

RESEARCH TWITTER

Yikyung Park, Sophia Wang, Cari M. Kitahara, Steven C. Moore, Amy Berrington de Gonzalez, Leslie Bernstein, Ellen T. Chang, Alan J. Flint, D. Michal Freedman, J. Michael Gaziano, Robert N. Hoover, Martha S. Linet, Mark Purdue, Kim Robien, Catherine Schairer, Howard D. Sesso, Emily White, Bradley J. Willcox, Michael J. Thun, Patricia Hartge, and Walter C. Willett. **“Body Mass Index and Risk of Death in Asian Americans.”** *American Journal of Public Health*, 2014, 104: 520-25.

The authors investigated the association between body mass index (BMI) and mortality among Asian Americans. They pooled data from prospective cohort studies with 20,672 Asian American adults with no baseline cancer or heart disease history. They found that a high, but not low, BMI was associated with increased risk of total mortality among individuals aged 35 to 69 years. The BMI was not related to total mortality among individuals aged 70 years and older. With a BMI 22.5 to <25 as the reference category among never-smokers aged 35 to 69 years, the hazard ratios for total mortality were 0.83 (95% CI=0.47, 1.47) for BMI 15 to <18.5; 0.91 (95% CI=0.62, 1.32) for BMI 18.5 to <20; 1.08 (95% CI=0.86, 1.36) for BMI 20 to <22.5; 1.14 (95% CI=0.90, 1.44) for BMI 25 to <27.5; 1.13 (95% CI=0.79, 1.62) for BMI 27.5 to <30; 1.82 (95% CI=1.25, 2.64) for BMI 30 to <35; and 2.09 (95% CI=1.06, 4.11) for BMI 35 to 50. Higher BMI was also related to increased cardiovascular disease and cancer mortality. The authors concluded that high BMI is associated with increased mortality risk among Asian Americans.

David Levy, Ricardo L Rodríguez-Buño, Teh-Wei Hu, Andrew E Moran. **“The potential effects of tobacco control in China: projections from the China SimSmoke simulation model.”** *BMJ*, 2014, 348:g1134.

The authors used a computer simulation model to project the potential impact in China of tobacco control measures on smoking, as recommended by the World Health Organization Framework Convention on Tobacco Control (FCTC). Status quo tobacco policy simulations projected a decline in smoking prevalence from 51.3% in 2015 to 46.5% by 2050 in males and from 2.1% to 1.3% in females. Of the individual FCTC recommended tobacco control policies, increasing the tobacco excise tax to 75% of the retail price was projected to be the most effective, incrementally reducing current smoking compared with the status quo by 12.9% by 2050. Complete and simultaneous implementation of all FCTC policies was projected to incrementally reduce smoking by about 40% relative to the 2050 status quo levels and to prevent approximately 12.8 million smoking attributable deaths and 154 million life years lost by 2050. The authors concluded that complete implementation of WHO FCTC recommended policies would prevent more than 12.8 million smoking attributable deaths in China by 2050. Implementation of FCTC policies would alleviate a substantial portion of the tobacco related health burden that threatens to slow China's extraordinary gains in life expectancy and prosperity.

Xing Lin Feng, Mingfan Pang & John Beard. **“Health system strengthening and hypertension awareness, treatment and control: data from the China Health and Retirement Longitudinal Study.”** *Bulletin of the World Health Organization*, 2014, 92: 29-41.

This paper used a national survey conducted in 2011–2012 among Chinese people aged 45 years or older to estimate the prevalence of hypertension and the percentages of hypertensive individuals who were unaware of, receiving no treatment for, and/or not controlling their hypertension well. It found that nearly 40% of Chinese people aged 45 years or older had a hypertensive disorder. Of the individuals with hypertension, more than 40% were unaware of their condition, about 50% were receiving no medication for it and about 80% were not controlling it well. Compared with the other hypertensive individuals, those who were members of insurance schemes

that covered the costs of outpatient care were more likely to be aware of their hypertension (adjusted RR, aRR: 0.737; 95% CI: 0.619–0.878), to be receiving treatment for it (aRR: 0.795; 95% CI: 0.680–0.929), and to be controlling it effectively (aRR: 0.903; 95% CI: 0.817–0.996). This paper concluded that many cases of hypertension in China were undetected and untreated. A reduction in the costs of outpatient care to patients would probably improve the management of hypertension in China.

Winnie Yip, Timothy Powell-Jackson, Wen Chen, Min Hu, Eduardo Fe, Mu Hu, Weiyan Jian, Ming Lu, Wei Han, and William C. Hsiao. **“Capitation Combined With Pay-For-Performance Improves Antibiotic Prescribing Practices In Rural China.”** *Health Affairs*, 2014, 33: 502-10.

In collaboration with the government of Ningxia Province, a predominantly rural area in northwest China, the authors conducted a matched-pair cluster-randomized experiment between 2009 and 2012 to evaluate the effects of capitation with pay-for-performance on primary care providers' antibiotic prescribing practices, health spending, outpatient visit volume, and patient satisfaction. They found that the intervention led to a reduction of approximately 15 percent in antibiotic prescriptions and a small reduction in total spending per visit to village posts. They found no effect on other outcomes. The results suggest that capitation with pay-for-performance can improve drug prescribing practices by reducing overprescribing and inappropriate prescribing.

Maigeng Zhou, Guoqing Hu, Lijun Wang, Sai Ma, Lin Wang, Qingfeng Li, Adnan A Hyder. **“Bicyclist mortality between 2006 and 2010 in China: findings from national Disease Surveillance Points (DSP) data.”** *Injury Prevention*, 2014, 20: 7-10.

This paper examined changes in bicyclist mortality between 2006 and 2010 in China using the Disease Surveillance Points (DSP) data of China. It analyzed mortality data of 2006–2010 from DSP data that covered 73 million population, using Poisson regression to examine the significance of year after controlling for sex, age and urban/rural location. It found that between 2006 and 2010, the mortality rate for bicyclists increased from 1.1 to 1.6 per 100,000 population. Between 2006 and 2010, more than 90% of bicyclist deaths were undercounted by the police compared to the findings from DSP data. Contrary to the 34% increase between 2006 and 2010 reflected by DSP data (adjusted mortality rate ratio (MRR): 1.34, 95% CI 1.23 to 1.46), police data revealed a 64% decrease in bicyclist mortality (unadjusted MRR: 0.36, 95% CI 0.32 to 0.40) in the study time period. This paper concluded that health data should be used to assess the road traffic injuries in China. The recent increase in bicyclist mortality merits attention from policy makers and researchers.

Hong Jiang, Mu Li, Li Ming Wen, Qiaozhen Hu, Dongling Yang, Gengsheng He, Louise A. Baur, Michael J. Dibley, Xu Qian. **“Effect of Short Message Service on Infant Feeding Practice: Findings From a Community-Based Study in Shanghai, China.”** *JAMA Pediatrics*, published online March 17, 2014. doi:10.1001/jamapediatrics.2014.58.

This paper assessed the effect of a short message service (SMS) intervention on infant feeding practices. Quasiexperimental design with follow-up measures scheduled at 4, 6, and 12 months at 4 community health centers in Shanghai, China. Two community health centers represented the intervention group, and 2 other community health centers represented the control group. In total, 582 expectant mothers were recruited during the first trimester. Mothers in the intervention group received weekly SMS messages about infant feeding from the third trimester to 12 months' post partum. The primary outcome was the duration of exclusive breastfeeding (EBF). Compared with the control group, the intervention group had a significantly longer median duration of EBF at 6 months (11.41 [95% CI, 10.25-12.57] vs 8.87 [95% CI, 7.84-9.89] weeks). The hazard ratio for stopping EBF in the intervention group was 0.80 (95% CI, 0.66-0.97). The intervention resulted in a significantly

higher rate of EBF at 6 months (adjusted OR, 2.67 [95% CI, 1.45-4.91]) and a significantly lower rate of the introduction of solid foods before 4 months (adjusted OR, 0.27 [95% CI, 0.08-0.94]). This paper concluded that an SMS intervention may be effective in promoting EBF, delaying the introduction of solid foods, increasing awareness of the World Health Organization breastfeeding guidelines, and improving knowledge of appropriate infant feeding practices for new mothers.

Qun Li, Lei Zhou, Minghao Zhou, Zhiping Chen, Furong Li, Huanyu Wu, Nijuan Xiang, Enfu Chen, Fenyang Tang, Dayan Wang, Ling Meng, Zhiheng Hong, Wenxiao Tu, Yang Cao, Leilei Li, Fan Ding, Bo Liu, Mei Wang, Rongheng Xie, Rongbao Gao, Xiaodan Li, Tian Bai, Shumei Zou, Jun He, Jiayu Hu, Yangting Xu, Chengliang Chai, Shiwen Wang, Yongjun Gao, Lianmei Jin, Yanping Zhang, Huiming Luo, Hongjie Yu, Jianfeng He, Qi Li, Xianjun Wang, Lidong Gao, Xinghuo Pang, Guohua Liu, Yansheng Yan, Hui Yuan, Yuelong Shu, Weizhong Yang, Yu Wang, Fan Wu, Timothy M. Uyeki, and Zijian Feng. **“Epidemiology of Human Infections with Avian Influenza A(H7N9) Virus in China.”** *New England Journal of Medicine*, 2014, 370: 520-32.

The authors analyzed data obtained from field investigations to describe the epidemiologic characteristics of avian influenza A (H7N9) cases in China identified as of December 1, 2013. Among 139 persons with confirmed H7N9 virus infection, the median age was 61 years (range, 2 to 91), 71% were male, and 73% were urban residents. Confirmed cases occurred in 12 areas of China. Nine persons were poultry workers, and of 131 persons with available data, 82% had a history of exposure to live animals, including chickens (82%). A total of 137 persons (99%) were hospitalized, 125 (90%) had pneumonia or respiratory failure, and 65 of 103 with available data (63%) were admitted to an intensive care unit. A total of 47 persons (34%) died in the hospital after a median duration of illness of 21 days, 88 were discharged from the hospital, and 2 remain hospitalized in critical condition; 2 patients were not admitted to a hospital. In four family clusters, human-to-human transmission of H7N9 virus could not be ruled out. Excluding secondary cases in clusters, 2675 close contacts of case patients completed the monitoring period; respiratory symptoms developed in 28 of them (1%); all tested negative for H7N9 virus. The authors concluded that most persons with confirmed H7N9 virus infection had severe lower respiratory tract illness, were epidemiologically unrelated, and had a history of recent exposure to poultry. However, limited, nonsustained human-to-human H7N9 virus transmission could not be ruled out in four families.

Fengcai Zhu, Wenbo Xu, Jielai Xia, Zhenglun Liang, Yan Liu, Xuefeng Zhang, Xiaojuan Tan, Ling Wang, Qunying Mao, Junyu Wu, Yuemei Hu, Tianjiao Ji, Lifei Song, Qi Liang, Baomin Zhang, Qiang Gao, Jingxin Li, Shenyu Wang, Yuansheng Hu, Shanru Gu, Jianhua Zhang, Genhong Yao, Jianxiang Gu, Xushan Wang, Yuchun Zhou, Changbiao Chen, Minglei Zhang, Minquan Cao, Junzhi Wang, Hua Wang, and Nan Wang. **“Efficacy, Safety, and Immunogenicity of an Enterovirus 71 Vaccine in China.”** *New England Journal of Medicine*, 2014, 370: 818-28.

The authors conducted a randomized, double-blind, placebo-controlled, multicenter trial to evaluate the efficacy, safety, and immunogenicity of an Enterovirus 71 (EV71) vaccine. In the trial 10,007 healthy infants and young children (6 to 35 months of age) were randomly assigned in a 1:1 ratio to receive two intramuscular doses of either EV71 vaccine or placebo, 28 days apart. During the 12-month surveillance period, EV71-associated disease was identified in 0.3% of vaccine recipients (13 of 5041 children) and 2.1% of placebo recipients (106 of 5028 children) in the intention-to-treat cohort. The vaccine efficacy against EV71-associated hand, foot, and mouth disease or herpangina was 94.8% (95% CI, 87.2 to 97.9) in this cohort. Vaccine efficacies against EV71-associated hospitalization (0 cases vs. 24 cases) and hand, foot, and mouth disease with neurologic complications (0 cases vs. 8 cases) were both 100% (95% CI, 83.7 to 100 and 42.6 to 100, respectively). Serious adverse events occurred in 111 of 5044 children in the vaccine group (2.2%) and 131 of 5033 children in the placebo group (2.6%). In the immunogenicity subgroup (1291 children), an anti-EV71 immune response was elicited by the two-dose vaccine series in 98.8% of

participants at day 56. An anti-EV71 neutralizing antibody titer of 1:16 was associated with protection against EV71-associated hand, foot, and mouth disease or herpangina. The authors concluded that the EV71 vaccine provided protection against EV71-associated hand, foot, and mouth disease or herpangina in infants and young children.

Hongjie Yu, Joseph T Wu, Benjamin J Cowling, Qiaohong Liao, Vicky J Fang, Sheng Zhou, Peng Wu, Hang Zhou, Eric H Y Lau, Danhuai Guo, Michael Y Ni, Zhibin Peng, Luzhao Feng, Hui Jiang, Huiming Luo, Qun Li, Zijian Feng, Yu Wang, Weizhong Yang, Gabriel M Leung. **“Effect of closure of live poultry markets on poultry-to-person transmission of avian influenza A H7N9 virus: an ecological study.”** *The Lancet*, 2014, 383: 541-48.

The authors aimed to quantify the effect of live poultry markets (LPMs) closure on poultry-to-person transmission of avian influenza A H7N9 virus in the major Chinese cities of Shanghai, Hangzhou, Huzhou, and Nanjing where most human cases of infection had occurred. They obtained information about every laboratory-confirmed human case of avian influenza A H7N9 virus infection reported in the four cities by June 7, 2013, from a database built by the Chinese Center for Disease Control and Prevention. They found that 85 human cases of avian influenza A H7N9 virus infection were reported in Shanghai, Hangzhou, Huzhou, and Nanjing by June 7, 2013, of which 60 were included in the main analysis. Closure of LPMs reduced the mean daily number of infections by 99% (95% credibility interval 93—100%) in Shanghai, by 99% (92—100%) in Hangzhou, by 97% (68—100%) in Huzhou, and by 97% (81—100%) in Nanjing. Because LPMs were the predominant source of exposure to avian influenza A H7N9 virus for confirmed cases in these cities, they estimated that the mean incubation period was 3.3 days (1.4—5.7). The authors concluded that LPM closures were effective in the control of human risk of avian influenza A H7N9 virus infection in the spring of 2013. In the short term, LPM closure should be rapidly implemented in areas where the virus is identified in live poultry or people. In the long term, evidence-based discussions and deliberations about the role of market rest days and central slaughtering of all live poultry should be renewed.

Lixia Wang, Hui Zhang, Yunzhou Ruan, Daniel P Chin, Yinyin Xia, Shiming Cheng, Mingting Chen, Yanlin Zhao, Shiwen Jiang, Xin Du, Guangxue He, Jun Li, Shengfen Wang, Wei Chen, Caihong Xu, Fei Huang, Xiaoqiu Liu, Yu Wang. **“Tuberculosis prevalence in China, 1990—2010; a longitudinal analysis of national survey data.”** *The Lancet*, Early Online Publication, 18 March 2014, doi:10.1016/S0140-6736(13)62639-2.

China scaled up a tuberculosis control programme (based on the directly observed treatment, short-course [DOTS] strategy) to cover half the population during the 1990s and to the entire population after 2000. The authors assessed the effect of the programme. In the longitudinal analysis, they compared data from three national tuberculosis prevalence surveys done in 1990, 2000, and 2010. The 2010 survey screened 252,940 eligible individuals aged 15 years and older at 176 investigation points, chosen by stratified random sampling from all 31 mainland provinces. The 1990 and 2000 surveys were reanalysed and compared with the 2010 survey. From 1990 to 2010, the prevalence of smear-positive tuberculosis decreased from 170 cases (95% CI 166—174) to 59 cases (49—72) per 100 000 population. During the 1990s, smear-positive prevalence fell only in the provinces with the DOTS programme; after 2000, prevalence decreased in all provinces. The percentage reduction in smear-positive prevalence was greater for the decade after 2000 than the decade before (57% vs 19%; $p < 0.0001$). 70% of the total reduction in smear-positive prevalence (78 of 111 cases per 100,000 population) occurred after 2000. Of these cases, 68 (87%) were in known cases—ie, cases diagnosed with tuberculosis before the survey. Of the known cases, the proportion treated by the public health system (using the DOTS strategy) increased from 59 (15%) of 370 cases in 2000 to 79 (66%) of 123 cases in 2010, contributing to reduced proportions of treatment default (from 163 [43%] of 370 cases to 35 [22%] of 123 cases) and retreatment cases (from 312 [84%] of 374 cases to 48 [31%] of 137 cases; both $p < 0.0001$). The authors concluded that in 20 years China

more than halved its tuberculosis prevalence and marked improvement in tuberculosis treatment, driven by a major shift in treatment from hospitals to the public health centres, was largely responsible for this epidemiological effect.