RESEARCH TWITTER

Wenjin Li, Roberta M. Ray, David B. Thomas, Michael Yost, Scott Davis, Norman Breslow, Dao Li Gao, E. Dawn Fitzgibbons, Janice E. Camp, Eva Wong, Karen J. Wernli, and Harvey Checkoway. **"Occupational Exposure to Magnetic Fields and Breast Cancer Among Women Textile Workers in Shanghai, China."** *American Journal of Epidemiology*, 2013, 178: 1038-45.

A nested case-cohort study was conducted to investigate the association between occupational exposure to magnetic fields (MFs) and the risk of breast cancer within a cohort of 267,400 female textile workers in Shanghai, China. The study included 1,687 incident breast cancer cases diagnosed from 1989 to 2000 and 4,702 noncases selected from the cohort. Subjects' complete work histories were linked to a job–exposure matrix developed specifically for the present study to estimate cumulative MF exposure. No association was observed between cumulative exposure to MFs and overall risk of breast cancer. The hazard ratio for the highest compared with the lowest quartile of cumulative exposure was 1.03 (95% CI: 0.87, 1.21). Similar null findings were observed when exposures were lagged and stratified by age at breast cancer diagnosis. The findings do not support the hypothesis that MF exposure increases the risk of breast cancer.

Danxia Yu, Xiao-Ou Shu, Honglan Li, Yong-Bing Xiang, Gong Yang, Yu-Tang Gao, Wei Zheng and Xianglan Zhang. **"Dietary Carbohydrates, Refined Grains, Glycemic Load, and Risk of Coronary Heart Disease in Chinese Adults."** *American Journal of Epidemiology*, 2013, 178: 1542-49.

The authors prospectively examined intakes of carbohydrates and staple grains as well as glycemic index and glycemic load in relation to of coronary heart disease (CHD) among 117,366 Chinese women and men (40–74 years of age) without history of diabetes, CHD, stroke, or cancer at baseline in Shanghai, China. Diet was assessed using validated food frequency questionnaires. Incident CHD cases were ascertained during follow-ups and confirmed by medical records. Carbohydrate intake accounted for 67.5% of the total energy intake in women and 68.5% in men. Seventy percent of total carbohydrates came from white rice and 17% were from refined wheat products. Positive associations between carbohydrate intakess and CHD were found in both sexes (all P for heterogeneity > 0.35). The combined multivariate-adjusted hazard ratios for the lowest to highest quartiles of carbohydrate intake, respectively, were 1.00, 1.38, 2.03, and 2.88 (95% CI: 1.44, 5.78; P for trend = 0.001). The combined hazard ratios comparing the highest quartile with the lowest were 1.80 (95% CI: 1.01, 3.17) for refined grains and 1.87 (95% CI: 1.00, 3.53) for glycemic load (both P for trend = 0.03). High carbohydrate intake, mainly from refined grains, is associated with increased CHD risk in Chinese adults.

Jay Pan, Gordon G. Liu, Chen Gao. **"How does separating government regulatory and operational control of public hospitals matter to healthcare supply?"** *China Economic Review*, 2013, 27: 1–14.

This paper evaluates the effect of regulatory reform separating the operational control and regulatory oversight of public hospitals in China. Using city-level data and a difference-in-difference (DID) model, this paper estimates the changes in healthcare supply in response to the regulatory reform. Based on the DID estimates, in Weifang between 2006 and 2008, the reform led to a 39.3% increase in the number of doctors per 10,000 residents and 40.1% increase in the number of health workers per 10,000 residents. Similarly, in Suzhou between 2005 and 2008 the reform led to increases of 60.5%, 30.8% and 36.6% for hospital beds, doctors and health workers per 10,000 people, respectively. Moreover, the magnitude of this impact appears to increase over time. Furthermore, the effect of the reform is consistent regardless of whether the separation reform takes place inside

or outside the government. This paper concludes that the government should focus only on the regulation of healthcare markets, while leaving hospital operation to the free market.

Martine Audibert, Jacky Mathonnat, Aurore Pelissier, Xiao Xian Huang, Anning Ma. **"Health insurance reform and efficiency of township hospitals in rural China: An analysis from survey data."** *China Economic Review*, 2013, 27: 326–38.

From a database of 24 randomly selected township hospitals observed over the period 2000–2008 in Weifang Prefecture (Shandong), this study examines the efficiency of township hospitals through a two-stage approach. As curative and preventive medical services delivered at township hospital level use different production processes, two data envelopment analysis models are estimated with different orientations to compute scores. The results show that technical efficiency has declined over time. The factors explaining technical efficiency are mainly environmental characteristics rather than internal ones. Among these environmental factors, New Rural Cooperative Medical Scheme (NRCMS) has in average a negative effect on the evolution of township hospitals (THs) efficiency, although efficiency has improved for some of them. Results also suggest that, in the context of China, the efficiency of THs is influenced by unobservable factors. From the findings, the authors suggest five main orientations to improve THs efficiency.

Yi Hu, Qi Zhao, Linlin Wu, Weibing Wang, Zhenan Yuan, and Biao Xu. **"Prevalence of latent tuberculosis infection and its risk factors in schoolchildren and adolescents in Shanghai, China."** *European Journal of Public Health*, 2013, 23: 1064-69.

This study aimed to determine the prevalence and risk factors associated with latent tuberculosis infection (LTBI) in schoolchildren and adolescents from Shanghai, China. In this cross-sectional study, the authors administered T-SPOT.TB and TB infection risk factor questionnaire to children and adolescents aged between 10 and 18 years in 2010 in Shanghai. A total of 1,106 schoolchildren and adolescents were enrolled, of which 46.1% were male, and 91.8% were vaccinated with Bacille Calmette Guerin (BCG). Overall, 52 (4.7%) children had a positive T-SPOT.TB result, with significant increase in age distribution. However, none of the participants demonstrated TB-related abnormality on X-ray examination. Multivariate analysis showed that LTBI was associated with no BCG vaccination (odds ratio: 2.40; 95% CI: 1.182–5.335) and a history of TB exposure (odds ratio: 6.89; 95% CI: 3.095–15.35). For 46 children and adolescents with history of TB exposure, contact hours per week of TB cases were significantly associated with risk of LTBI. This study concluded that prevalence of LTBI in schoolchildren and adolescents in Shanghai is relatively low compared with other high epidemic areas of TB. A higher risk of LTBI was observed among children with no BCG vaccination and those with a history of TB exposure, which suggests that the prevalence of LTBI among schoolchildren could be further reduced by strengthening BCG vaccination under the national immunization programme and enhancing contact investigation of active TB patients.

Lianping Yang, Chaojie Liu, J. Adamm Ferrier, Wei Zhou and Xinping Zhang. **"The impact of the National Essential Medicines Policy on prescribing behaviours in primary care facilities in Hubei province of China."** *Health Policy and Planning*, 2013, 28: 750-60.

This study assessed the impact of the National Essential Medicines Policy (NEMP) on the use of medicines in government-owned primary care institutions in Hubei province of China. A systematic random sampling strategy was employed to select 55,800 prescriptions from 18 primary care organizations who progressively implemented the NEMP from January 2009 to July 2011. The facilities that implemented the NEMP at a later stage served as control. This study found an immediate increased uptake of essential medicines of all drugs prescribed which ultimately neared 95%. In total, 38,151 prescriptions (68%) involved antibiotics and there was no evidence of reduction

after the NEMP interventions. A high percentage (59–66%) of prescription drugs were administered through parenteral routes and no reduction was found after the NEMP interventions. Although the average number of medicines per prescription remained unchanged (nearly four), the average cost per prescription declined significantly after the NEMP interventions (¥ 44.67 vs ¥ 26.67 CNY, $P < 0.03$). This study concluded that the NEMP interventions reduced the average cost per prescription; however, the irrational use of antibiotics and unnecessary parenteral administration remains prevalent. The goals of the NEMP are partially achieved; the authors therefore recommend a strategic approach involving all stakeholders to comprehensively achieve all aspirations.

Hana Brixi, Yan Mu, Beatrice Targa and David Hipgrave. **"Engaging sub-national governments in addressing health equities: challenges and opportunities in China's health system reform."** *Health Policy and Planning*, 2013, 28: 809-24.

The authors describe the recent trend in health inequalities in China, and analyse government expenditure on health in the context of China's decentralization and intergovernmental model to assess whether national, provincial and sub-provincial public resource allocations and local government accountability relationships are aligned with this goal. Results show that government expenditure on health at sub-national levels, which accounts for ~90% of total government expenditure on health, is increasingly regressive across provinces, and across prefectures within provinces. Increasing inequity in public expenditure at sub-national levels indicates that resources and responsibilities at sub-national levels in China are not well aligned with national priorities. China's health system reform (HSR) would benefit from complementary measures to improve the governance and financing of public service delivery. Drawing on China's institutional framework and ongoing reform pilots, the authors present possible approaches to: (1) consolidate key health financing responsibilities at the provincial level and strengthen the accountability of provincial governments, (2) define targets for expenditure on primary health care, outputs and outcomes for each province and (3) use independent sources to monitor and evaluate policy implementation and service delivery and to strengthen sub-national government performance management.

Ying-Yeh Chen, David Gunnell, Chin-Li Lu, Shu-Sen Chang, Tsung-Hsueh Lu and Chung-Yi Li. **"Perinatal risk factors for suicide in young adults in Taiwan."** *International Journal of Epidemiology*, 2013, 42: 1381-89.
This study investigated the association of early life social factors—maternal age, single motherhood, socioeconomic position, birth order and family size—with future risk of suicide in Taiwan. It used a nested case-control design and used linked data from Taiwan's Birth Registry (1978–93) and Taiwan's Death Registry (1993–2008) and identified 3984 suicides aged 15–30 years. Conditional logistic regression models were estimated to assess the association of early life risk factors with suicide. It found that younger maternal age (<25 years), single motherhood, lower paternal educational level and higher birth order were independently associated with increased risk of suicide. Stratified analyses suggest that lower paternal educational level was associated with male, but not female suicide risk ($P_{interaction}$ = 0.02). Single motherhood was a stronger risk factor for suicide in female than in male offspring [odds ratios (95% CI) = 2.30 (1.47, 3.58) vs. 1.50 (1.01, 2.20), $P_{interaction}$ = 0.12]. There was a suggestion that in families with large sibship size (⩾4 siblings), the excess in suicide risk was greater among later born daughters compared with later born sons ($P_{interaction}$ = 0.05). The findings provide support for the results of European studies, suggesting that early life social circumstances influence future risk of suicide.

Chen Shen, Michael Yuxuan Ni, C. Mary Schooling, Wai Man Chan, Siu Yin Lee, Tai Hing Lam. **"Alcohol use and death from respiratory disease in a prospective Chinese elderly cohort study in Hong Kong."** *Preventive Medicine*, 2013, 57: 819–23.

This paper assessed the adjusted associations of alcohol use with death from respiratory disease using a population-based prospective cohort of 66,820 Chinese aged ⩾ 65 years enrolled from July 1998 to December 2001 at all the 18 Elderly Health Centers of the Hong Kong Government Department of Health and followed till May 30, 2012. During ten-year follow-up, 4,065 deaths from respiratory disease occurred. Most current drinkers were occasional drinkers (< 1 day/week). Both moderate and occasional drinking (< 1 day/week) were associated with a lower risk of death from respiratory disease, but the point estimates and pattern of associations were similar between these two types of drinkers. This paper concluded that the typical drinking pattern, i.e. occasional drinking (< 1 day/week), which is unlikely to have any biological effect, was similarly associated with a lower risk of respiratory disease as moderate alcohol use, suggesting the attributes of being a typical drinker may be protective.

Junling Gao, Eric J. Nehl, Hua Fu, Yingnan Jia, Xingdi Liu, Pinpin Zheng. **"Workplace social capital and smoking among Chinese male employees: A multi-level, cross-sectional study."** *Preventive Medicine*, 2013, 57: 831–36.

This study aimed to investigate the associations between workplace social capital and smoking status among Chinese male employees. A cross sectional study with a two-stage stratified sampling procedure was conducted in Shanghai in 2012. In total, 1,603 male workers from 35 workplaces were involved. Workplace social capital was assessed using a validated and psychometrically tested eight-item measure. This study found that overall, 54.2% of the subjects smoked currently. After controlling for individual covariates (age, education level, marital status, occupational status and job stress), compared to workers in the highest quartile of individual-level social capital, the prevalence ratios of smoking for workers in the third quartile, second quartile and lowest quartile were 1.26 (95% CI: 1.11–1.38), 1.35 (95% CI: 1.19–1.50) and 1.39 (95% CI: 1.24–1.51) respectively. However, there was no relationship between workplace-level social capital and smoking status. This study concluded that higher individual-level social capital was associated with a lower likelihood of smoking among Chinese male employees. By contrast, no clear association was found between workplace-level social capital and smoking.

Bo Xi, Dan He, Yuehua Hu, Donghao Zhou. **"Prevalence of metabolic syndrome and its influencing factors among the Chinese adults: The China Health and Nutrition Survey in 2009."** *Preventive Medicine*, 2013, 57: 867–71.

This study aimed to estimate the up-to-date prevalence of metabolic syndrome (MS) and its influencing factors among the Chinese adults. Data were obtained from the China Health and Nutrition Survey conducted in 2009, which was a cross-sectional and partially nationally representative study including a total of 7,488 Chinese adults (age ⩾ 18 years). This study found that the overall age-standardized prevalence estimates of the MS were 21.3% (95% CI: 20.4%–22.2%), 18.2% (95% CI: 17.3%–19.1%) and 10.5% (95% CI: 9.8%–11.2%) based on definitions of revised NCEP ATPIII, IDF and CDS criteria, respectively. Individuals who were women (compared to men: odds ratio [OR] = 1.37, 95% CI = 1.16–1.61), 40 years or older (compared to less than 40 years old: OR = 2.82, 95% CI = 2.37–3.34 for 40–59 years; OR = 4.41, 95% CI = 3.68–5.29 for 60 years or older), overweight/obese (compared to normal weight: OR = 4.32, 95% CI = 3.77–4.95 for overweight; OR = 11.24, 95% CI = 9.53–13.26 for obese), and living in urban area (compared to living in rural area: OR = 1.27, 95% CI = 1.12–1.43) were more likely to have a higher prevalence estimate of MS. In addition, frequency of alcohol consumption and cigarette intake were also found to be significantly associated with probability of MS. The results suggest an urgent need to develop national strategies for the prevention, detection, treatment and control of obesity and MS in China.