

## RESEARCH TWITTER

Virginia C. Li, Qiongli Wang, Ning Xia, Songyuan Tang, and Caroline C. Wang. **"Tobacco Crop Substitution: Pilot Effort in China."** *American Journal of Public Health*, 2012, 102(9), 1660-3.

In China, approximately 20 million farmers produce the world's largest share of tobacco. Showing that income from crop substitution can exceed that from tobacco growth is essential to persuading farm families to stop planting tobacco, grown abundantly in Yunnan Province. In the Yuxi Municipality, collaborators from the Yuxi Bureau of Agriculture and the University of California at Los Angeles School of Public Health initiated a tobacco crop substitution project. At 3 sites, 458 farm families volunteered to participate in a new, for-profit cooperative model. This project successfully identified an approach engaging farmers in cooperatives to substitute food crops for tobacco, thereby increasing farmers' annual income between 21% and 110% per acre.

Grant Miller, Renfu Luo, Linxiu Zhang, Sean Sylvia, Yaojiang Shi, Patricia Foo, Qiran Zhao, Reynaldo Martorell, Alexis Medina, and Scott Rozelle. **"Effectiveness of provider incentives for anaemia reduction in rural China: a cluster randomised trial."** *BMJ*, 2012, 345: e4809.

This study tested the impact of provider performance pay for anaemia reduction in rural China. It was conducted among the 72 randomly selected rural primary schools across northwest China. Sample schools were randomly assigned to a control group, with no intervention, or one of three treatment arms: (a) an information arm, in which principals received information about anaemia; (b) a subsidy arm, in which principals received information and unconditional subsidies; and (c) an incentive arm, in which principals received information, subsidies, and financial incentives for reducing anaemia among students. It found that mean student haemoglobin concentration rose by 1.5 g/L (95% CI -1.1 to 4.1) in information schools, 0.8 g/L (-1.8 to 3.3) in subsidy schools, and 2.4 g/L (0 to 4.9) in incentive schools compared with the control group. This increase in haemoglobin corresponded to a reduction in prevalence of anaemia (Hb <115 g/L) of 24% in incentive schools. Interactions with pre-existing incentives for principals to achieve good academic performance led to substantially larger gains in the information and incentive arms. It concluded that financial incentives for health improvement were modestly effective and understanding interactions with other motives and pre-existing incentives was critical.

Francesco Barone-Adesi, Robert S Chapman, Debra T Silverman, Xingzhou He, Wei Hu, Roel Vermeulen, Bofu Ning, Joseph F Fraumeni, Jr, Nathaniel Rothman, and Qing Lan. **"Risk of lung cancer associated with domestic use of coal in Xuanwei, China: retrospective cohort study."** *BMJ*, 2012, 345: e5414.

This retrospective cohort study estimated the risk of lung cancer associated with the use of different types of coal for household cooking and heating. It compared mortality from lung cancer between lifelong users of "smoky coal" (bituminous) and "smokeless coal" (anthracite). Participants were 27310 individuals using smoky coal and 9962 individuals using smokeless coal during their entire life. It found that lung cancer mortality was substantially higher among users of smoky coal than users of smokeless coal. The absolute risks of lung cancer death before 70 years of age for men and women using smoky coal were 18% and 20%, respectively, compared with less than 0.5% among smokeless coal users of both sexes. Lung cancer alone accounted for about 40% of all deaths before age 60 among individuals using smoky coal. Compared with smokeless coal, use of smoky coal was associated with an increased risk of lung cancer death. It concluded that in Xuanwei the domestic use of smoky coal is associated with a substantial increase in the absolute lifetime risk of developing lung cancer and is likely to represent one of the strongest effects of environmental pollution reported for cancer risk. Use of less carcinogenic types of coal could translate to a substantial reduction of lung cancer risk.

Ye Li, Qunhong Wu, Ling Xu, David Legge, Yanhua Hao, Lijun Gao, Ning Ning, and Gang Wan. **“Factors affecting catastrophic health expenditure and impoverishment from medical expenses in China: policy implications of universal health insurance.”** *Bulletin of the World Health Organization*, 2012, 90: 664-71.

This study was to assess the degree to which the Chinese people are protected from catastrophic household expenditure and impoverishment from medical expenses and to explore the health system and structural factors influencing the first of these outcomes. Data were derived from the Fourth National Health Service Survey. An analysis of catastrophic health expenditure and impoverishment from medical expenses was undertaken with a sample of 55,556 households of different characteristics and located in rural and urban settings in different parts of the country. It found that the rate of catastrophic health expenditure was 13.0%; that of impoverishment was 7.5%. Rates of catastrophic health expenditure were higher among households having members who were hospitalized, elderly, or chronically ill, as well as in households in rural or poorer regions. A combination of adverse factors increased the risk of catastrophic health expenditure. Families enrolled in the urban employee or resident insurance schemes had lower rates of catastrophic health expenditure than those enrolled in the new rural cooperative scheme. It concluded that policy-makers should focus on designing improved insurance plans by expanding the benefit package, redesigning cost sharing arrangements and provider payment methods and developing more effective expenditure control strategies.

Ma Runmei, Lao Terence T, Sun Yonghu, Xiao Hong, Tian Yuqin, Li Bailuan, Yang Minghui, Yang Weihong, Liang Kun, Liang Guohua, Li Hongyu, Geng Li, Ni Renmin, Qi Wenjin, Chen Zhuo, Du Mingyu, Zhu Bei, Xu Jing, Tao Yanping, Zhang Lan, Song Xianyan, Qu Zaiqing, Sun Qian, Yi Xiaoyun, Yu Jihui, and Zhang Dandan. **“Practice audits to reduce caesareans in a tertiary referral hospital in south-western China.”** *Bulletin of the World Health Organization*, 2012, 90: 488-94.

This study was to assess the effectiveness of a three-stage intervention to reduce caesarean deliveries in a Chinese tertiary hospital. A retrospective study was conducted to assess whether educating staff, educating patients and auditing surgeon practices (introduced in 2005) had reduced caesarean delivery rates. It found that the caesarean delivery rate ranged from 53.5% to 56.1% in 2001–2004 and from 43.9% to 36.1% in 2005–2011. When 2001–2004 and 2005–2011 were treated as “before” and “after” periods to evaluate the intervention's impact on the mean caesarean section rate, a significant reduction was noted: from 54.8% to 40.3%. The overall drop in the caesarean section rate was significant and inversely correlated with the years. Although complicated pregnancies increased after 2004, the primary caesarean section rate decreased annually by 20% on average in 2005–2011, after practice audits were implemented. Multiple logistic regression showed a positive association between the caesarean delivery rate and the rate of admission to the NICU. It concluded that patient and staff education and practice audits reduced the Caesarean section rate in a tertiary referral hospital without an increase in admissions to the NICU.

Liutang Gong, Hongyi Li, and Dihai Wang. **“Health investment, physical capital accumulation, and economic growth.”** *China Economic Review*, 2012, 23(4), 1104-19.

This paper analyzes the effect of health investment, and hence of health capital, on physical capital accumulation and long-run economic growth in an extended Ramsey model with an Arrow–Romer production function and a Grossman (1972) utility function. This paper concludes that economic growth is related to both the health growth rate and the health level. While growth in health capital always facilitates economic growth, the gross effect of health level on the rate of economic growth depends on how it affects physical capital accumulation. If the negative effect of health on economic growth through its influence on physical capital accumulation is not taken into consideration, then health level has a positive effect on the rate of economic growth by improving the efficiency of labor production. However, since health investment may crowd out

physical capital investment and thus influence physical capital accumulation, excessive investment in health may have a negative effect on economic growth. Empirical tests of these theoretical hypotheses using panel data from individual provinces of China produce results that are consistent with the theoretical conclusions.

Rui Wang, Mei-Jing Wu, Xiu-Qiang Ma, Yan-Fang Zhao, Xiao-Yan Yan, Qing-bin Gao, and Jia He. **“Body mass index and health-related quality of life in adults: a population based study in five cities of China.”** *European Journal of Public Health*, 2012, 22(4): 497-502.

This paper investigates the relationship between obesity and health-related quality of life (HRQL) in a randomly selected Chinese sample. A total of 3600 residents aged 18–80 years were sampled in five cities of China using a randomized stratified multiple-stage sampling method to receive the interview. Among the 3207 participants (mean age 42 years) suitable for analysis, body mass index (BMI) differed by age and gender. In women, meaningful impairments were seen between obese and normal weight participants in four physical health scales but only in one of the four mental health scales; in men, impairments by obesity were not found in all of the eight scales, and better HRQL in two mental health scales were observed in obese participants; after adjusting related variables, several physical but not mental health scales were found impaired by obesity. It concludes that obesity impaired physical but not mental health, and the impairments varied between genders. Public health agencies and government should emphasize the impairments of obesity on physical health.

Ling Yang, Maigeng Zhou, Paul Sherliker, Yue Cai, Richard Peto, Lijun Wang, Iona Millwood, Margaret Smith, Yuehua Hu, Gonghuan Yang, and Zhengming Chen. **“Alcohol drinking and overall and cause-specific mortality in China: nationally representative prospective study of 220 000 men with 15 years of follow-up.”** *International Journal of Epidemiology*, 2012, 41(4): 1101-13.

This nationally representative prospective cohort study included 220,000 men aged 40–79 years from 45 areas in China in 1990–91, and >40,000 deaths occurred during 15 years of follow-up. It found that overall, 33% of the participants reported drinking alcohol regularly at baseline, consuming mainly distilled spirits, with an estimated mean amount consumed of 372 g/week (46.5 units per week). After excluding all men with prior disease at baseline and the first 3 years of follow-up, there was a 5% excess risk of overall mortality among regular drinkers. Compared with non-drinkers, the adjusted hazard ratios among men who drank <140, 140–279, 280–419, 420–699 and ≥700 g/week were 0.97, 1.00, 1.02, 1.12 and 1.27, respectively. The strength of the relationship appeared to be greater in smokers than in non-smokers. There was a strong positive association of alcohol drinking with mortality from stroke, oesophageal cancer, liver cirrhosis or accidental causes, a weak J-shaped association with mortality from ischaemic heart disease, stomach cancer and lung cancer and no apparent relationship with respiratory disease mortality. It concluded that among Chinese men aged 40–79 years, regular alcohol drinking was associated with a small but definite excess risk of overall mortality, especially among smokers.

Steeff Baeten, Tom Van Ourti and Eddy van Doorslaer. **“Rising Inequalities in Income and Health in China: Who is Left Behind?”** Tinbergen Institute Discussion Paper 12-091/V.

During the last decades, China has experienced double-digit economic growth rates and rising inequality. This paper implements a new decomposition on the China Health and Nutrition Panel Survey (1991-2006) to examine the extent to which changes in level and distribution of incomes and in income mobility are related to health disparities between rich and poor. It finds that health disparities in China relate to rising income inequality and in particular to the adverse health and income experience of older (wo)men, but not to the growth rate of average incomes over the last decades. These findings suggest that replacement incomes and pensions at older ages may be one of the most important policy levers in combating health disparities between rich and poor Chinese.

Hong Liu and Zhong Zhao. **“Impact of China's Urban Resident Basic Medical Insurance on Health Care Utilization and Expenditure.”** IZA Discussion Paper No. 6768.

In 2007, China launched a subsidized voluntary public health insurance program, the Urban Resident Basic Medical Insurance, for urban residents without formal employment, including children, the elderly, and other unemployed urban residents. This paper estimates the impact of that program on health care utilization and expenditure using 2006 and 2009 waves of the China Health and Nutrition Survey. It finds that the program has significantly increased the utilization of formal medical services. This result is robust to various specifications and multiple estimation strategies. However, there is no evidence that it has reduced out-of-pocket expenditure and some evidence suggesting that it has increased the total health care expenditure. It also finds that the program has improved medical care utilization more for the elderly, for the low- and middle-income families, and for the residents in the relatively poor western region.