andrews, D.W.K. (1988b). Chi-square diagnostic tests for econometric models: introduction and applications. *Journal of Econometrics.* 37, 135-156

Asfaw, A. & J. von Braun (2005). "Innovations in Health Care Financing: New Evidence on the Prospect of Community Health Insurance Schemes in the Rural Areas of Ethiopia." *International Journal of Health Care Finance and Economics* 5:241-253.

Asgary, A., K. Willis, A. Akbar Taghvaei, and M. Rafeian (2004) "Estimating rural households' willingness to pay for health insurance." *European Journal of Health Economics* 5:209 215.

Banerjee, A. & E. Duflo (2011). Poor Economics A Radical Rethinking of the Way to Fight Global Poverty. New York, New York: Public Affairs.

Barnighausen, T., Y. Liu, X. Zhang, R. Sauerborn (2007). "Willingness to pay for social health insurance among informal sector workers in Wuhan, China: a contingent valuation study." *BMC Health Services Research* 7:114.

Behrman, J. & Hoddinott, J. (2005) "Program Evaluation with Unobserved Heterogeneity and Selective Implementation: The Mexican 'PROGRESA' Impact of Child Nutrition." *Oxford Bulletin of Economics and Statistics* 67(4):547-69.

Behrman, J., Parker, S. & Todd, P. (2009). "Long-Term Impacts of the Oportunidades Conditiona Cash-Transfer Program on Rural Youth in Mexico." *In Poverty, Inequality and Policy in Latin America,* eds. S. Klasen & F. Nowak-Lehmann, 219-70. Cambridge, MA: MIT Press.

Blundell, R. & M. Costa Dias (2000). "Evaluation Methods for Non-Experimental Data." Fiscal Studies 21(4): 427-68.

Brals, D. (forthcoming) *Home versus clinic deliveries: the impact of subsidized private healt insurance and clinic upgrades in Central Kwara State, Nigeria*

Cameron, A.C., & Trivedi, P.K. (1998). *Regression Analysis of Count Data*. Econometric Society Monograph 30, Cambridge University Press, NewYork

Cameron, C., Trivedi, P.K., Milne,F., & Piggot, J. (1988). A Micro econometric model of the Demand for healthcare and health insurance in Australia. Review of Economic Studies 5585106

Deb, P. & Trivedi, P.K., (1997). Demand for medical care by the elderly in the United States: a finite mixture approach. *Journal of Applied Econometrics* 12,313–336.

Duan, N., Manning, W.G., Morris, C.N. & Newhouse, J.P. (1983). A comparison of alternative models for the demand for medical care. *Journal of Business and Economic Statistics* 1, 115–126.

Geweke,J., Keane,M. (1997). Mixture of normals probit models. Federal Reserve Bank of Minneapolis, Staff Report 237

Goffe, W.L., Ferrier, G.D. & Rogers, J. (1994). Global optimization of statistical functions with simulated annealing. *Journal of Econometrics* 60, 65–69.

Gritz, M., (1993).The impact of training on the frequency and duration of employment. *Journal of Econometrics* 57, 21–51.

Haughton, D. (1997). Packages for estimating finite mixtures. *American Statistician* 51, 194 205.

Heckman, J.J. & Singer, B. (1984). A method of minimizing the distributional impact in econometric models for duration data. *Econometrica* 52, 271–320.
Hidayat, B. & Pokhrel, S. (2010). The Selection of an Appropriate Count Data Model for Modeling Health Insurance and Healthcare Demand Case of Indonesia. *International Journal of Environmental Research and Public Health* Vol. 7, Pp. 9-27
Jutting, J. (2001). The Impact of Health Insurance on the Access to Health Care and Financial Protection in Rural Areas of Developing Countries: The Example of Senegal *Walter Flex- Strabe* 3. Bonn: Germany
Nwosu, E.O, Urama, N.E, & Uruakp, C. (2012). Determinants of Antenatal Care Service Utilization in Nigeria. *Journal of Economics and Sustainable Development*. Published by the International Institute of Science, Technology and Education. Vol 2, No 6, 2012
Wagstaff, A. (2007). The economic consequences of health shocks: Evidence from Vietnam. *Journal of Health Economics*, 26 (2007): 82–100.
Wagstaff, A. Lindelow, M., Junc, G., Ling, X. and Juncheng, Q. (2007). Extending Health Insurance to the Rural Population: An Impact Evaluation of China's New Cooperative Medical Scheme. World Bank Impact Evaluation Series No. 12.
Wagstaff, A. & M. Pradhan (2005). Health Insurance Impact on Health and Nonmedical Consumption in a Developing Country. World Bank Policy Research Working Paper No. 3563. Washington, D.C.
Wagstaff, A. & R. Moreno-Serra (2007). "Europe and Central Asia's Great Post-Communist Social Health Insurance Experiment: Impacts on Health Sector and Labor Market Outcomes".
Wagstaff, A. & Yu, S. (2007). Do health sector reforms have their intended impacts? The

Wang, H., Yip, W., Zhang, L., and Hsiao, W. (2008a). The Impact of Rural Mutual Health Care on Health Status: Evaluation of a Social Experiment in Rural China
Wang, H., Yip, W., Zhang, L., and Hsiao, W. (2008b) The Impact of Rural Mutual Health Care on Access to Care: Evaluation of a Social experiment in Rural China.
Wang, H., Yip, W., & Zhang, L., Wang, L. and Hsiao, W. (2005). *Community-based health insurance in poor rural China: the distribution of net benefits*. Published by Oxford University
World Bank's Health VIII project in Gansu province, China. *Journal of Health Economics, Vol.* 26 (2007):505–535.
World Bank Policy Research Working Paper 4371. Washington, D.C.