# Literature Report

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#### Abstract

## A View from the Bridge: Health Economic Evaluation — A Value-Based Framework?

• Health Economics---2016---Andrew Briggs

2016

## On a Family of Achievement and Shortfall Inequality Indices

 Health Economics---2016---Satya Chakravarty, Nachiketa Chattopadhyay, Conchita D'Ambrosio

2016

# **Examination of the Synthetic Control Method for Evaluating Health Policies with Multiple Treated Units**

 Health Economics---2016---Noemi Kreif,Richard Grieve,Dominik Hangartner,Alex James Turner,Silviya Nikolova,Matt Sutton

2016

## Measuring Health Spillovers for Economic Evaluation: A Case Study in Meningitis

• Health Economics---2016---Hareth Al-Janabi, Job van Exel, Werner Brouwer, Caroline Trotter, Linda Glennie, Laurie Hannigan, Joanna Coast

2016

# Promoting Handwashing Behavior: The Effects of Large-scale Community and School-level Interventions

• Health Economics---2016---Sebastian Galiani,Paul Gertler,Nicolas Ajzenman,Alexandra Orsola-Vidal

This paper analyzes a randomized experiment that uses novel strategies to promote handwashing with soap at critical points in time in Peru. It evaluates a large-scale comprehensive initiative that involved both community and school activities in addition to communication campaigns. The analysis indicates that the initiative was successful in reaching the target audience and in increasing the treated population's knowledge about appropriate handwashing behavior. These improvements translated into higher self-reported and observed handwashing with soap at critical junctures. However, no significant improvements in the health of children under the age of 5 years were observed. Copyright © 2015 John Wiley & Sons, Ltd.

## To Vaccinate or to Procrastinate? That is the Prevention Question

• Health Economics---2016---Robert Nuscheler, Kerstin Roeder

2016

## Supplemental Health Insurance and Healthcare Consumption—A Dynamic Approach to Moral Hazard

• Health Economics---2016---Carine Franc,Marc Perronnin,Aurélie Pierre

2016

#### Differential Effects of Declining Rates in a Per Diem Payment System

• Health Economics---2016---Galina Besstremyannaya

The paper demonstrates differential effects of a prospective payment system with declining per diem rates, dependent on the percentiles of length of stay. The analysis uses dynamic panel data estimates and a recent nationwide administrative database for major diagnostic categories in 1068 Japanese hospitals in 2006-2012 to show that average length of stay significantly increases for hospitals in percentiles 0–25 of the pre-reform length of stay and significantly decreases for hospitals in percentiles 51–100. The decline of the average length of stay is larger for hospitals in higher percentiles of the length of stay. Hospitals in percentiles 51–100 significantly increase their rate of nonemergency/unanticipated readmissions within 42 days after discharge. The decline in the length of total episode of treatment is smaller for hospitals in percentiles 0-25. The findings are robust in terms of the choice of a cohort of hospitals joining the reform. The paper discusses applicability of 'best practice' rate-setting to help improve the performance of hospitals in the lowest quartile of average length of stay. Copyright © 2015 John Wiley & Sons, Ltd.

#### Time and Health Status in Health Economics

• Health Economics---2016---John Mullahy

2016

#### A Theory of Waiting Time Reporting and Quality Signaling

 Health Economics---2016---Yijuan Chen, Juergen Meinecke, Peter Sivey

2016

# The Impact of an Increase in User Costs on the Demand for Emergency Services: The Case of Portuguese Hospitals

• Health Economics---2016---Pedro Ramos, Alvaro Almeida

Evidence on the impact of user costs on healthcare demand in 'universal' public National Health Services (NHS) is scarce. The changes in copayments and in the regulation of the provision of free patient transportation, introduced in early 2012 in Portugal, provide a natural experiment to evaluate that impact. However, those changes in user costs were accompanied with changes in the criteria that determine which patients are exempt from copayments, implying that simple comparisons of user rates would be biased. In this paper, we develop a new methodology to evaluate the impact of increases in direct and indirect user costs on the demand for emergency services (ES) in the presence of compositional changes in co-payment exempt and non-exempt populations. Our results show that the increase in copayments did not have an effect in moderating ES demand by paying users, but we find significant effects of the change in transport regulation. Thus, our results support the conclusion that indirect costs may be more important than direct costs in determining healthcare demand in NHS-countries where copayments are small and wide exemption schemes are in place, especially for older patients. Copyright © 2015 John Wiley & Sons, Ltd.

## Health Insurance and Health Status: Exploring the Causal Effect from a Policy Intervention

• Health Economics---2016---Jay Pan,Xiaoyan Lei,Gordon G. Liu

Whether health insurance matters for health has long been a central issue for debate when assessing the full value of health insurance coverage in both developed and developing countries. In 2007, the governmentled Urban Resident Basic Medical Insurance (URBMI) program was piloted in China, followed by a nationwide implementation in 2009. Different premium subsidies by government across cities and groups provide a unique opportunity to employ the instrumental variables estimation approach to identify the causal effects of health insurance on health. Using a national panel survey of the URBMI, we find that URBMI beneficiaries experience statistically better health than the uninsured. Furthermore, the insurance health benefit appears to be stronger for groups with disadvantaged education and income than for their counterparts. In addition, the insured receive more and better inpatient care, without paying more for services. Copyright © 2015 John Wiley & Sons, Ltd.

## Price Elasticities of Food Demand: Compensated vs Uncompensated

• Health Economics---2016---Kenneth Clements, Jiawei Si

Two recent studies have provided a comprehensive review/summary of a large number of estimates of the price elasticity of food consumption using a meta-regression approach. In this letter, we introduce a way of removing the income effect from these elasticities to recover the compensated elasticities. Although the income effect is small, the compensated elasticities vary by income group. Both types of elasticity should possibly be considered when assessing the impact of policy changes on food consumption. Copyright © 2015 John Wiley & Sons, Ltd.

## Limited Self-control, Obesity, and the Loss of Happiness

 Health Economics---2016---Alois Stutzer, Armando Meier

Is obesity the consequence of an optimally chosen lifestyle or do people consume too much relative to their long-term preferences? The latter perspective accepts that people might face self-control problems when exposed to the immediate gratification from food. We exploit unique survey data for Switzerland in multinomial logit and ordered probit regressions to study (i) the covariates of obesity including indicators of self-control and (ii) the consequences of obesity on the subjective well-being of people with limited willpower. Our main finding is that obesity decreases the well-being of individuals who report having limited self-control, but not otherwise. © 2015 John Wiley & Sons, Ltd.

## **Consistent Comparisons of Attainment and Shortfall Inequality: A Critical Examination**

• Health Economics---2016---Kristof Bosmans

2016

## The Impact of Physician Supply on the Healthcare System: Evidence from Japan's New Residency Program

• Health Economics---2016---Toshiaki Iizuka, Yasutora Watanabe

Using a 2004 Japanese natural experiment affecting physician supply, we study the physician labor market and its effects on hospital exits and health outcomes. Although physicians play a central role in determining the performance of a healthcare system, identifying their impacts are difficult because physician supply is endogenously determined. We circumvent the problem by exploiting an exogenous shock to physician supply created by the introduction of a new residency program – our natural experiment. Based on panel data covering all physicians in Japan, we find that the introduction of a new residency program substantially decreased the supply of physicians in some rural markets where

local hospitals had relied on university hospitals for filling physician positions. We also find that physician market wages increased in the affected markets relative to less affected markets. Finally, we find that this change in physician market wages forced hospitals to exit affected markets and negatively affected patient health outcomes in those markets. These effects may be exacerbated by the fact that the healthcare market was rigidly price-regulated. Copyright © 2015 John Wiley & Sons, Ltd.

## Crime Victimisation and Subjective Well-Being: Panel Evidence From Australia

• Health Economics---2016---Stephane Mahuteau,Rong Zhu

2016

## Obesity and Smoking: can we Kill Two Birds with one Tax?

 Health Economics---2016---Davide Dragone,Francesco Manaresi,Luca Savorelli

2016

## Does Full Insurance Increase the Demand for Health Care?

• Health Economics---2016---Stefan Boes, Michael Gerfin

2016

## How Do Biomarkers and Genetics Contribute to Understanding Society?

• Health Economics---2016---Michaela Benzeval, Meena Kumari, Andrew Jones

2016

## The Short-Term Effect of Depressive Symptoms on Labor Market Outcomes

• Health Economics---2016---Lizhong Peng, Chad Meyerhoefer, Samuel H. Zuvekas

We estimated the short-term effects of symptoms of depression on labor market outcomes using data from the 2004–2009 Medical Expenditure Panel Survey. After accounting for the endogeneity of depression through a correlated random effects panel data specification, we found that exhibiting depressive symptoms reduces the likelihood of employment. We did not, however, find evidence of a causal relationship between depressive symptoms and hourly wages or weekly hours worked. Our estimates are substantially smaller than those from previous studies and imply that depressive symptoms reduce the contemporaneous probability of employment by 2.4 percentage points. In addition, we examined the effect of depression on work impairment and found that exhibiting depressive symptoms increases annual work loss days by about 1.4 days (33%), which implies that the annual aggregate productivity loses because of depression-induced absenteeism range from \$900m to \$1.9bn in 2009 USD. Copyright © 2015 John Wiley & Sons, Ltd.

## Population Aging and Healthcare Expenditure in Korea

• Health Economics---2016---Kyung-Rae Hyun,Sungwook Kang,Sunmi Lee

Korea's rapid population aging has been considered as a major factor in increase of healthcare expenditure (HCE). However, there were no clear empirical evidences in Korea that show if population aging has a significant impact on HCE. To examine the 'red herring' argument, this study used Heckman, two-part, and augmented model with Korean National Health Insurance claim data for the deceased and survivors of aged 20 years and over verified by Korean National Health Insurance Service between January 1 and December 31, 2010. Our results suggest that when time to death is controlled for as explanatory variable, HCE decreases as a function of age, and HCE during the terminal year increases as a function of time to death, and HCE in the last quarter of life decreases with age. Therefore, this study affirms that there is no age effect in Korea experiencing the most rapid population aging among Asian countries. An increase in the number of elderly, due to the aging of baby boomers, may not increase a share of HCE out of gross domestic product (GDP) in Korea. Copyright © 2015 John Wiley & Sons, Ltd.

### Health Consequences of Rural-to-Urban Migration: Evidence from Panel Data in China

• Health Economics---2016---Yang Song, Wenkai Sun

2016

## Identifying Demand Responses to Illegal Drug Supply Interdictions

• Health Economics---2016---Scott Cunningham, Keith Finlay

2016

# The Medical Cost Attributable to Obesity and Overweight in China: Estimation Based on Longitudinal Surveys

• Health Economics---2016---Xuezheng Qin, Jay Pan

With its rapid economic growth and fast changing lifestyle, China witnessed expansionary prevalence of obesity and overweight during the recent decades. This paper provides the first nationally representative estimate of the medical cost attributable to obesity and overweight in China. We improve upon the traditional estimation methodology (two-part model) by jointly adopting the instrumental variable approach and the panel data methods in order to correct for the potential endogeneity of body size and the individual heterogeneity in medical expenditure. Using longitudinal data from 2000–2009 China Health and Nutrition Surveys, we find that body size has a significant impact on the individual expected medical expenditure and the per capita medical cost attributable to obesity and overweight in a single medical event is estimated to be 6.18 Yuan, or 5.29% of the total personal medical expenditure. This translates to 24.35 billion Yuan annual cost on the national scale, accounting for 2.46% of China's

national health care expenditure. The subsample analyses also show that such cost is higher for the urban, women, and better educated people and increases over time. Our results contribute to the literature on the economic impact of obesity in developing countries and bear policy implications on controlling the rising health care costs in China. Copyright © 2015 John Wiley & Sons, Ltd.

## Did the Millennium Development Goals Change Trends in Child Mortality?

• Health Economics---2016---Declan French

There has been little assessment of the role the Millennium Development Goals (MDGs) have had in progressing international development. There has been a 41% reduction in the under-five mortality rate worldwide from 1990 to 2011 and an acceleration in the rate of reduction since 2000. This paper explores why this has occurred, and results for all developing countries indicate that it is not due to more healthcare or public health interventions but is driven by a coincidental burst of economic growth. Although the MDGs are considered to have played an important part in securing progress against poverty, hunger and disease, there is very little evidence to back this viewpoint up. A thorough analysis of the successes and failures of the MDGs is therefore necessary before embarking on a new round of global goals. Copyright © 2015 John Wiley & Sons, Ltd.

## Physician Payment Contracts in the Presence of Moral Hazard and Adverse Selection: The Theory and Its Application in Ontario

 Health Economics---2016---Jasmin Kantarevic, Boris Kralj

We develop a stylized principal—agent model with moral hazard and adverse selection to provide a unified framework for understanding some of the most salient features of the recent physician payment reform in Ontario and its impact on physician behavior. These features include the following: (i) physicians can choose a payment contract from a menu that includes an enhanced fee-for-service contract and a blended capitation contract; (ii) the capitation rate is higher, and the cost-reimbursement rate is lower in the blended capitation contract; (iii) physicians sort selectively into the contracts based on their preferences; and (iv) physicians in the blended capitation model provide fewer services than physicians in the enhanced fee-for-service model. Copyright © 2015 John Wiley & Sons, Ltd.

#### Does Overweight and Obesity Impact on Self-Rated Health? Evidence Using Instrumental Variables Ordered Probit Models

• Health Economics---2016---John Cullinan, Paddy Gillespie

2016

#### **Editors' Introduction**

• Health Economics---2016---Andrew Jones, Owen O'Donnell, Anthony Scott, Michael Shields

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## Efficiency of Health Investment: Education or Intelligence?

• Health Economics---2016---Govert Bijwaard, Hans Van Kippersluis

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# Does Health Insurance Encourage the Rise in Medical Prices? A Test on Balance Billing in France

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## Heterogeneity in the Effect of Common Shocks on Healthcare Expenditure Growth

• Health Economics---2016---Katharina Hauck,Xiaohui Zhang

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#### fee-for-service contract and a blended capitation con- Folic acid advisories: a public health challenge?

• Health Economics---2016---Daniel Herrera-Araujo, Daniel Herrera-Araujo

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## **Endogenous Technology Adoption and Medical Costs**

• Health Economics---2016---Karine Lamiraud,Stephane Lhuillery

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## Learning to Trust Flu Shots: Quasi-Experimental Evidence from the 2009 Swine Flu Pandemic

• Health Economics---2016---Jürgen Maurer, Katherine M. Harris

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## Risk Selection under Public Health Insurance with Opt-Out

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# The Effect of Introducing a Minimum Price on the Distribution of Alcohol Purchase: A Counterfactual Analysis

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#### Attitudes to legalizing cannabis use

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## Unrelated Future Costs and Unrelated Future Benefits: Reflections on NICE Guide to the Methods of Technology Appraisal

Health Economics---2016---Alec Morton, Amanda
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### The Effects of Parental Health Shocks on Adult Offspring Smoking Behavior and Self-Assessed Health

• Health Economics---2016---Michael Darden,Donna Gilleskie

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# The Impact of Waiting Time on Health Gains from Surgery: Evidence from a National Patient-reported Outcome Dataset

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## Reduction of Working Time: Does It Lead to a Healthy Lifestyle?

• Health Economics---2016---Taehyun Ahn

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#### **Does Commuting Affect Health?**

• Health Economics---2016---Annemarie Künn-Nelen

2016

## The Impact of Hospital Payment Schemes on Healthcare and Mortality: Evidence from Hospital Payment Reforms in OECD Countries

• Health Economics---2016---Parida Wubulihasimu, Werner Brouwer, Pieter Baal

In this study, aggregate-level panel data from 20 Organization for Economic Cooperation and Development countries over three decades (1980-2009) were used to investigate the impact of hospital payment reforms on healthcare output and mortality. Hospital payment schemes were classified as fixed-budget (i.e. not directly based on activities), fee-for-service (FFS) or patient-based payment (PBP) schemes. The data were analysed using a difference-in-difference model that allows for a structural change in outcomes due to payment reform. The results suggest that FFS schemes increase the growth rate of healthcare output, whereas PBP schemes positively affect life expectancy at age 65 years. However, these results should be interpreted with caution, as results are sensitive to model specification. Copyright © 2015 John Wiley & Sons, Ltd.

# Modelling Nonlinearities and Reference Dependence in General Practitioners' Income Preferences

• Health Economics---2016---Jon Helgheim Holte,Peter Sivey,Birgit Abelsen,Jan Abel Olsen

This paper tests for the existence of nonlinearity and reference dependence in income preferences for general practitioners. Confirming the theory of reference dependent utility within the context of a discrete choice experiment, we find that losses loom larger than gains in income for Norwegian general practitioners, i.e. they value losses from their current income level around three times higher than the equivalent gains. Our results are validated by comparison with equivalent contingent valuation values for marginal willingness to pay and marginal willingness to accept compensation for changes in job characteristics. Physicians' income preferences determine the effectiveness of 'pay for performance' and other incentive schemes. Our results may explain the relative ineffectiveness of financial incentive schemes that rely on increasing physicians' incomes. Copyright © 2015 John Wiley & Sons, Ltd.

## Valuing Reductions in Fatal Illness Risks: Implications of Recent Research

• Health Economics---2016---Lisa Robinson, James Hammitt

The value of mortality risk reductions, conventionally expressed as the value per statistical life, is an important determinant of the net benefits of many government policies. US regulators currently rely primarily on studies of fatal injuries, raising questions about whether different values might be appropriate for risks associated with fatal illnesses. Our review suggests that, despite the substantial expansion of the research base in recent years, few US studies of illnessrelated risks meet criteria for quality, and those that do yield similar values to studies of injury-related risks. Given this result, combining the findings of these few studies with the findings of the more robust literature on injury-related risks appears to provide a reasonable range of estimates for application in regulatory analysis. Our review yields estimates ranging from about \$4.2 million to \$13.7 million with a mid-point of \$9.0 million (2013 dollars). Although the studies we identify differ from those that underlie the values currently used by Federal agencies, the resulting estimates are remarkably similar, suggesting that there is substantial consensus emerging on the values applicable to the general US population. Copyright © 2015 John Wiley & Sons, Ltd.

## How Business Cycles Affect the Healthcare Sector: A Cross-country Investigation

• Health Economics---2016---Kathleen Cleeren, Lien Lamey, Jan-Hinrich Meyer, Ko De Ruyter

The long-term relationship between the general economy and healthcare expenditures has been extensively researched, to explain differences in healthcare spending between countries, but the midterm (i.e., business cycle) perspective has been overlooked. This study explores business cycle sensitivity in both public and private parts of the healthcare sector across 32 countries. Responses to the business cycle vary notably, both across spending sources and across countries. Whereas

in some countries, consumers and/or governments cut back, in others, private and/or public healthcare buyers tend to spend more. We also assess long-term consequences of business cycle sensitivity and show that public cost cutting during economic downturns deflates the mortality rates, whereas private cut backs increase the long-term growth in total healthcare expenditures. Finally, multiple factors help explain variability in cyclical sensitivity. Private cost cuts during economic downturns are smaller in countries with a predominantly publicly funded healthcare system and more preventive public activities. Public cut backs during contractions are smaller in countries that rely more on tax-based resources rather than social health insurances. Copyright © 2015 John Wiley & Sons, Ltd.

## Determinants of Regional Variation in Health Expenditures in Germany

• Health Economics---2016---Dirk Göpffarth, Thomas Kopetsch, Hendrik Schmitz

2016

#### A Behavioral Economic Model of Alcohol Advertising and Price

 Health Economics---2016---Henry Saffer, Dhaval Dave, Michael Grossman

This paper presents a new empirical study of the effects of televised alcohol advertising and alcohol price on alcohol consumption. A novel feature of this study is that the empirical work is guided by insights from behavioral economic theory. Unlike the theory used in most prior studies, this theory predicts that restriction on alcohol advertising on TV would be more effective in reducing consumption for individuals with high consumption levels but less effective for individuals with low consumption levels. The estimation work employs data from the National Longitudinal Survey of Youth, and the empirical model is estimated with quantile regressions. The results show that advertising has a small positive effect on consumption and that this effect is relatively larger at high consumption levels. The continuing importance of alcohol taxes is

also supported. Education is employed as a proxy for self-regulation, and the results are consistent with this assumption. The key conclusion is that restrictions on alcohol advertising on TV would have a small negative effect on drinking, and this effect would be larger for heavy drinkers. Copyright © 2015 John Wiley & Sons, Ltd.

## **Does Formal Employment Reduce Informal** Caregiving?

• Health Economics---2016---Daifeng He, Peter McHenry

Using the Survey of Income and Program Participation, we examine the impact of formal employment on informal caregiving. We instrument for individual work hours with state unemployment rates. We find that, among women of prime caregiving ages (40–64 years), working 10% more hours per week reduces the probability of providing informal care by about 2 percentage points. The effects are stronger for more time-intensive caregiving and if care recipients are household members. Our results imply that work-promoting policies have the unintended consequence of reducing informal caregiving in an aging society. Copyright © 2015 John Wiley & Sons, Ltd.

#### **Corrective Taxes and Cigarette Characteristics**

• Health Economics---2016---Paul Calcott, Vladimir Petkov

2016

### **Income Elasticity of Vaccines Spending versus General Healthcare Spending**

A1-• Health Economics---2016---Y. Natalia fonso, Guiru Ding, David Bishai

Using cross-country data on gross domestic product and national expenditure on vaccines, we estimate and compare the income elasticity of vaccine expenditure and general curative healthcare expenditure. This study provides the first evidence on the national income elasticity of vaccination spending. Both fixed in bed due to illness/injury', and 'hospitalization'

and random effects models are applied to data from 84 countries from 2010 to 2011. The income elasticities for healthcare expenditure and vaccine expenditure are 0.844 and 0.336, respectively. Despite vaccines' high cost-effectiveness, the national propensity to spend income on vaccines as income increases lags behind general health care. The low income elasticity of vaccine spending means that relying on economic growth alone will provide an unacceptably slow trajectory to achieving high vaccine coverage levels. Copyright © 2015 John Wiley & Sons, Ltd.

### Medicare Managed Care Spillovers and **Treatment Intensity**

• Health Economics---2016---Kevin Callison

Evidence suggests that the share of Medicare managed care enrollees in a region affects the costs of treating traditional fee-for-service (FFS) Medicare beneficiaries; however, little is known about the mechanisms through which these 'spillover effects' operate. This paper examines the relationship between Medicare managed care penetration and treatment intensity for FFS enrollees hospitalized with a primary diagnosis of AMI. I find that increased Medicare managed care penetration is associated with a reduction in both the costs and the treatment intensity of FFS AMI patients. Specifically, as Medicare managed care penetration increases, FFS AMI patients are less likely to receive surgical reperfusion and mechanical ventilation and to experience an overall reduction in the number of inpatient procedures. Copyright © 2015 John Wiley & Sons, Ltd.

#### Can Households Cope with Health Shocks in Vietnam?

• Health Economics---2016---Sophie Mitra, Michael Palmer, Daniel Mont, Nora Groce

This paper investigates the economic impact of health shocks on working-age adults in Vietnam during 2004–2008, using a fixed effects specification. Health shocks cover disability and morbidity and are measured by 'days unable to carry out regular activity', 'days . Overall, Vietnamese households are able to smooth total non-health expenditures in the short run in the face of a significant rise in out-of-pocket health expenditures. However, this is accomplished through vulnerability-enhancing mechanisms, especially in rural areas, including increased loans and asset sales and decreased education expenditures. Female-headed and rural households are found to be the least able to protect consumption. Results highlight the need to extend and deepen social protection and universal health coverage. © 2015 The Authors. Health Economics published by John Wiley & Sons Ltd.

### Breaking The Link Between Legal Access To Alcohol And Motor Vehicle Accidents: Evidence From New South Wales

 Health Economics---2016---Jason Lindo, Peter Siminski, Oleg Yerokhin

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## Symposium: Efforts to Extend Effective Coverage in Asia

• Health Economics---2016---Owen O'Donnell, Andrew Jones

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## Effects of Price, Information, and Transactions Cost Interventions to Raise Voluntary Enrollment in a Social Health Insurance Scheme: A Randomized Experiment in the Philippines

 Health Economics---2016---Joseph J. Capuno, Aleli D. Kraft, Stella Luz Quimbo, Carlos R. Tan, Adam Wagstaff

2016

# **Encouraging Health Insurance for the Informal Sector: A Cluster Randomized Experiment in Vietnam**

• Health Economics---2016---Adam Wagstaff, Ha Thi Hong Nguyen, Huyen Dao, Sarah Bales

2016

## Impact of Community-based Health Insurance on Access and Financial Protection: Evidence from Three Randomized Control Trials in Rural India

• Health Economics---2016---Wameq Raza, Ellen Poel, Arjun Bedi, Frans Rutten

2016

## Impact of Performance-Based Financing in a Low-Resource Setting: A Decade of Experience in Cambodia

• Health Economics---2016---Ellen Van de Poel, Gabriela Flores, Por Ir, Owen O'Donnell

This paper exploits the geographic expansion of performance-based financing (PBF) in Cambodia over a decade to estimate its effect on the utilization of maternal and child health services. PBF is estimated to raise the proportion of births occurring in incentivized public health facilities by 7.5 percentage points (25%). A substantial part of this effect arises from switching the location of institutional births from private to public facilities; there is no significant impact on deliveries supervised by a skilled birth attendant, nor is there any significant effect on neonatal mortality, antenatal care and vaccination rates. The impact on births in public facilities is much greater if PBF is accompanied by maternity vouchers that cover user fees, but there is no significant effect among the poorest women. Heterogeneous effects across schemes differing in design suggest that maintaining management authority within a health district while giving explicit service targets to facilities is more effective in raising utilization than contracting management to a non-governmental organization while denying it full autonomy and leaving financial penalties vague. Copyright © 2015 John Wiley & Sons, Ltd.

## The Impact of a Pay-for-Performance Scheme on Prescription Quality in Rural China

 Health Economics---2016---Xiaojie Sun,Xiaoyun Liu,Qiang Sun,Winnie Yip,Adam Wagstaff,Qingyue Meng

### **Conflicts of Interest in Medical Technology** Markets: Evidence from Orthopedic Surgery

• Health Economics---2016---Fabrice Smieliauskas

Financial relationships between physicians and industry are vital to biomedical innovation yet create the potential for conflicts of interest in medical practice. I consider an inducement model of the role of financial relationships in health care markets, where consulting payments induce physicians to use more devices of the firms that sponsor them. To test the model, I exploit a policy shock, whereby government monitoring of payments to joint replacement surgeons resulted in declines of over 60% in both total payments and in the number of physicians receiving payments from 2007 to 2008. Using hospital discharge data from three states, I find that the loss of payments leads physicians to switch 7 percentage points of their device utilization from their sponsoring firms' devices to other firms' devices, an effect which is concentrated among surgeons with low switching costs. These results offer support for the inducement model. I also find evidence of an increase in medical productivity following the policy intervention, which suggests conditions under which regulation of financial relationships would be socially beneficial. Copyright © 2015 John Wiley & Sons, Ltd. 2016

## Reference Pricing with Endogenous or **Exogenous Payment Limits: Impacts on Insurer** and Consumer Spending

• Health Economics---2016---Timothy Т. Brown, James C. Robinson

2016

## Free Medicines Thanks to Retirement: Impact of **Coinsurance Exemption on Pharmaceutical Expenditures and Hospitalization Offsets in a** national health service

• Health Economics---2016---Jaume Puig-Junov, Pilar Casado-García-Gómez, David Marín, Pilar Garcia-Gomez

This paper examines the impact of coinsurance exemption for prescription medicines applied to elderly individuals in Spain after retirement. We use a rich administrative dataset that links pharmaceutical consumption and hospital discharge records for the full population aged 58 to 65 years in January 2004 covered by the public insurer in a Spanish region, and we follow them until December 2006. We use a differencein-differences strategy and exploit the eligibility age for Social Security to control for the endogeneity of the retirement decision. Our results show that this uniform exemption increases the consumption of prescription medicines on average by 17.5%, total pharmaceutical expenditure by 25% and the costs borne by the insurer by 60.4%, without evidence of any offset effect in the form of lower short term probability of hospitalization. The impact is concentrated among consumers of medicines for acute and other non-chronic diseases whose previous coinsurance rate was 30% to 40%. Copyright © 2015 John Wiley & Sons, Ltd.

#### Valuation of Child Health-Related Quality of Life in the United States

• Health M. Economics---2016---Benjamin Craig, Wolfgang Greiner, Derek S. Brown, Bryce B. Reeve

### Who Gained Insurance Coverage in 2014, the First Year of Full ACA Implementation?

Economics---2016---Charles • Health Courtemanche, James Marton, Aaron Yelowitz

2016

## **Addressing Missing Data in Patient-Reported Outcome Measures (PROMS): Implications for** the Use of PROMS for Comparing Provider **Performance**

• Health Economics---2016---Manuel Gomes, Nils Gutacker, Chris Bojke, Andrew Street

2016

### **Copayments and Emergency Department Use Among Adult Medicaid Enrollees**

Economics---2016---Lindsay M. • Health Sabik, Sabina Ohri Gandhi

A number of state Medicaid programs have recently proposed or implemented new or increased copayments for nonemergent emergency department (ED) visits. Evidence suggests that copayments generally reduce the level of healthcare utilization, although there is little specific evidence regarding the effectiveness of copayments in reducing nonurgent ED use among Medicaid enrollees or other low-income populations. Encouraging efficient and appropriate use of healthcare services will be of particular importance for Medicaid programs as they expand under the Patient Protection and Affordable Care Act. This analysis uses national data from 2001 to 2009 to examine the effect of copayments on nonurgent ED utilization among nonelderly adult enrollees. We find that visits among Medicaid enrollees in state-years where a copayment is in place are significantly less likely to be for nonurgent reasons. Our findings suggest that copayments may be an effective tool for reducing use of the ED for nonurgent care. Copyright © 2015 John Wiley & Sons, Ltd.

## Lending to Parents and Insuring Children: Is There a Role for Microcredit in Complementing **Health Insurance in Rural China?**

• Health Economics---2016---Jing You

This paper assesses the causal impact on child health of borrowing formal microcredit for Chinese rural households by exploiting a panel dataset (2000 and 2004) in a poor northwest province. Endogenous borrowing is controlled for in a dynamic regression-discontinuity design creating a quasi-experimental environment for causal inferences. There is causal relationship running from formal microcredit to improved child health in the short term, while past borrowing behaviour has no protracted impact on subsequent child health outcomes. Moreover, formal microcredit appears to be a complement to health insurance in improving child 2016

health through two mechanisms—it enhances affordability for out-of-pocket health care expenditure and helps buffer consumption against adverse health shocks and financial risk incurred by current health insurance arrangements. Government efforts in expanding health insurance for rural households would be more likely to achieve its optimal goals of improving child health outcomes if combined with sufficient access to formal microcredit. Copyright © 2015 John Wiley & Sons, Ltd.

#### Has the Swap Influenced Aid Flows in the Health Sector?

• Health Economics---2016---Rohan Sweeney, Duncan Mortimer

The sector wide approach (SWAp) emerged during the 1990s as a mechanism for managing aid from the multiplicity of development partners that operate in the recipient country's health, education or agricultural sectors. Health SWAps aim to give increased control to recipient governments, allowing greater domestic influence over how health aid is allocated and facilitating allocative efficiency gains. This paper assesses whether health SWAps have increased recipient control of health aid via increased general sector-support and have facilitated (re)allocations of health aid across disease areas. Using a uniquely compiled panel data set of countries receiving development assistance for health over the period 1990–2010, we employ fixed effects and dynamic panel models to assess the impact of introducing a health SWAp on levels of general sector-support for health and allocations of health-sector aid across key funding silos (including HIV, 'maternal and child and 'sector-support'). Our results suggest that health SWAps have influenced health-sector aid flows in a manner consistent with increased recipient control and improvements in allocative efficiency. Copyright © 2015 John Wiley & Sons, Ltd.

#### **Soft Budget Constraints in Public Hospitals**

• Health Economics---2016---Donald Wright

## The Effect of Medicare Eligibility on Spousal Insurance Coverage

• Health Economics---2016---Marcus Dillender, Karen Mulligan

2016

## Determinants of US Prescription Drug Utilization using County Level Data

• Health Economics---2016---Thierry Nianogo, Albert Okunade, Demba Fofana, Weiwei Chen

2016

## How do Hospitals Respond to Price Changes? Evidence from Norway

 Health Economics---2016---Jurgita Januleviciute, Jan Erik Askildsen, Oddvar Kaarboe, Luigi Siciliani, Matt Sutton

Many publicly funded health systems use activity-based financing to increase hospital production and efficiency. The aim of this study is to investigate whether price changes for different treatments affect the number of patients treated and the mix of activity provided by hospitals. We exploit the variations in prices created by the changes in the national average treatment cost per diagnosis-related group (DRG) offered to Norwegian hospitals over a period of 5 years (2003–2007). We use the data from Norwegian Patient Register, containing individual-level information on age, gender, type of treatment, diagnosis, number of co-morbidities and the national average treatment costs per DRG. We employ fixed-effect models to examine the changes in the number of patients treated within the DRGs over time. The results suggest that a 10% increase in price leads to about 0.8–1.3% increase in the number of patients treated for DRGs, which are medical (for both emergency and elective patients). In contrast, we find no price effect for DRGs that are surgical (for both emergency and elective patients). Moreover, we find evidence of upcoding. A 10% increase in the ratio of

prices between patients with and without complications increases the proportion of patients coded with complications by 0.3-0.4 percentage points. Copyright © 2015 John Wiley & Sons, Ltd.

## A Note on the Comparative Statics of Pay-for-Performance in Health Care

• Health Economics---2016---Tisamarie B. Sherry

2016

## The Impact of Near-Universal Insurance Coverage on Breast and Cervical Cancer Screening: Evidence from Massachusetts

• Health Economics---2016---Lindsay M. Sabik, Cathy J. Bradley

This paper investigates the effect of expansion to nearuniversal health insurance coverage in Massachusetts on breast and cervical cancer screening. We use data from 2002 to 2010 to compare changes in receipt of mammograms and Pap tests in Massachusetts relative to other New England states. We also consider the effect specifically among low-income women. We find positive effects of Massachusetts health reform on cancer screening, suggesting a 4 to 5% increase in mammograms and 6 to 7% increase in Pap tests annually. Increases in both breast and cervical cancer screening are larger 3 years after the implementation of reform than in the year immediately following, suggesting that there may be an adjustment or learning period. Lowincome women experience greater increases in breast and cervical cancer screening than the overall population; among women with household income less than 250% of the federal poverty level, mammograms increase by approximately 8% and Pap tests by 9%. Overall, Massachusetts health reform appears to have increased breast and cervical cancer screening, particularly among low-income women. Our results suggest that reform was successful in promoting preventive care among targeted populations. Copyright © 2015 John Wiley & Sons, Ltd.

# Measuring Healthcare Providers' Performances Within Managed Competition Using Multidimensional Quality and Cost Indicators

 Health Economics---2016---France R. M. Portrait, Onno Galiën, Bernard van den Berg

Background and objectives: The Dutch healthcare system is in transition towards managed competition. In theory, a system of managed competition involves incentives for quality and efficiency of provided care. This is mainly because health insurers contract on behalf of their clients with healthcare providers on, potentially, quality and costs. The paper develops a strategy to comprehensively analyse available multidimensional data on quality and costs to assess and report on the relative performance of healthcare providers within managed competition. Data and methods: We had access to individual information on 2409 clients of 19 Dutch diabetes care groups on a broad range of (outcome and process related) quality and cost indicators. We carried out a cost-consequences analysis and corrected for differences in case mix to reduce incentives for risk selection by healthcare providers. Results and conclusion: There is substantial heterogeneity between diabetes care groups' performances as measured using multidimensional indicators on quality and costs. Better quality diabetes care can be achieved with lower or higher costs. Routine monitoring using multidimensional data on quality and costs merged at the individual level would allow a systematic and comprehensive analysis of healthcare providers' performances within managed competition. Copyright © 2015 John Wiley & Sons, Ltd.

### Cigarette Taxes and Older Adult Smoking: Evidence from the Health and Retirement Study

• Health Economics---2016---Johanna Maclean, Asia Sikora Kessler, Donald Kenkel

In this study, we use the Health and Retirement Study to test whether older adult smokers, defined as those 50 years and older, respond to cigarette tax increases. Our preferred specifications show that older adult smokers respond modestly to tax increases: a \$1.00

(131.6%) tax increase leads to a 3.8–5.2% reduction in cigarettes smoked per day (implied tax elasticity = 0.03 to 0.04). We identify heterogeneity in tax elasticity across demographic groups as defined by sex, race/ethnicity, education, and marital status and by smoking intensity and level of addictive stock. These findings have implications for public health policy implementation in an aging population. Copyright © 2015 John Wiley & Sons, Ltd.

## The Impact of Hospital Acquisition of Physician Practices on Referral Patterns

 Health Economics---2016---Caroline S. Carlin,Roger Feldman,Bryan Dowd

Multiple parties influence the choice of facility for hospital-based inpatient and outpatient services. The patient is the central figure, but their choice of facility is guided by their physician and influenced by hospital characteristics. This study estimated changes in referral patterns for inpatient admissions and outpatient diagnostic imaging associated with changes in ownership of three multispecialty clinic systems headquartered in Minneapolis-St. Paul, MN. These clinic systems were acquired by two hospital-owned integrated delivery systems (IDSs) in 2007, increasing the probability that hospital preferences influenced physician guidance on facility choice. We used a longitudinal dataset that allowed us to predict changes in referral patterns, controlling for health plan enrollee, coverage, and clinic system characteristics. The results are an important empirical contribution to the literature examining the impact of hospital ownership on location of service. When this change in ownership forged new relationships, there was a significant reduction in the use of facilities historically selected for inpatient admissions and outpatient imaging and an increase in the use of the acquiring IDS's facilities. These changes were weaker in the IDS acquiring two clinic systems, suggesting that management of multiple acquisitions simultaneously may impact the ability of the IDS to build strong referral relationships. Copyright © 2015 John Wiley & Sons, Ltd.

### Access to Emergency Contraception and its Impact on Fertility and Sexual Behavior

• Health Economics---2016---Karen Mulligan

2016

#### Modern Management Practices and Hospital Admissions

• Health Economics---2016---K. John Mc-Connell,Richard Lindrooth,Douglas R. Wholey,Thomas M. Maddox,Nicholas Bloom

We investigate whether the modern management practices and publicly reported performance measures are associated with choice of hospital for patients with acute myocardial infarction (AMI). We define and measure management practices at approximately half of US cardiac care units using a novel survey approach. A patient's choice of a hospital is modeled as a function of the hospital's performance on publicly reported quality measures and the quality of its management. The estimates, based on a grouped conditional logit specification, reveal that higher management scores and better performance on publicly reported quality measures are positively associated with hospital choice. Management practices appear to have a direct correlation with admissions for AMI—potentially through reputational effects—and indirect association, through better performance on publicly reported measures. Overall, a one standard deviation change in management practice scores is associated with an 8% increase in AMI admissions. Copyright © 2015 John Wiley & Sons, Ltd.

## Nothing About Us Without Us? A Comparison of Adolescent and Adult Health-State Values for the Child Health Utility-9D Using Profile Case Best-Worst Scaling

• Health Economics---2016---Julie Ratcliffe, Elisabeth Huynh, Katherine Stevens, John Brazier, Michael Sawyer, Terry Flynn

The main objective of this study was to compare and contrast adolescent and adult values for the Child

Health Utility-9D (CHU9D), a new generic preferencebased measure of health-related quality of life designed for application in the economic evaluation of treatment and preventive programmes for children and adolescents. Previous studies have indicated that there may be systematic differences in adolescent and adult values for identical health states. An online survey including a series of best-worst scaling discrete choice experiment questions for health states defined by the CHU9D was administered to two general population samples comprising adults and adolescents, respectively. The results highlight potentially important age-related differences in the values attached to CHU9D dimensions. Adults, in general, placed less weight upon impairments in mental health (worried, sad, annoyed) and more weight upon moderate to severe levels of pain relative to adolescents. The source of values (adults or adolescents) has important implications for economic evaluation and may impact significantly upon healthcare policy. Copyright © 2015 John Wiley & Sons, Ltd.

## The Relationship Between Self-Rated Health and Hospital Records

• Health Economics---2016---Torben Nielsen

2016

## The Welfare Cost of Homicides in Brazil: Accounting for Heterogeneity in the Willingness to Pay for Mortality Reductions

• Health Economics---2016---Daniel Cerqueira, Rodrigo Soares

ABSTRACT This paper estimates the health dimension of the welfare cost of homicides in Brazil incorporating age, gender, educational, and regional heterogeneities. We use a marginal willingness to pay approach to assign monetary values to the welfare cost of increased mortality due to violence. Results indicate that the present discounted value of the welfare cost of homicides in Brazil corresponds to roughly 78% of the GDP or, in terms of yearly flow, 2.3%. The analysis also shows that reliance on aggregate data to perform

such calculations can lead to biases of around 20% in the estimated social cost of violence. Copyright © 2014 John Wiley & Sons, Ltd.

#### Welfare Reform and Children's Health

• Health Economics---2016---Badi Baltagi, Yin-Fang Yen

This study investigates the effect of the Temporary Aid to Needy Families (TANF) program on children's health outcomes using data from the Survey of Income and Program Participation over the period 1994 to 2005. The TANF policies have been credited with increased employment for single mothers and a dramatic drop in welfare caseload. Our results show that these policies also had a significant effect on various measures of children's medical utilization among low-income families. These health measures include a rating of the child's health status reported by the parents, the number of times that parents consulted a doctor, and the number of nights that the child stayed in a hospital. We compare the overall changes of health status and medical utilization for children with working and nonworking mothers. We find that the child's health status as reported by the parents is affected by the maternal employment status. Copyright © 2014 John Wiley & Sons, Ltd.

# **Crystal Clear? The Relationship Between Methamphetamine Use and Sexually Transmitted Infections**

 Health Economics---2016---Hugo M. Mialon, Erik Nesson, Michael C. Samuel

Public health officials have cited methamphetamine control as a tool with which to decrease HIV and other sexually transmitted infections, based on previous research that finds a strong positive correlation between methamphetamine use and risky sexual behavior. However, the observed correlation may not be causal, as both methamphetamine use and risky sexual behavior could be driven by a third factor, such as a preference for risky behavior. We estimate the effect of methamphetamine use on risky sexual behavior using

monthly data on syphilis diagnoses in California and quarterly data on syphilis, gonorrhea, and chlamydia diagnoses across all states. To circumvent possible endogeneity, we use a large exogenous supply shock in the US methamphetamine market that occurred in May 1995 and a later shock stemming from the Methamphetamine Control Act, which went into effect in October 1997. While the supply shocks had large negative effects on methamphetamine use, we find no evidence that they decreased syphilis, gonorrhea, or chlamydia rates. Our results have broad implications for public policies designed to decrease sexually transmitted infection rates. Copyright © 2014 John Wiley & Sons, Ltd.

## The Causal Effect of Education on Health: What is the Role of Health Behaviors?

 Health Economics---2016---Giorgio Brunello,Margherita Fort,Nicole
 Schneeweis,Rudolf Winter-Ebmer,Rudolf

2016

#### **Psychological Distress and Problem Drinking**

 Health Economics---2016---Emmanouil Mentzakis, Bayard Roberts, Marc Suhrcke, Martin McKee

We examine the influence of harmful alcohol use on mental health using a flexible two-step instrumental variables approach and household survey data from nine countries of the former Soviet Union. Using alcohol advertisements to instrument for alcohol, we show that problem drinking has a large detrimental effect on psychological distress, with problem drinkers exhibiting a 42% increase in the number of mental health problems reported and a 15% higher chance of reporting very poor mental health. Ignoring endogeneity leads to an underestimation of the damaging effect of excessive drinking. Findings suggest that more effective alcohol polices and treatment services in the former Soviet Union may have added benefits in terms of reducing poor mental health. Copyright © 2015 John Wiley & Sons, Ltd.

## Health Insurance, Health Savings Accounts and Healthcare Utilization

• Health Economics---2016---Richard Peter, Sebastian Soika, Petra Steinorth

2016

## THE EFFECT OF STATE INSURANCE MANDATES ON INFANT IMMUNIZATION RATES

• Health Economics---2016---Lenisa V. Chang

While US infant immunization rates have been increasing in the last 20 years, the cost of fully immunizing a child with all recommended vaccines has almost tripled. This is partly not only due to new additions in the list of recommended vaccines but also due to the use of new, safer, but more expensive technologies in vaccine production and distribution. In recent years, many states have mandated that recommended childhood vaccines be covered by private health insurance companies. Currently, there are 33 states with such a mandate. In this paper, I examine whether the introduction of mandates on private insurers affected immunization rates. Using state and time variation, I find that mandates increased the immunization rate for three vaccines—the diphtheria—tetanus—pertussis, polio, and measles-mumps-rubella vaccines—by about 1.8 percentage points. These results may provide a lower bound for the expected effect of the Affordable Care Act, which mandates coverage of childhood vaccines for all private insurers in the USA. I also find evidence that the mandates shifted a significant portion of vaccinations from publicly funded sources to private ones, with a decline in public health clinic visits and an increase in vaccinations at hospitals and doctor's offices. Copyright © 2015 John Wiley & Sons, Ltd.

## Machines that go 'ping': Medical Technology and Health Expenditures in OECD Countries

• Health Economics---2016---Peter Willemé, Michel Dumont

2016

#### Does job insecurity deteriorate health?

• Health Economics---2016---Eve Caroli, Mathilde Godard

2016

## This Ad is for You: Targeting and the Effect of Alcohol Advertising on Youth Drinking

• Health Economics---2016---Eamon Molloy

2016

## Do Health Reforms to Improve Quality Have Long-Term Effects? Results of a Follow-Up on a Randomized Policy Experiment in the Philippines

 Health Economics---2016---Stella Luz Quimbo, Natascha Wagner, Jhiedon Florentino, Orville Solon, John Peabody

We tracked doctors who had previously participated in a randomized policy experiment in the Philippines. The original experiment involved 30 district hospitals divided equally into one control site and two intervention sites that increased insurance payments (full insurance support for children under 5 years old) or made bonus payments to hospital staff. During the 3 years of the intervention, quality—as measured by clinical performance and value vignettes—improved and was sustained in both intervention sites compared with controls. Five years after the interventions were discontinued, we remeasured the quality of care of the doctors. We found that the intervention sites continued to have significantly higher quality compared with the control sites. The previously documented quality improvement in intervention sites appears to be sustained; moreover, it was subject to a very low (less than 1% per year) rate of decay in quality scores. Copyright © 2015 John Wiley & Sons, Ltd.

#### Colorectal Cancer Screening and State Health Insurance Mandates

• Health Economics---2016---Mary K. Hamman, Kandice A. Kapinos

cer in the USA. CRC screening is the most effective way to prevent CRC death, but compliance with recommended screenings is very low. In this study, we investigate whether CRC screening behavior changed under state mandated private insurance coverage of CRC screening in a sample of insured adults from the 1997 to 2008 Behavioral Risk Factor Surveillance Survey (BRFSS). We present difference-in-differencein-differences (DDD) estimates that compare insured individuals age 51 to 64 to Medicare age-eligible individuals (ages 66 to 75) in mandate and non-mandate states over time. Our DDD estimates suggest endoscopic screening among men increased by 2 to 3 percentage points under mandated coverage among 51 to 64 year olds relative to their Medicare age-eligible counterparts. We find no clear evidence of changes in screening behavior among women. DD estimates suggest no evidence of a mandate effect on either type of CRC screening for men or women. Copyright © 2014 John Wiley & Sons, Ltd.

## Adverse and Advantageous Selection in the **Medicare Supplemental Market: A Bayesian Analysis of Prescription drug Expenditure**

• Health Economics---2016---Qian Li, Pravin Trivedi

2016

## **Response Patterns in Health State Valuation Using Endogenous Attribute Attendance and Latent Class Analysis**

• Health Economics---2016---Arne Hole, Richard Norman, Rosalie Vinev

Not accounting for simplifying decision-making heuristics when modelling data from discrete choice experiments has been shown potentially to lead to biased inferences. This study considers two ways of exploring the presence of attribute non-attendance (that is, respondents considering only a subset of the attributes that define the choice options) in a health state valuation discrete choice experiment. The methods used include the latent class (LC) and endogenous attribute

Colorectal cancer (CRC) is the third most deadly can- attendance (EAA) models, which both required adjustment to reflect the structure of the quality-adjusted life year (QALY) framework for valuing health outcomes. We find that explicit consideration of attendance patterns substantially improves model fit. The impact of allowing for non-attendance on the estimated QALY weights is dependent on the assumed source of nonattendance. If non-attendance is interpreted as a form of preference heterogeneity, then the inferences from the LC and EAA models are similar to those from standard models, while if respondents ignore attributes to simplify the choice task, the QALY weights differ from those using the standard approach. Because the cause of non-attendance is unknown in the absence of additional data, a policymaker may use the range of weights implied by the two approaches to conduct a sensitivity analysis. Copyright © 2014 John Wiley & Sons, Ltd.

## **Income Transfers and Maternal Health: Evidence** from a National Randomized Social Cash **Transfer Program in Zambia**

Economics---2016---Sudhanshu • Health Handa, Amber Peterman, David Seidenfeld, Gelson Tembo

There is promising recent evidence that povertytargeted social cash transfers have potential to improve maternal health outcomes; however, questions remain surrounding design features responsible for impacts. In addition, virtually no evidence exists from the African region. This study explores the impact of Zambia's Child Grant Program on a range of maternal health utilization outcomes using a randomized design and difference-in-differences multivariate regression from data collected over 24 months from 2010 to 2012. Results indicate that while there are no measurable program impacts among the main sample, there are heterogeneous impacts on skilled attendance at birth among a sample of women residing in households having better access to maternal health services. The latter result is particularly interesting because of the overall low level of health care availability in program areas suggesting that dedicated program design

or matching supply-side interventions may be necessary to leverage unconditional cash transfers in similar settings to impact maternal health. Copyright © 2015 John Wiley & Sons, Ltd.

## Future Costs, Fixed Healthcare Budgets, and the Decision Rules of Cost-Effectiveness Analysis

• Health Economics---2016---Pieter Baal, David Meltzer, Werner Brouwer

Life-saving medical technologies result in additional demand for health care due to increased life expectancy. However, most economic evaluations do not include all medical costs that may result from this additional demand in health care and include only future costs of related illnesses. Although there has been much debate regarding the question to which extent future costs should be included from a societal perspective, the appropriate role of future medical costs in the widely adopted but more narrow healthcare perspective has been neglected. Using a theoretical model, we demonstrate that optimal decision rules for cost-effectiveness analyses assuming fixed healthcare budgets dictate that future costs of both related and unrelated medical care should be included. Practical relevance of including the costs of future unrelated medical care is illustrated using the example of transcatheter aortic valve implantation. Our findings suggest that guidelines should prescribe inclusion of these costs. Copyright © 2014 John Wiley & Sons, Ltd.

# Should Cost-Effectiveness Analysis Include the Cost of Consumption Activities? AN Empirical Investigation

 Health Economics---2016---Charles Christian Adarkwah, Amirhossein Sadoghi, Afschin Gandjour

There has been a debate on whether cost-effectiveness analysis should consider the cost of consumption and leisure time activities when using the quality-adjusted life year as a measure of health outcome under a societal perspective. The purpose of this study was to investigate whether the effects of ill health on consumptive activities are spontaneously considered in a

health state valuation exercise and how much this matters. The survey enrolled patients with inflammatory bowel disease in Germany (n = 104). Patients were randomized to explicit and no explicit instruction for the consideration of consumption and leisure effects in a time trade-off (TTO) exercise. Explicit instruction to consider non-health-related utility in TTO exercises did not influence TTO scores. However, spontaneous consideration of non-health-related utility in patients without explicit instruction (60% of respondents) led to significantly lower TTO scores. Results suggest an inclusion of consumption costs in the numerator of the cost-effectiveness ratio, at least for those respondents who spontaneously consider non-health-related utility from treatment. Results also suggest that exercises eliciting health valuations from the general public may include a description of the impact of disease on consumptive activities. Copyright © 2015 John Wiley & Sons, Ltd.

## 'A Theory of the Allocation of Time' Turns Fifty: Its Impact on the Field of Health Economics

• Health Economics---2016---Michael Grossman

2016

## The Demand for Cigarettes as Derived from the Demand for Weight Loss: A Theoretical and Empirical Investigation

 Health Economics---2016---John Cawley, Davide Dragone, Stephanie von Hinke

This paper offers an economic model of smoking and body weight and provides new empirical evidence on the extent to which the demand for cigarettes is derived from the demand for weight loss. In the model, smoking causes weight loss in addition to having direct utility benefits and direct health consequences. It predicts that some individuals smoke for weight loss and that the practice is more common among those who consider themselves overweight and those who experience greater disutility from excess weight. We test these hypotheses using nationally representative data in which adolescents are directly asked whether they

smoke to control their weight. We find that, among teenagers who smoke frequently, 46% of girls and 30% of boys are smoking in part to control their weight. As predicted by the model, this practice is significantly more common among those who describe themselves as too fat and among groups that tend to experience greater disutility from obesity. We conclude by discussing the implications of these findings for tax policy; specifically, the demand for cigarettes is less price elastic among those who smoke for weight loss, all else being equal. Public health efforts to reduce smoking initiation and encourage cessation may wish to design campaigns to alter the derived nature of cigarette demand, especially among adolescent girls. Copyright © 2014 John Wiley & Sons, Ltd.

## Dealing With Missing Behavioral Endpoints in Health Promotion Research by Modeling Cognitive Parameters in Cost-Effectiveness Analyses of Behavioral Interventions: A Validation Study

Health Economics---2016---Rilana Prenger, Marcel
 E. Pieterse, Louise M. A. Braakman-Jansen, Talitha L. Feenstra, Eline S. Smit, Ciska Hoving, Hein Vries, Jan-Kees Ommeren, Silvia M. A. A. Evers, Job Palen

Cost-effectiveness analyses (CEAs) of behavioral interventions typically use physical outcome criteria. However, any progress in cognitive antecedents of behavior change may be seen as a beneficial outcome of an intervention. The aim of this study is to explore the feasibility and validity of incorporating cognitive parameters of behavior change in CEAs. The CEA from a randomized controlled trial on smoking cessation was reanalyzed. First, relevant cognitive antecedents of behavior change in this dataset were identified. Then, transition probabilities between combined states of smoking and cognitions at 6 weeks and corresponding 6 months smoking status were obtained from the dataset. These rates were extrapolated to the period from 6 to 12 months in a decision analytic model. Simulated results were compared with the 12 months' observed cost-effectiveness results. Self-efficacy was

the strongest time-varying predictor of smoking cessation. Twelve months' observed CEA results for the multiple tailoring intervention versus usual care showed €3188 had to be paid for each additional quitter versus €10,600 in the simulated model. The simulated CEA showed largely similar but somewhat more conservative results. Using self-efficacy to enhance the estimation of the true behavioral outcome seems a feasible and valid way to estimate future cost-effectiveness. Copyright © 2014 John Wiley & Sons, Ltd.

## Spillover Effects in Health Service Use: Evidence From Mental Health Care Using First-Year College Housing Assignments

 Health Economics---2016---Ezra Golberstein, Daniel Eisenberg, Marilyn F. Downs

Spillover effects in health service use may represent an important externality of individual treatment decisions and are important for understanding the consequences of interventions to improve access to health care. This study is the first to our knowledge to examine causal spillover effects for mental health service use. We exploit the natural experiment of first-year student housing assignments at two universities using survey data that we collected. When the peer group is defined at the roommate level, we do not find any spillover effects on service use. When the peer group is defined at the hall level, we find positive spillover effects peers' service use increases one's own service use—and this effect is driven by individuals with prior experience with mental health services. We also find some evidence that the mechanism behind this effect is improved beliefs about treatment effectiveness. Copyright © 2014 John Wiley & Sons, Ltd.

## Can Payers Use Prices to Improve Quality? Evidence from English Hospitals

• Health Economics---2016---Thomas Allen, Eleonora Fichera, Matt Sutton

In most activity-based financing systems, payers set prices reactively based on historical averages of hospital reported costs. If hospitals respond to prices, payers might set prices proactively to affect the volume of 2016 particular treatments or clinical practice. We evaluate the effects of a unique initiative in England in which the price offered to hospitals for discharging patients on the same day as a particular procedure was increased by 24%, while the price for inpatient treatment remained unchanged. Using national hospital records for 205 784 patients admitted for the incentivised procedure and 838 369 patients admitted for a range of nonincentivised procedures between 1 December 2007 and 31 March 2011, we consider whether this price change had the intended effect and/or produced unintended effects. We find that the price change led to an almost six percentage point increase in the daycase rate and an 11 percentage point increase in the planned daycase rate. Patients benefited from a lower proportion of procedures reverted to open surgery during a planned laparoscopic procedure and from a reduction in long stays. There was no evidence that readmission and death rates were affected. The results suggest that payers can set prices proactively to incentivise hospitals to improve quality. Copyright © 2014 John Wiley & Sons, Ltd.

### **Does Physician Dispensing Increase Drug Expenditures? Empirical Evidence from Switzerland**

• Health Economics---2016---Boris Kaiser, Christian Schmid

2016

### Better Health With More Friends: The Role of Social Capital in Producing Health

• Health Economics---2016---Cheuk Yin Ho

2016

## Will the Needs-Based Planning of Health Human **Resources Currently Undertaken in Several Countries Lead to Excess Supply and** Inefficiency?

Economics---2016---Kisalaya• Health Basu, Maxwell Pak

#### **Decision Thresholds and Changes in Risk for Preventive Treatment**

• Health Economics---2016---Christophe Courbage, Béatrice Rey

2016

## Foreword: Health Economic Evaluations in Lowand Middle-income Countries: Methodological **Issues and Challenges for Priority Setting**

• Health Economics---2016---Catherine Pitt, Anna Vassall.Yot Teerawattananon, Ulla Guinness, Damian fiths,Lorna Walker, Nicola Foster, Kara Hanson

2016

#### Consequences of the Economic Crisis on Health and Health Care Systems

 Health Economics---2016---Pilar García-Gómez, Sergi Jiménez-Martín, Jose Labeaga, Sergi Jimenez-Martin, Pilar Garcia-Gomez

2016

#### **Health Effects of Economic Crises**

• Health Economics---2016---Christopher Ruhm

This analysis summarizes prior research and uses national, US state and county-level data from 1976 to 2013 to examine whether the mortality effects of economic crises differ in kind from those of the more typical fluctuations. The tentative conclusion is that economic crises affect mortality rates (and presumably other measures of health) in the same way as less severe downturns – leading to improvements in physical health. The effects of severe national recessions in the USA appear to have a beneficial effect on mortality that is roughly twice as strong as that predicted by the elevated unemployment rates alone, while the higher predicted rate of suicides during typical periods of economic weakness is approximately offset during severe recessions. No consistent pattern is obtained for more localized economic crises occurring at the state level – some estimates suggest larger protective mortality effects while others indicate offsetting deleterious consequences. Copyright © 2016 John Wiley & Sons, Ltd.

#### **Editorial**

 Health Economics---2016---Andrew Briggs, Rachel Nugent

2016

## **Economic Evaluation in Global Perspective: A Bibliometric Analysis of the Recent Literature**

• Health Economics---2016---Catherine Pitt, Catherine Goodman, Kara Hanson

2016

## Careful in the Crisis? Determinants of Older People's Informal Care Receipt in Crisis-Struck European Countries

• Health Economics---2016---Joan Costa-Font, Martin Karlsson, Henning Øien, Joan Costa-i-Font

2016

## Comparison of Economic Evaluation Methods Across Low-income, Middle-income and High-income Countries: What are the Differences and Why?

• Health Economics---2016---Ulla Kou Griffiths,Rosa Legood,Catherine Pitt

There are marked differences in methods used for undertaking economic evaluations across low-income, middle-income, and high-income countries. We outline the most apparent dissimilarities and reflect on their underlying reasons. We randomly sampled 50 studies from each of three country income groups from a comprehensive database of 2844 economic evaluations published

between January 2012 and May 2014. Data were extracted on ten methodological areas: (i) availability of guidelines; (ii) research questions; (iii) perspective; (iv) cost data collection methods; (v) cost data analysis; (vi) outcome measures; (vii) modelling techniques; (viii) cost-effectiveness thresholds; (ix) uncertainty analysis; and (x) applicability. Comparisons were made across income groups and odds ratios calculated. Contextual heterogeneity rightly drives some of the differences identified. Other differences appear less warranted and may be attributed to variation in government health sector capacity, in health economics research capacity and in expectations of funders, journals and peer reviewers. By highlighting these differences, we seek to start a debate about the underlying reasons why they have occurred and to what extent the differences are conducive for methodological advancements. We suggest a number of specific areas in which researchers working in countries of differing environments could learn from one another. © 2016 The Authors. Health Economics published by John Wiley & Sons Ltd.

## Methodological Issues to Consider When Collecting Data to Estimate Poverty Impact in Economic Evaluations in Low-income and Middle-income Countries

 Health Economics---2016---Sedona Sweeney, Anna Vassall, Nicola Foster, Victoria Simms, Patrick Ilboudo, Godfather Kimaro, Don Mudzengi, Lorna Guinness

Out-of-pocket spending is increasingly recognized as an important barrier to accessing health care, particularly in low-income and middle-income countries (LMICs) where a large portion of health expenditure comes from out-of-pocket payments. Emerging universal health-care policies prioritize reduction of poverty impact such as catastrophic and impoverishing healthcare expenditure. Poverty impact is therefore increasingly evaluated alongside and within economic evaluations to estimate the impact of specific health interventions on poverty. However, data collection for these metrics can be challenging in intervention-based contexts in LMICs because of study design and practical limitations. Using a

set of case studies, this letter identifies methodological challenges in collecting patient cost data in LMIC contexts. These components are presented in a framework to encourage researchers to consider the implications of differing approaches in data collection and to report their approach in a standardized and transparent way. © 2016 The Authors. Health Economics published by John Wiley & Sons Ltd.

## Household Financial Distress and Initial Endowments: Evidence from the 2008 Financial Crisis

• Health Economics---2016---Arna Olafsson

2016

# Using Top-down and Bottom-up Costing Approaches in LMICs: The Case for Using Both to Assess the Incremental Costs of New Technologies at Scale

 Health Economics---2016---Lucy Cunnama, Edina Sinanovic, Lebogang Ramma, Nicola Foster, Leigh Berrie, Wendy Stevens, Sebaka Molapo, Puleng Marokane, Kerrigan McCarthy, Gavin Churchyard, Anna Vassall

Purpose Estimating the incremental costs of scaling-up novel technologies in low-income and middle-income countries is a methodologically challenging and substantial empirical undertaking, in the absence of routine cost data collection. We demonstrate a best practice pragmatic approach to estimate the incremental costs of new technologies in low-income and middle-income countries, using the example of costing the scale-up of Xpert Mycobacterium tuberculosis (MTB)/resistance to riframpicin (RIF) in South Africa. We estimate costs, by applying two distinct approaches of bottomup and top-down costing, together with an assessment of processes and capacity. The unit costs measured using the different methods of bottom-up and topdown costing, respectively, are \$US16.9 and \$US33.5 for Xpert MTB/RIF, and \$US6.3 and \$US8.5 for microscopy. The incremental cost of Xpert MTB/RIF is estimated to be between \$US14.7 and \$US17.7. While

the average cost of Xpert MTB/RIF was higher than previous studies using standard methods, the incremental cost of Xpert MTB/RIF was found to be lower. Costs estimates are highly dependent on the method used, so an approach, which clearly identifies resource-use data collected from a bottom-up or top-down perspective, together with capacity measurement, is recommended as a pragmatic approach to capture true incremental cost where routine cost data are scarce.

## Do Wealth Shocks Affect Health? New Evidence from the Housing Boom

• Health Economics---2016---Eleonora Fichera, John Gathergood

We exploit large exogenous changes in housing wealth to examine the impact of wealth gains and losses on individual health. In UK household, panel data house price increases, which endow owners with greater wealth, lower the likelihood of home owners exhibiting a range of non-chronic health conditions and improve their self-assessed health with no effect on their psychological health. These effects are not transitory and persist over a 10-year period. Using a range of fixed effects models, we provide robust evidence that these results are not biased by reverse causality or omitted factors. For owners' wealth gains affect labour supply and leisure choices indicating that house price increases allow individuals to reduce intensity of work with commensurate health benefits. © 2016 The Authors. Health Economics Published by John Wiley & Sons, Ltd.

## What Determines HIV Prevention Costs at Scale? Evidence from the Avahan Programme in India

 Health Economics---2016---Aurélia Lépine,Sudhashree Chandrashekar,Govindraj Shetty,Peter Vickerman,Janet Bradley,Michel Alary,Stephen Moses,Anna Vassall

Expanding essential health services through nongovernment organisations (NGOs) is a central strategy for achieving universal health coverage in many low-income and middle-income countries. Human immunodeficiency virus (HIV) prevention services for key populations are commonly delivered through NGOs and have been demonstrated to be cost-effective and of substantial global public health importance. However, funding for HIV prevention remains scarce, and there are growing calls internationally to improve the efficiency of HIV prevention programmes as a key strategy to reach global HIV targets. To date, there is limited evidence on the determinants of costs of HIV prevention delivered through NGOs; and thus, policymakers have little guidance in how best to design programmes that are both effective and efficient. We collected economic costs from the Indian Avahan initiative, the largest HIV prevention project conducted globally, during the first 4 years of its implementation. We use a fixed-effect panel estimator and a random-intercept model to investigate the determinants of average cost. We find that programme design choices such as NGO scale, the extent of community involvement, the way in which support is offered to NGOs and how clinical services are organised substantially impact average cost in a grant-based payment setting. © 2016 The Authors. Health Economics published by John Wiley & Sons Ltd.

## The Lasting Health Impact of Leaving School in a Bad Economy: Britons in the 1970s Recession

 Health Economics---2016---Clementine Garrouste, Mathilde Godard

2016

## Outcomes in Economic Evaluations of Public Health Interventions in Low- and Middle-Income Countries: Health, Capabilities and Subjective Wellbeing

• Health Economics---2016---Giulia Greco, Paula Lorgelly, Inthira Yamabhai

Public health programmes tend to be complex and may combine social strategies with aspects of empowerment, capacity building and knowledge across sectors. The nature of the programmes means that some effects are likely to occur outside the healthcare sector; this breadth impacts on the choice of health and non-health outcomes to measure and value in an economic evaluation. Employing conventional outcome measures in evaluations of public health has been questioned. There are concerns that such measures are too narrow, overlook important dimensions of programme effect and, thus, lead to such interventions being undervalued. This issue is of particular importance for low-income and middle-income countries, which face considerable budget constraints, yet deliver a large proportion of health activities within public health programmes. The need to develop outcome measures, which include broader measures of quality of life, has given impetus to the development of a variety of new, holistic approaches, including Sen's capability framework and measures of subjective wellbeing. Despite their promise, these approaches have not yet been widely applied, perhaps because they present significant methodological challenges. This paper outlines the methodological challenges for the identification and measurement of broader outcomes of public health interventions in economic evaluation in low-income and middle-income countries.

#### **BAD TIMES, SLIMMER CHILDREN?**

 Health Economics---2016---Cristina Bellés-Obrero, Sergi Jiménez-Martín, Judit Vall-Castello, Judit Vall Castello, Cristina Bellés-Obrero, Sergi Jimenez-Martin

2016

## Incorporating Demand and Supply Constraints into Economic Evaluations in Low-Income and Middle-Income Countries

 Health Economics---2016---Anna Vassall, Lindsay Mangham-Jefferies, Gabriela B. Gomez, Catherine Pitt, Nicola Foster

Global guidelines for new technologies are based on cost and efficacy data from a limited number of trial locations. Country-level decision makers need to consider whether cost-effectiveness analysis used to inform

global guidelines are sufficient for their situation or whether to use models that adjust cost-effectiveness results taking into account setting-specific epidemiological and cost heterogeneity. However, demand and supply constraints will also impact cost-effectiveness by influencing the standard of care and the use and implementation of any new technology. These constraints may also vary substantially by setting. We present two case studies of economic evaluations of the introduction of new diagnostics for malaria and tuberculosis control. These case studies are used to analyse how the scope of economic evaluations of each technology expanded to account for and then address demand and supply constraints over time. We use these case studies to inform a conceptual framework that can be used to explore the characteristics of intervention complexity and the influence of demand and supply constraints. Finally, we describe a number of feasible steps that researchers who wish to apply our framework in cost-effectiveness analyses.

## Health Effects of Short-Term Fluctuations in Macroeconomic Conditions: The Case of Hypertension for Older Americans

• Health Economics---2016---Marco Angrisani, Jinkook Lee

We investigate the health effects of short-term macroeconomic fluctuations as described by changes in unemployment rate, house, and stock market price indexes. The 'Great Recession' provides the opportunity to conduct this analysis as it involved contemporaneous shocks to the labor, housing, and stock markets. Using panel data from the Health and Retirement Study over the period 2004–2010, we relate changes in hypertension status to changes in state-level unemployment rate and house prices and to changes in stock market prices. We consider hypertension, a disease related to stress and of high prevalence among older adults, that has received little attention in the literature linking macroeconomic conditions to individual health. Our analysis exploits self-reports of hypertension diagnosis as well as directly measured blood pressure readings. Using both measures, we find that the likelihood of de-

veloping hypertension is negatively related to changes in house prices. Also, decreasing house prices lower the probability of stopping hypertension medication treatment for individuals previously diagnosed with the condition. We do not observe significant associations between hypertension and either changes in unemployment rate or stock market prices. We document heterogeneity in the estimated health effects of the recession by gender, education, asset ownership, and work status. Copyright © 2016 John Wiley & Sons, Ltd.

## Parameterising User Uptake in Economic Evaluations: The role of discrete choice experiments

• Health Economics---2016---Fern Terris-Prestholt, Matthew Quaife, Peter Vickerman

Model-based economic evaluations of new interventions have shown that user behaviour (uptake) is a critical driver of overall impact achieved. However, early economic evaluations, prior to introduction, often rely on assumed levels of uptake based on expert opinion or uptake of similar interventions. In addition to the likely uncertainty surrounding these uptake assumptions, they also do not allow for uptake to be a function of product, intervention, or user characteristics. This letter proposes using uptake projections from discrete choice experiments (DCE) to better parameterize uptake and substitution in cost-effectiveness models. A simple impact model is developed and illustrated using an example from the HIV prevention field in South Africa. Comparison between the conventional approach and the DCE-based approach shows that, in our example, DCE-based impact predictions varied by up to 50% from conventional estimates and provided far more nuanced projections. In the absence of observed uptake data and to model the effect of variations in intervention characteristics, DCE-based uptake predictions are likely to greatly improve models parameterizing uptake solely based on expert opinion. This is particularly important for global and national level decision making around introducing new and probably more expensive interventions, particularly where resources are most

constrained.

# Dynamic Transmission Economic Evaluation of Infectious Disease Interventions in Low- and Middle-Income Countries: A Systematic Literature Review

 Health Economics---2016---Tom L. Drake, Angela Devine, Shunmay Yeung, Nicholas P. J. Day, Lisa J. White, Yoel Lubell

2016

## The Effect on Mental Health of Retiring During the Economic Crisis

 Health Economics---2016---Michele Belloni, Elena Meschi, Giacomo Pasini

This paper investigates the causal impact of retirement on late-life mental health, a growing concern for public health, because major depressive disorders are the second leading cause of disability. We shed light on the role of economic conditions in shaping the effect of retirement on mental health by exploiting time and regional variation in the severity of the economic crisis across 10 European countries during 2004–2013. We use data from four waves of the Survey of Health, Ageing and Retirement in Europe and address the potential endogeneity of the retirement decision to mental health by applying a fixed-effects instrumental variables approach. The results indicate that retirement improves the mental health of men but not that of women. This effect is stronger for blue-collar men working in regions that have been severely hit by the economic crisis. These findings may be explained by the worsening of working conditions and the rise in job insecurity stemming from the economic downturn: under these circumstances, exit from the labour force is perceived as a relief. Copyright © 2016 John Wiley & Sons, Ltd.

# Using Economic Evidence to Set Healthcare Priorities in Low-Income and Lower-Middle-Income Countries: A Systematic Review of Methodological Frameworks

 Health Economics---2016---Virginia Wiseman, Craig Mitton, Mary M. Doyle-Waters, Tom Drake, Lesong Conteh, Anthony T. Newall, Obinna Onwujekwe, Stephen Jan

Policy makers in low-income and lower-middle-income countries (LMICs) are increasingly looking to develop 'evidence-based' frameworks for identifying priority health interventions. This paper synthesises and appraises the literature on methodological frameworks – which incorporate economic evaluation evidence – for the purpose of setting healthcare priorities in LMICs. A systematic search of Embase, MEDLINE, Econlit and PubMed identified 3968 articles with a further 21 articles identified through manual searching. A total of 36 papers were eligible for inclusion. These covered a wide range of health interventions with only two studies including health systems strengthening interventions related to financing, governance and human resources. A little under half of the studies (39%) included multiple criteria for priority setting, most commonly equity, feasibility and disease severity. Most studies (91%) specified a measure of 'efficiency' defined as cost per disability-adjusted life year averted. Ranking of health interventions using multi-criteria decision analysis and generalised cost-effectiveness were the most common frameworks for identifying priority health interventions. Approximately a third of studies discussed the affordability of priority interventions. Only one study identified priority areas for the release or redeployment of resources. The paper concludes by highlighting the need for local capacity to conduct evaluations (including economic analysis) and empowerment of local decision-makers to act on this evidence.

## Health Disparities by Income in Spain Before and After the Economic Crisis

• Health Economics---2016---Max Coveney,Pilar García-Gómez,Eddy Van Doorslaer,Tom Van

#### Ourti, Pilar Garcia-Gomez

Little is known about how health disparities by income change during times of economic crisis. We apply a decomposition method to unravel the contributions of income growth, income inequality and differential income mobility across socio-demographic groups to changes in health disparities by income in Spain using longitudinal data from the Survey of Income and Living Conditions for the period 2004–2012. We find a modest rise in health inequality by income in Spain in the 5 years of economic growth prior to the start of the crisis in 2008, but a sharp fall after 2008. The drop mainly derives from the fact that loss of employment and earnings has disproportionately affected the incomes of the younger and healthier groups rather than the (mainly stable pension) incomes of the groups over 65 years. This suggests that unequal distribution of income protection by age may reduce health inequality in the short run after an economic recession. Copyright © 2016 John Wiley & Sons, Ltd.

## Interactions between Private Health and Long-term Care Insurance and the Effects of the Crisis: Evidence for Spain

• Health Economics---2016---Sergi Jiménez-Martín, Jose Labeaga, Cristina Vilaplana-Prieto, Sergi Jimenez-Martin

This paper analyzes the reasons for the scarce development of the private long-term care insurance market in Spain, and its relationship with health insurance. We are also interested in the effects the crisis has had both on the evolution of the demand for long-term care insurance and on the existence of regional disparities. We estimate bivariate probit models with endogenous variables using Spanish data from the Survey on Health and Retirement in Europe. Our results confirm that individuals wishing to purchase long-term care insurance are, in a sense, forced to subscribe a health insurance policy. In spite of this restriction in the supply of long-term care insurance contracts, we find its demand has grown in recent years, which we attribute to the budget cuts affecting the implementation of Spain's

System of Autonomy and Attention to Dependent People. Regional differences in its implementation, as well as the varying effects the crisis has had across Spanish regions, lead to the existence of a crowding-in effect in the demand for long-term care insurance in those regions where co-payment is based on income and wealth, those that have a lower percentage of public long-term care beneficiaries, or those with a smaller share of cash benefits over total public benefits. Copyright © 2016 John Wiley & Sons, Ltd.

## Development of a Health Screening Package Under the Universal Health Coverage: The Role of Health Technology Assessment

 Health Economics---2016---Yot Teerawattananon, Pritaporn Kingkaew, Tanunya Koopitakkajorn, Sitaporn Youngkong, Nattha Tritasavit, Patsri Srisuwan, Sripen Tantivess

2016

## HTA Implementation Roadmap in Central and Eastern European Countries

 Health Economics---2016---Zoltán Kaló, Adrian Gheorghe, Mirjana Huic, Marcell Csanádi, Finn Boerlum Kristensen

The opportunity cost of inappropriate health policy decisions is greater in Central and Eastern European (CEE) compared with Western European (WE) countries because of poorer population health and more limited healthcare resources. Application of health technology assessment (HTA) prior to healthcare financing decisions can improve the allocative efficiency of scarce resources. However, few CEE countries have a clear roadmap for HTA implementation. Examples from high-income countries may not be directly relevant, as CEE countries cannot allocate so much financial and human resources for substantiating policy decisions with evidence. Our objective was to describe the main HTA implementation scenarios in CEE countries and summarize the most important questions related to capacity building, financing HTA research, process

and organizational structure for HTA, standardization of HTA methodology, use of local data, scope of mandatory HTA, decision criteria, and international collaboration in HTA. Although HTA implementation strategies from the region can be relevant examples for other CEE countries with similar cultural environment and economic status, HTA roadmaps are not still fully transferable without taking into account country-specific aspects, such as country size, gross domestic product per capita, major social values, public health priorities, and fragmentation of healthcare financing. Copyright © 2016 John Wiley & Sons, Ltd.

# The Effect of Leisure-Time Physical Activity on Obesity, Diabetes, High BP and Heart Disease Among Canadians: Evidence from 2000/2001 to 2005/2006

 Health Economics---2015---Sisira Sarma, Rose Anne Devlin, Jason Gilliland, M. Karen Campbell, Gregory S. Zaric

Although studies have looked at the effect of physical activity on obesity and other health outcomes, the causal nature of this relationship remains unclear. We fill this gap by investigating the impact of leisure-time physical activity (LTPA) and work-related physical activity (WRPA) on obesity and chronic conditions in Canadians aged 18–75 using instrumental variable and recursive bivariate probit approaches. Average local temperatures surrounding the respondents' interview month are used as a novel instrument to help identify the causal relationship between LTPA and health outcomes. We find that an active level of LTPA (i.e. walking ≥1 h/day) reduces the probability of obesity by five percentage points, which increases to 11 percentage points if also combined with some WRPA. WRPA exhibits a negative effect on the probability of obesity and chronic conditions. Copyright © 2014 John Wiley & Sons, Ltd.

# What Happens to Patterns of Food Consumption when Food Prices Change? Evidence from A Systematic Review and Meta-Analysis of Food Price Elasticities Globally

 Health Economics---2015---Laura Cornelsen,Rosemary Green,Rachel Turner,Alan
 D. Dangour,Bhavani Shankar,Mario Mazzocchi,Richard D. Smith

Recent years have seen considerable interest in examining the impact of food prices on food consumption and subsequent health consequences. Fiscal policies targeting the relative price of unhealthy foods are frequently put forward as ways to address the obesity epidemic. Conversely, various food subsidy interventions are used in attempts to reduce levels of undernutrition. Information on price elasticities is essential for understanding how such changes in food prices affect food consumption. It is crucial to know not only own-price elasticities but also cross-price elasticities, as food substitution patterns may have significant implications for policy recommendations. While own-price elasticities are common in analyses of the impact of food price changes on health, cross-price effects, even though generally acknowledged, are much less frequently included in analyses, especially in the public health literature. This article systematically reviews the global evidence on cross-price elasticities and provides combined estimates for seven food groups in low-income, middle-income and high-income countries alongside previously estimated own-price elasticities. Changes in food prices had the largest own-price effects in low-income countries. Cross-price effects were more varied and depending on country income level were found to be reinforcing, undermining or alleviating own-price effects. Copyright © 2014 John Wiley & Sons, Ltd.

## **Does Presumed Consent Save Lives? Evidence from Europe**

• Health Economics---2015---Zeynep Burcu Ugur

One policy tool that could affect organ donation rates is legislative defaults. In this study, we examine how presumed consent impacts cadaveric donations and kidney transplantations, using a panel dataset from the EU-27 countries plus Croatia in the period 2000–2010. We find that presumed consent countries have 28% to 32% higher cadaveric donation and 27% to 31% higher kidney transplant rates in comparison to informed consent countries, after accounting for potential confounding factors. After studying willingness to donate one's organs and registering preferences for organ donation, we find that presumed consent could increase cadaveric donation rates, because people fail to register their preferences and many have no preference for organ donation. Copyright © 2014 John Wiley & Sons, Ltd.

# Estimating Lifetime Costs of Social Care: A Bayesian Approach Using Linked Administrative Datasets from Three Geographical Areas

• Health Economics---2015---Adam Steventon, Adam Roberts

We estimated lifetime costs of publicly funded social care, covering services such as residential and nursing care homes, domiciliary care and meals. Like previous studies, we constructed microsimulation models. However, our transition probabilities were estimated from longitudinal, linked administrative health and social care datasets, rather than from survey data. Administrative data were obtained from three geographical areas of England, and we estimated transition probabilities in each of these sites flexibly using Bayesian methods. This allowed us to quantify regional variation as well as the impact of structural and parameter uncertainty regarding the transition probabilities. Expected lifetime costs at age 65 were £20,200–27,000 for men and £38,700-49,000 for women, depending on which of the three areas was used to calibrate the model. Thus, patterns of social care spending differed markedly between areas, with mean costs varying by almost £10,000 (25%) across the lifetime for people of the same age and gender. Allowing for structural and parameter uncertainty had little impact on expected lifetime costs, but slightly increased the risk of very high costs, which will have implications for insurance products for social care through increasing

requirements for capital reserves. Copyright © 2014 John Wiley & Sons, Ltd.

## Putting the Patient in Patient Reported Outcomes: A Robust Methodology for Health Outcomes Assessment

• Health Economics---2015---Ian McCarthy

2015

## Trends in Managed Care Cost Containment: An Analysis of the Managed Care Backlash

• Health Economics---2015---Jerome Dugan

2015

## Consumer Health Information and the Demand for Physician Visits

• Health Economics---2015---Christian Schmid

2015

# On Medical Progress and Health Care Demand: A Ces Perspective Using the Grossman Model of Health Status

• Health Economics---2015---Alberto Batinti

I propose an application of the pure-consumption version of the Grossman model of health care demand, where utility depends on consumption and health status and health status on medical care and health technology. I derive the conditions under which an improvement in health care technology leads to an increase/decrease in health care consumption. In particular, I show how the direction of the effect depends on the relationship between the constant elasticity of substitution parameters of the utility and health production functions. I find that, under the constancy assumption, the ratio of the two elasticity of substitution parameters determines the direction of a technological change on health care demand. On the other hand, the technology share parameter in the health production function contributes to the size but not to the direction of the technological effect. I finally explore how the

ratio of the elasticity of substitution parameters work little evidence that the campaign curbed meth use in in measurement and practice and discuss how future research may use the theoretical insight provided here. Copyright © 2014 John Wiley & Sons, Ltd.

#### Multidimensional Poverty and Health Status as a **Predictor of Chronic Income Poverty**

• Health Economics---2015---Emily J. Callander, Deborah J. Schofield

Longitudinal analysis of Wave 5 to 10 of the nationally representative Household, Income and Labour Dynamics in Australia dataset was undertaken to assess whether multidimensional poverty status can predict chronic income poverty. Of those who were multidimensionally poor (low income plus poor health or poor health and insufficient education attainment) in 2007, and those who were in income poverty only (no other forms of disadvantage) in 2007, a greater proportion of those in multidimensional poverty continued to be in income poverty for the subsequent 5 years through to 2012. People who were multidimensionally poor in 2007 had 2.17 times the odds of being in income poverty each year through to 2012 than those who were in income poverty only in 2005 (95% CI: 1.23-3.83). Multidimensional poverty measures are a useful tool for policymakers to identify target populations for policies aiming to improve equity and reduce chronic disadvantage. Copyright © 2014 John Wiley & Sons, Ltd.

## The Meth Project and Teen Meth Use: New **Estimates from the National and State Youth Risk Behavior Surveys**

• Health Economics---2015---D. Mark son, David Elsea

In this note, we use data from the national and state Youth Risk Behavior Surveys for the period 1999 through 2011 to estimate the relationship between the Meth Project, an anti-methamphetamine advertising campaign, and meth use among high school students. During this period, a total of eight states adopted anti-meth advertising campaigns. After accounting for pre-existing downward trends in meth use, we find

the full sample. We do find, however, some evidence that the Meth Project may have decreased meth use among White high school students. Copyright © 2014 John Wiley & Sons, Ltd.

## Reconciling Estimates of the Value to Firms of Reduced Regulatory Delay in the Marketing of **Their New Drugs**

• Health Economics---2015---Daniel R. Wilmoth

2015

#### Preventing Malaria among Children in Zambia: The Role of Mother's Knowledge

• Health Economics---2015---Yuriy Pylypchuk, Samuel W. Norton

Malaria remains a devastating disease in Zambia, responsible for about 13% of deaths among children under age 5. Lack of malaria-specific knowledge has been commonly assumed to be an important barrier to engagement in behaviors that prevent malaria. To the best of our knowledge, this is the first study that accounts for the endogeneity of maternal knowledge in household's ownership of insecticide-treated nets (ITN), child's use of ITN, and household's protection against mosquitos (HSP). We account for the endogeneity of maternal knowledge through discrete factor and standard instrumental variable estimators. We find significant causal effects of maternal knowledge on the child's use of ITN and HSP but no significant effect on ownership of ITN. The causal effects of maternal knowledge on the use of ITN and HSP are strikingly larger in magnitude than the effects in the reduced form models. Copyright © 2014 John Wiley & Sons, Ltd.

### Too Much of a Good Thing? Exploring the Impact of Wealth on Weight

• Health Economics---2015---Nicole Au, David Johnston, Nicole Black

Obesity, like many health conditions, is more prevalent among the socioeconomically disadvantaged. In our data, very poor women are three times more likely to be obese and five times more likely to be severely obese than rich women. Despite this strong correlation, it remains unclear whether higher wealth causes lower obesity. In this paper, we use nationally representative panel data and exogenous wealth shocks (primarily inheritances and lottery wins) to shed light on this issue. Our estimates show that wealth improvements increase weight for women, but not men. This effect differs by initial wealth and weight—an average-sized wealth shock received by initially poor and obese women is estimated to increase weight by almost 10 lb. Importantly, for some females, the effects appear permanent. We also find that a change in diet is the most likely explanation for the weight gain. Overall, the results suggest that additional wealth may exacerbate rather than alleviate weight problems. Copyright © 2014 John Wiley & Sons, Ltd.

## Strategic Provider Behavior Under Global Budget Payment with Price Adjustment in Taiwan

• Health Economics---2015---Bradley Chen, Victoria Fan

Global budget payment is one of the most effective strategies for cost containment, but its impacts on provider behavior have not been explored in detail. This study examines the theoretical and empirical role of global budget payment on provider behavior. The study proposes that global budget payment with price adjustment is a form of common-pool resources. A two-product game theoretic model is derived, and simulations demonstrate that hospitals are expected to expand service volumes, with an emphasis on products with higher price—marginal cost ratios. Next, the study examines the early effects of Taiwan's global budget payment system using a difference-in-difference strategy and finds that Taiwanese hospitals exhibited such behavior, where the pursuit of individual interests led to an increase in treatment intensities. Furthermore, hospitals significantly increased inpatient service volume for regional hospitals and medical centers. In

contrast, local hospitals, particularly for those without teaching status designation, faced a negative impact on service volume, as larger hospitals were better positioned to induce demand and pulled volume away from their smaller counterparts through more profitable services and products such as radiology and pharmaceuticals. Copyright © 2014 John Wiley & Sons, Ltd.

### Public Reporting and Demand Rationing: Evidence from the Nursing Home Industry

 Health Economics---2015---Daifeng He,R. Tamara Konetzka

This paper examines an under-explored unintended consequence of public reporting: the potential for demand rationing. Public reporting, although intended to increase consumer access to high-quality products, may have provided the perverse incentive for high-quality providers facing fixed capacity and administrative pricing to avoid less profitable types of residents. Using data from the nursing home industry before and after the implementation of the public reporting system in 2002, we find that high-quality nursing homes facing capacity constraints reduced admissions of less profitable Medicaid residents while increasing the more profitable Medicare and private-pay admissions, relative to lowquality nursing homes facing no capacity constraints. These effects, although small in magnitude, are consistent with provider rationing of demand on the basis of profitability and underscore the important role of institutional details in designing effective public reporting systems for regulated industries. Copyright © 2014 John Wiley & Sons, Ltd.

## Effects of a Driver Cellphone Ban on Overall, Handheld, and Hands-Free Cellphone Use While Driving: New Evidence from Canada

Health Economics---2015---Christopher S. Carpenter, Hai V. Nguyen

We provide new evidence on the effects of increasingly common driver cellphone bans on self-reported overall, handheld, and hands-free cellphone use while driving by studying Ontario, Canada, which instituted a 3-month education campaign in November 2009 followed by a binding driver cellphone ban in February 2010. Using residents of Alberta as a control group in a difference-in-differences framework, we find visual and regression-based evidence that Ontario's cellphone ban significantly reduced overall and handheld cellphone use. We also find that the policies significantly increased hands-free cellphone use. The reductions in overall and handheld use are driven exclusively by women, whereas the increases in hands-free use are much larger for men. Our results provide the first direct evidence that cellphone bans have the unintended effect of inducing substitution to hands-free devices. Copyright © 2014 John Wiley & Sons, Ltd.

## Valuing Trial Designs from a Pharmaceutical Perspective Using Value-Based Pricing

• Health Economics---2015---Penny Breeze, Alan Brennan

Our aim was to adapt the traditional framework for expected net benefit of sampling (ENBS) to be more compatible with drug development trials from the pharmaceutical perspective. We modify the traditional framework for conducting ENBS and assume that the price of the drug is conditional on the trial outcomes. We use a value-based pricing (VBP) criterion to determine price conditional on trial data using Bayesian updating of cost-effectiveness (CE) model parameters. We assume that there is a threshold price below which the company would not market the new intervention. We present a case study in which a phase III trial sample size and trial duration are varied. For each trial design, we sampled 10 000 trial outcomes and estimated VBP using a CE model. The expected commercial net benefit is calculated as the expected profits minus the trial costs. A clinical trial with shorter follow-up, and larger sample size, generated the greatest expected commercial net benefit. Increasing the duration of follow-up had a modest impact on profit forecasts. Expected net benefit of sampling can be adapted to value clinical trials in the pharmaceutical industry to optimise the expected commercial net bene-

driving by studying Ontario, Canada, which instituted fit. However, the analyses can be very time consuming a 3-month education campaign in November 2009 followed by a binding driver cellphone ban in February Economics published by John Wiley & Sons Ltd.

## Distance to Cannabis Shops and Age of Onset of Cannabis Use

• Health Economics---2015---Ali Palali, Jan C. Ours

2015

## The Impact of Smoking Bans on Smoking and Consumer Behavior: Quasi-Experimental Evidence from Switzerland

 Health Economics---2015---Stefan Boes, Joachim Marti, Johanna Maclean

In this paper, we exploit the progressive implementation of smoking bans in public venues at the state level in Switzerland to evaluate both the direct effects on smoking and the potential unintended consequences of these legislations on consumer behaviors as measured by visiting restaurants/bars and discos ( 'going out' ). Our results indicate that public venue smoking bans in Switzerland reduce smoking rates, but the findings do not emerge until 1 year following the ban. This pattern of results is consistent with delays in ban enforcement on the part of business owners, difficulties in changing addictive behaviors such as smoking, and/or learning on the part of smokers. We find evidence that smoking bans influence going-out behavior and there is substantial heterogeneity across venue and consumer characteristics. Copyright © 2014 John Wiley & Sons, Ltd.

## Generalized Nutrient Taxes Can Increase Consumer Welfare

• Health Economics---2015---David Bishai

Certain nutrients can stimulate appetite making them fattening in a way that is not fully conveyed by the calorie content on the label. For rational eaters, this information gap could be corrected by more labeling. As an alternative, this paper proposes a set of positive

and negative taxes on the fattening and slimming nu- 2015 trients in food rather than on the food itself. There are conditions under which this tax plus subsidy system could increase welfare by stopping unwanted weight gain while leaving the final retail price of food unchanged. A nutrient tax system could improve welfare if fattening nutrients, net of their effect on weight, are inferior goods and the fiscal cost of administering the tax is sufficiently low. More data on the price elasticity of demand for nutrients as well as data on how specific nutrients affect satiety and how total calorie intake would be necessary before one could be sure a nutrient tax would work in practice. Copyright © 2014 John Wiley & Sons, Ltd.

## Individual Income, Area Deprivation, and Health: Do Income-Related Health Inequalities Vary by **Small Area Deprivation?**

• Health Economics---2015---Martin Siegel, Andreas Mielck.Werner Maier

2015

### Inequality of Opportunity: The New Motherhood and Apple Pie?

• Health Economics---2015---Adam Wagstaff, Ravi Kanbur

2015

#### Rowing against the current

• Health Economics---2015---Pedro Rosa Dias

2015

#### **Equality of Opportunity, A Flexible Framework**

• Health Economics---2015---Erik Schokkaert

2015

#### Inequality of Opportunity: Reply to Pedro Rosa Dias and Erik Schokkaert

• Health Economics---2015---Ravi Kanbur, Adam Wagstaff

#### The Influence of Cost-Effectiveness and Other **Factors on Nice Decisions**

• Health Economics---2015---Helen Dakin, Nancy Devlin, Yan Feng, Nigel Rice, Phill O'Neill, David Parkin

The National Institute for Health and Care Excellence (NICE) emphasises that cost-effectiveness is not the only consideration in health technology appraisal and is increasingly explicit about other factors considered relevant but not the weight attached to each. The objective of this study is to investigate the influence of cost-effectiveness and other factors on NICE decisions and whether NICE's decision-making has changed over time. We model NICE's decisions as binary choices for or against a health care technology in a specific patient group. Independent variables comprised of the following: clinical and economic evidence; characteristics of patients, disease or treatment; and contextual factors potentially affecting decision-making. Data on all NICE decisions published by December 2011 were obtained from HTAinSite [ www.htainsite.com ]. Cost-effectiveness alone correctly predicted 82% of decisions; few other variables were significant and alternative model specifications had similar performance. There was no evidence that the threshold has changed significantly over time. The model with highest prediction accuracy suggested that technologies costing £40 000 per quality-adjusted life-year (QALY) have a 50% chance of NICE rejection (75% at £52 000/QALY; 25% at £27 000/QALY). Past NICE decisions appear to have been based on a higher threshold than £20 000-£30 000/QALY. However, this may reflect consideration of other factors that cannot be easily quantified. © 2014 The Authors. Health Economics published by John Wiley & Sons Ltd.

#### Get a Life? The Impact of the European Working **Time Directive: The Case of UK Senior Doctors**

• Health Economics---2015---Peter Dolton, Michael P Kidd, Jonas Fooken

ABSTRACT This paper seeks to identify the effect of Self-Employment and Health: Barriers or the implementation of the European Working Time Directive on the working hours of UK doctors. The Labour Force Survey is used to compare the working hours of doctors with a variety of control groups before and after the implementation of the directive. The controls include those unconstrained by the directive and doctor counterparts working in Europe. We use differences-in-differences and matching methods to estimate the impact of this natural experiment, distinguishing between the anticipation and enactment of the European Working Time Directive. We find that the legislation reduced the hours of senior doctors by around 8 hours in total including the component attributable to anticipation effects and allowing for (exogenously set) rising wages. Copyright © 2014 John Wiley & Sons, Ltd.

### The Willingness to Pay for a Quality Adjusted Life Year: A Review of the Empirical Literature

• Health Economics---2015---Linda Ryen, Mikael Svensson

There has been a rapid increase in the use of costeffectiveness analysis, with quality adjusted life years (QALYs) as an outcome measure, in evaluating both medical technologies and public health interventions. Alongside, there is a growing literature on the monetary value of a QALY based on estimates of the willingness to pay (WTP). This paper conducts a review of the literature on the WTP for a QALY. In total, 24 studies containing 383 unique estimates of the WTP for a QALY are identified. Trimmed mean and median estimates amount to 74,159 and 24,226 Euros (2010 price level), respectively. In regression analyses, the results indicate that the WTP for a QALY is significantly higher if the QALY gain comes from life extension rather than quality of life improvements. The results also show that the WTP for a QALY is dependent on the size of the QALY gain valued. Copyright © 2014 John Wiley & Sons, Ltd.

## Benefits?

• Health Economics---2015---Cornelius A. etveld, Hans Kippersluis, Roy Thurik

The self-employed are often reported to be healthier than wageworkers; however, the cause of this health difference is largely unknown. The longitudinal nature of the US Health and Retirement Study allows us to gauge the plausibility of two competing explanations for this difference: a contextual effect of self-employment on health (benefit effect), or a health-related selection of individuals into self-employment (barrier effect). Our main finding is that the selection of comparatively healthier individuals into self-employment accounts for the positive cross-sectional difference. The results rule out a positive contextual effect of self-employment on health, and we present tentative evidence that, if anything, engaging in self-employment is bad for one's health. Given the importance of the self-employed in the economy, these findings contribute to our understanding of the vitality of the labor force. Copyright © 2014 John Wiley & Sons, Ltd.

## **How Do Smokers Respond to Cigarette Taxes? Evidence from China's Cigarette Industry**

• Health Economics---2015---Hong Liu, John Rizzo,Qi Sun,Fang Wu

This paper examines how Chinese smokers respond to tax-driven cigarette price increases by estimating a discrete choice model of demand for differentiated products, using annual nationwide brand-level cigarette sales data in China from 2005 to 2010. We allow for substitution between different cigarette brands and also incorporate key features of rational addiction theory into the model. Results show that the average own-price elasticity of demand for cigarettes at the brand level is -0.807, and the overall price elasticity of cigarettes at the market level is -0.488 in China. We find taxinduced substitution toward low-price cigarettes as well as high-tar cigarettes and that tax hikes encourage within-class substitution more than across-class

substitution. These results have important policy im- The Sheffield Alcohol Policy Model - A plications for the potential effects of cigarette taxation. Mathematical Description Copyright © 2014 John Wiley & Sons, Ltd.

#### Who Opts out of the Statutory Health Insurance? A Discrete Time Hazard Model for Germany

• Health Economics---2015---Christian Bünnings, Harald Tauchmann

2015

#### Inequity in the Face of Death

Economics---2015---Pilar García-• Health Gómez, Erik Schokkaert, Tom Van Ourti, Teresa Bago d'Uva,Pilar Garcia-Gomez

We apply the theory of inequality of opportunity to the measurement of inequity in mortality. Using a rich data set linking records of mortality and health events to survey data on lifestyles for the Netherlands (1998–2007), we test the sensitivity of estimated inequity to different normative choices and conclude that the location of the responsibility cut is of vital importance. Traditional measures of inequity (such as socioeconomic and regional inequalities) only capture part of more comprehensive notions of unfairness. We show that distinguishing between different routes via which variables might be associated to mortality is essential to the application of different normative positions. Using the fairness gap (direct unfairness), measured inequity according to our implementation of the 'control' and 'preference' approaches ranges between 0.0229 and 0.0239 (0.0102–0.0218), while regional and socioeconomic inequalities are smaller than 0.0020 (0.0001). The usual practice of standardizing for age and gender has large effects on measured inequity. Finally, we use our model to measure inequity in simulated counterfactual situations. While it is a big challenge to identify all causal relationships involved in this empirical context, this does not affect our main conclusions regarding the importance of normative choices in the measurement of inequity. Copyright © 2014 John Wiley & Sons, Ltd. 2015

• Health Economics---2015---Alan Brennan, Petra Meier, Robin Purshouse, Rachid Rafia, Yang Meng, Daniel Hill-Macmanus, Colin Angus, John Holmes

2015

#### **Editors' Introduction**

• Health Economics---2015---Andrew Jones, Owen O'Donnell, Anthony Scott, Michael Shields

2015

### **Does Experience Rating Improve Obstetric Practices? Evidence from Italy**

 Health Economics---2015---Sofia Amaral-Garcia, Paola Bertoli, Veronica Grembi

2015

#### Constraints on Compliance and the Impact of **Health Information in Rural Pakistan**

• Health Economics---2015---Daniel Bennett, Syed Ali Asjad Naqvi, Wolf-Peter Schmidt

2015

#### **Childhood Obesity and Cognitive Achievement**

• Health Economics---2015---Nicole Black, David Johnston, Anna Peeters

2015

## Attrition Bias in Panel Data: A Sheep in Wolf's Clothing? A Case Study Based on the Mabel Survey

• Health Economics---2015---Terence Cheng, Pravin Trivedi

## GP responses to price regulation: evidence from a French nationwide reform

• Health Economics---2015---Elise Coudin, Anne Pla, Anne-Laure Samson

2015

## Effects of Geographical Accessibility on the Use of Outpatient Care Services: Quasi-Experimental Evidence from Panel Count Data

• Health Economics---2015---Péter Elek,Balázs Váradi,Márton Varga

In 2010–2012, new outpatient service locations were established in Hungarian micro-regions, which had lacked such capacities before. We exploit this quasiexperiment to estimate the effect of geographical accessibility on outpatient case numbers using both individual-level and semi-aggregate panel data. We find a 24-27 per cent increase of case numbers as a result of the establishments. Our specialty-by-specialty estimates imply that a 1-min reduction of travel time to the nearest outpatient unit increases case numbers for example by 0.9 per cent in internal care and 3.1 per cent in rheumatology. The size of the new outpatient capacities has a separate effect, raising the possibility of the presence of supplier-induced demand. By combining a fixed-effects logit and a fixed-effects truncated Poisson estimator, we decompose the effects into increases in the probability of ever visiting a doctor on the one hand and an increase of the frequency of visits on the other hand. We find that new visits were dominant in the vast majority of specialties, whereas both margins were important for example in rheumatology. Finally, we demonstrate the usefulness of the fixed-effects truncated Poisson estimator in modelling count data by examining its robustness by simulations. Copyright © 2015 John Wiley & Sons, Ltd.

## Do High Consumers of Sugar-Sweetened Beverages Respond Differently to Price Changes? A Finite Mixture IV-Tobit Approach

• Health Economics---2015---Fabrice Etilé, Anurag Sharma

2015

## **Healthcare Demand in the Presence of Discrete Price Changes**

• Health Economics---2015---Michael Gerfin,Boris Kaiser,Christian Schmid

2015

#### Long-term Care Insurance and Carers' Labor Supply – A Structural Model

• Health Economics---2015---Johannes Geyer, Thorben Korfhage

2015

#### Healthcare Cost Regressions: Going Beyond the Mean to Estimate the Full Distribution

• Health Economics---2015---Andrew Jones, James Lomas, Nigel Rice

2015

# Evaluation of the Effect of a Continuous Treatment: A Machine Learning Approach with an Application to Treatment for Traumatic Brain Injury

• Health Economics---2015---Noemi Kreif,Richard Grieve,Iván Díaz,David Harrison

2015

# Paying for Primary Care: The Factors Associated with Physician Self-selection into Payment Models

 Health Economics---2015---David Rudoler, Raisa Deber, Janet Barnsley, Richard H. Glazier, Adrian Rohit Dass, Audrey Laporte

To determine the factors associated with primary care physician self-selection into different payment models, we used a panel of eight waves of administrative data for all primary care physicians who practiced in Ontario between 2003/2004 and 2010/2011. We used

a mixed effects logistic regression model to estimate physicians' choice of three alternative payment models: fee for service, enhanced fee for service, and blended capitation. We found that primary care physicians self-selected into payment models based on existing practice characteristics. Physicians with more complex patient populations were less likely to switch into capitation-based payment models where higher levels of effort were not financially rewarded. These findings suggested that investigations aimed at assessing the impact of different primary care reimbursement models on outcomes, including costs and access, should first account for potential selection effects. Copyright © 2015 John Wiley & Sons, Ltd.

## What are the Costs and Benefits of Providing Comprehensive Seven-day Services for Emergency Hospital Admissions?

 Health Economics---2015----Rachel Meacock, Tim Doran, Matt Sutton

The English National Health Service is moving towards providing comprehensive 7-day hospital services in response to higher death rates for emergency weekend admissions. Using Hospital Episode Statistics between 1st April 2010 and 31st March 2011 linked to all-cause mortality within 30 days of admission, we estimate the number of excess deaths and the loss in qualityadjusted life years associated with emergency weekend admissions. The crude 30-day mortality rate was 3.70% for weekday admissions and 4.05% for weekend admissions. The excess weekend death rate equates to 4355 (risk adjusted 5353) additional deaths each year. The health gain of avoiding these deaths would be 29 727–36 539 quality-adjusted life years per year. The estimated cost of implementing 7-day services is £1.07-£1.43 bn, which exceeds by £339-£831 m the maximum spend based on the National Institute for Health and Care Excellence threshold of £595 m-£731 m. There is as yet no clear evidence that 7-day services will reduce weekend deaths or can be achieved without increasing weekday deaths. The planned cost of implementing 7-day services greatly exceeds the maximum amount that the National Health Service should spend on erad-

icating the weekend effect based on current evidence. Policy makers and service providers should focus on identifying specific service extensions for which cost-effectiveness can be demonstrated. Copyright © 2015 John Wiley & Sons, Ltd.

#### The Effectiveness of Health Screening

• Health Economics---2015---Franz Hackl, Martin Halla, Michael Hummer, Gerald J. Pruckner

2015

### **Unemployment and Suicide Mortality: Evidence** from Regional Panel Data in Europe

• Health Economics---2015---Christian Breuer

This paper addresses the influence of economic activity on suicide mortality in Europe. To this end, it employs a new panel data set of 275 regions in 29 countries over the period 1999–2010. The results suggest that unemployment does have a significantly positive influence on suicides. In line with economic theory, this influence varies among gender and age groups. Men of working age are particularly sensitive, while old-age suicide mortality (older than 65 years old) hardly responds to unemployment. Moreover, real economic growth negatively affects the suicide rates of working-age men. The results withstand several robustness checks, such as sample variations, and after controlling for serial and spatial autocorrelation. Copyright © 2014 John Wiley & Sons, Ltd.

# Empirical Testing of the External Validity of a Discrete Choice Experiment to Determine Preferred Treatment Option: The Case of Sleep Apnea

 Health Economics---2015---Nicolas Krucien, Amiram Gafni, Nathalie Pelletier-Fleury

There is an increasing use of the discrete choice experiment (DCE) method in health care to estimate preferences of individuals and the public for different services. Despite this increasing use, there are few studies that investigate the validity of the DCE in health. This study investigates the external validity of DCE by comparing the predicted treatment choices from the DCE to the actual treatment choices made by the same respondents using a decision board (DB) approach. The sample includes 140 patients who came for a sleep apnea routine visit in a hospital setting. Each respondent answered 10 DCE tasks and 1 DB task. The preferences were estimated with a generalized multinomial logit model and the predicted and actual treatment choices were compared both at the sample and individual levels. The results raise questions about the external validity of DCE in health. At the sample level, the comparison showed large but not significant differences between the two methods. This can be explained in part by the aggregation process that obscures variability in the individuals' ences. At the individual level, the comparison showed that the two methods led to significantly different patterns of choices. Copyright © 2014 John Wiley & Sons, Ltd.

### Price-cap Regulation, Uncertainty and the Price Evolution of New Pharmaceuticals

• Health Economics---2015---Ali Shajarizadeh, Aidan Hollis

This paper examines the effect of the regulations restricting price increases on the evolution of pharmaceutical prices. A novel theoretical model shows that this policy leads firms to price new drugs with uncertain demand above the expected value initially. Price decreases after drug launch are more likely, the higher the uncertainty. We empirically test the model's predictions using data from the Canadian pharmaceutical market. The level of uncertainty is shown to play a crucial role in drug pricing strategies. © 2014 The Authors. Health Economics Published by John Wiley & Sons Ltd.

### **Drug Launch Timing and International Reference Pricing**

 Health Economics---2015---Nicolas Houy, Izabela Jelovac

#### How Do Hospitals Respond to Market Entry? Evidence from a Deregulated Market for Cardiac Revascularization

• Health Economics---2015---Suhui Li, Avi Dor

Regulatory entry barriers to hospital service markets, namely Certificate of Need (CON) regulations, are enforced in many US states. Policy makers in other states are considering reinstating CON policies in tandem with service expansions mandated under the Affordable Care Act. Although previous studies examined the volume effects of CON, demand responses to actual entry into local hospital markets are not well understood. In this paper, we empirically examine the demand-augmenting, demand-redistribution, and risk-allocation effects of hospital entry by studying the cardiac revascularization markets in Pennsylvania, a state in which dynamic market entry occurred after repeal of CON in 1996. Results from interrupted timeseries analyses indicate demand-augmenting effects for coronary artery bypass graft (CABG) and businessstealing effects for percutaneous coronary intervention (PCI) procedures: high entrant market share mitigated the declining incidence of CABG, but it had no significant effect on the rising trend in PCI use, among patients with coronary artery disease. We further find evidence that entry by new cardiac surgery centers tended to sort high-severity patients into the more invasive CABG procedure and low-severity patients into the less invasive PCI procedures. These findings underscore the importance of considering market-level strategic responses by hospitals when regulatory barriers are rescinded. Copyright © 2014 John Wiley & Sons, Ltd.

#### **Medicare Part B Intensity and Volume Offset**

• Health Economics---2015---Christopher Brunt

2015

### Machines that Go 'Ping': Medical Technology and Health Expenditures in OECD Countries

• Health Economics---2015---Peter Willemé, Michel Dumont

Technology is believed to be a major determinant of increasing health spending. The main difficulty to quantify its effect is to find suitable proxies to measure medical technological innovation. This paper's main contribution is the use of data on approved medical devices and drugs to proxy for medical technology. The effects of these variables on total real per capita health spending are estimated using a panel model for 18 Organisation for Economic Co-operation and Development (OECD) countries covering the period 1981–2012. The results confirm the substantial cost-increasing effect of medical technology, which accounts for almost 50% of the explained historical growth of spending. Despite the overall net positive effect of technology, the effect of two subgroups of approvals on expenditure is significantly negative. These subgroups can be thought of as representing 'incremental medical innovation', whereas the positive effects are related to radically innovative pharmaceutical products and devices. A separate time series model was estimated for the USA because the FDA approval data in fact only apply to the USA, while they serve as proxies for the other OECD countries. Our empirical model includes an indicator of obesity, and estimations confirm the substantial contribution of this lifestyle variable to health spending growth in the countries studied. Copyright © 2014 John Wiley & Sons, Ltd.

### **Tobacco Control Policies and Sudden Infant Death Syndrome in Developed Nations**

• Health Economics---2015---Christian King,Sara Markowitz,Hana Ross

This paper estimates the effects of higher cigarette prices and smoke-free policies on the prevalence of Sudden Infant Death Syndrome (SIDS). Using a panel of developed countries over a 20 year period, we find that higher cigarette prices are associated with reductions in the prevalence of SIDS. However, we find no evidence

that smoke-free policies are associated with declines in SIDS.

### Accounting for Attribute-Level Non-Attendance in a Health Choice Experiment: Does it Matter?

• Health Economics---2015---Seda Erdem, Danny Campbell, Arne Hole

2015

### Measuring the Hospital Length of Stay/Readmission Cost Trade-Off Under a Bundled Payment Mechanism

• Health Economics---2015---Kathleen Carey

If patients are discharged from the hospital prematurely, many may need to return within a short period of time. This paper investigates the relationship between length of stay and readmission within 30 days of discharge from an acute care hospitalization. It applies a two-part model to data on Medicare patients treated for heart attack in New York state hospitals during 2008 to obtain the expected cost of readmission associated with length of stay. The expected cost of a readmission is compared with the marginal cost of an additional day in the initial stay to examine the cost trade-off between an extra day of care and the expected cost of readmission. The cost of an additional day of stay was offset by expected cost savings from an avoided readmission in the range of 15% to 65%. Results have implications for payment reform based on bundled payment reimbursement mechanisms. Copyright © 2014 John Wiley & Sons, Ltd.

### The Dow is Killing Me: Risky Health Behaviors and the Stock Market

 Health Economics---2015---Chad Cotti, Richard Dunn, Nathan Tefft

We investigate how risky health behaviors and selfreported health vary with the Dow Jones Industrial Average (DJIA) and during stock market crashes. Because stock market indices are leading indicators of economic performance, this research contributes to our

understanding of the macroeconomic determinants of The Effect of Dental Insurance on the Use of health. Existing studies typically rely on the unemployment rate to proxy for economic performance, but this measure captures only one of many channels through which the economic environment may influence individual health decisions. We find that large, negative monthly DJIA returns, decreases in the level of the DJIA, and stock market crashes are widely associated with worsening self-reported mental health and more cigarette smoking, binge drinking, and fatal car accidents involving alcohol. These results are consistent with predictions from rational addiction models and have implications for research on the association between consumption and stock prices. Copyright © 2014 John Wiley & Sons, Ltd.

#### Intended and Unintended Consequences of **Minimum Staffing Standards for Nursing Homes**

• Health Economics---2015---Min M. Chen, David C. Grabowski

Staffing is the dominant input in the production of nursing home services. Because of concerns about understaffing in many US nursing homes, a number of states have adopted minimum staffing standards. Focusing on policy changes in California and Ohio, this paper examined the effects of minimum nursing hours per resident day regulations on nursing home staffing levels and care quality. Panel data analyses of facilitylevel nursing inputs and quality revealed that minimum staffing standards increased total nursing hours per resident day by 5% on average. However, because the minimum staffing standards treated all direct care staff uniformly and ignored indirect care staff, the regulation had the unintended consequences of both lowering the direct care nursing skill mix (i.e., fewer professional nurses relative to nurse aides) and reducing the absolute level of indirect care staff. Overall, the staffing regulations led to a reduction in severe deficiency citations and improvement in certain health conditions that required intensive nursing care. Copyright © 2014 John Wiley & Sons, Ltd.

### **Dental Care for Older Adults: A Partial Identification Analysis**

• Health Economics---2015---Brent Kreider, Richard J. Manski, John Moeller, John Pepper

We evaluate the impact of dental insurance on the use of dental services using a potential outcomes identification framework designed to handle uncertainty created by unknown counterfactuals—that is, the endogenous selection problem—and uncertainty about the reliability of self-reported insurance status. Using data from the health and retirement study, we estimate that utilization rates of adults older than 50 years would increase from 75% to around 80% under universal dental coverage. Copyright © 2014 John Wiley & Sons, Ltd.

#### Impact of FDA Actions, DTCA, and Public Information on the Market for Pain Medication

• Health Economics---2015---W. David Bradford, Andrew N. Kleit

Nonsteroidal anti-inflammatory drugs (NSAIDs) are one of the most important classes of prescription drugs used by primary care physicians to manage pain. The NSAID class of products has a somewhat controversial history, around which a complex regulatory and informational environment has developed. This history includes a boxed warning mandated by the Food and Drug Administration (FDA) for all NSAIDs in 2005. We investigate the impact that various information shocks have had on the use of prescription medications for pain in primary care in the USA. We accomplish this by extracting data on nearly 600 000 patients from a unique nationwide electronic medical record database and estimate the probability of any active prescription for the four types of pain medications as a function of FDA actions, advertising, media coverage, and patient characteristics. We find that even after accounting for multiple sources of information, the FDA label changes and boxed warnings had a significant effect on pain medication prescribing. The boxed warning did not have the same impact on the use of all NSAID inhibitors. We find that the boxed warning reduced

the focus of much of the press attention. In contrast, however, the warning actually increased the use of non-COX-2 NSAID inhibitors. Thus, the efficacy of the FDA's black box warning is clearly mixed. Copyright © 2014 John Wiley & Sons, Ltd.

#### **Childhood Maltreatment and Educational Outcomes: Evidence from South Africa**

• Health Economics---2015---Duncan Pieterse

Many South African children experience maltreatment, but we know little about the effects on long-term child development. Using the only representative dataset that includes a module on childhood maltreatment for a metropolitan city in South Africa, we explore the association between different measures of childhood maltreatment and two educational outcomes (numeracy test scores and dropout). Our study provides an estimate of the association between childhood maltreatment and educational outcomes in a developing country where maltreatment is high. We control for potential confounders using a range of statistical techniques and add several robustness checks to evaluate the strength of our findings. Our results indicate that children who are maltreated suffer large adverse consequences in terms of their numeracy test scores and probability of dropout and that the estimated effects of maltreatment are larger and more consistent for the most severe type of maltreatment. Copyright © 2014 John Wiley & Sons, Ltd.

### Payment Mechanisms and the Composition of **Physician Practices: Balancing** Cost-Containment, Access, and Quality of Care

• Health Economics---2015---Victoria Barham, Olga Milliken

2015

### Going Formal or Informal, Who Cares? The Influence of Public Long-Term Care Insurance

• Health Economics---2015---Pieter Bakx, Claudine Meijer, Frederik Schut, Eddy Doorslaer

the use of NSAID COX-2 inhibitor use, which was International differences in long-term care (LTC) use are well documented, but not well understood. Using comparable data from two countries with universal public LTC insurance, the Netherlands and Germany, we examine how institutional differences relate to differences in the choice for informal and formal LTC. Although the overall LTC utilization rate is similar in both countries, use of formal care is more prevalent in the Netherlands and informal care use in Germany. Decomposition of the between-country differences in formal and informal LTC use reveals that these differences are not chiefly the result of differences in population characteristics but mainly derive from differences in the effects of these characteristics that are associated with between-country institutional differences. These findings demonstrate that system features such as eligibility rules and coverage generosity and, indirectly, social preferences can influence the choice between formal and informal care. Less comprehensive coverage also has equity implications: for the poor, access to formal LTC is more difficult in Germany than in the Netherlands. Copyright © 2014 John Wiley & Sons, Ltd.

### The Volume-Outcome Relationship and Minimum Volume Standards – Empirical Evidence for Germany

• Health Economics---2015---Corinna Hentschker, Roman Mennicken

2015

#### Migraine Headache and Labor Market Outcomes

• Health Economics---2015---Daniel I. Rees, Joseph J. Sabia

While migraine headache can be physically debilitating, no study has attempted to estimate its effects on labor market outcomes. Using data drawn from the National Longitudinal Study of Adolescent Health, we estimate the effect of being diagnosed with migraine headache on labor force participation, hours worked, and wages. Ordinary least squares (OLS) estimates

suggest that migraines are associated with reduced labor force participation and lower wages among females. A negative association between migraine headache and the wages of female respondents is also obtained using an instrumental variables (IV) approach, although the IV estimates are imprecise relative to the OLS estimates. Copyright © 2014 John Wiley & Sons, Ltd. 2015

The Impact of Health Insurance on Health Outcomes and Spending of the Elderly: Evidence from China's New Cooperative Medical Scheme

• Health Economics---2015---Lingguo Cheng, Hong Liu, Ye Zhang, Ke Shen, Yi Zeng

This paper investigates the effects of China's New Cooperative Medical Scheme (NCMS) on health outcomes and healthcare expenditure of the elderly in rural China, using panel data from the 2005 and 2008 waves of the Chinese Longitudinal Healthy Longevity Survey. We employ a strategy that combines propensity score matching with a difference-in-differences approach to address selection bias. Results show that the NCMS has significantly improved the elderly enrollees' activities of daily living and cognitive function but has not led to better self-assessed general health status. We find no significant effect of NCMS on mortality for the previously uninsured elderly in NCMS counties, although there is moderate evidence that it is associated with reduced mortality for the elderly enrollees. We also find that the elderly participants are more likely to get adequate medical services when sick, which provides a good explanation for the beneficial health effects of NCMS. However, there is no evidence that the NCMS has reduced their out-of-pocket spending. Furthermore, we also find that low-income seniors benefit more from NCMS participation in terms of health outcomes and perceived access to health care, suggesting that the NCMS helps reduce health inequalities among the rural elderly. Copyright © 2014 John Wiley & Sons, Ltd.

### Sickness Absence, Moral Hazard, and the **Business Cycle**

• Health Economics---2015---Stefan Pichler

#### **Maternal Employment During Pregnancy and Birth Outcomes: Evidence From Danish Siblings**

• Health Economics---2015---Miriam Wüst

#### On the Optimal Production Capacity for Influenza **Vaccine**

• Health Economics---2015---Rikard Forslid, Mathias Herzing

2015

### **Distributional Cost-Effectiveness Analysis of** Health Care Programmes - A Methodological Case Study of the UK Bowel Cancer Screening **Programme**

• Health Economics---2015---Migdad Asaria, Susan Griffin, Richard Cookson, Sophie Whyte, Paul Tappenden

This paper presents an application of a new methodological framework for undertaking distributional costeffectiveness analysis to combine the objectives of maximising health and minimising unfair variation in health when evaluating population health interventions. The National Health Service bowel cancer screening programme introduced in 2006 is expected to improve population health on average and to worsen population health inequalities associated with deprivation and ethnicity - a classic case of 'intervention-generated inequality'. We demonstrate the distributional costeffectiveness analysis framework by examining two redesign options for the bowel cancer screening programme: (i) the introduction of an enhanced targeted reminder aimed at increasing screening uptake in deprived and ethnically diverse neighbourhoods and (ii) the introduction of a basic universal reminder aimed at increasing screening uptake across the whole population. Our analysis indicates that the universal reminder is the strategy that maximises population health, while the targeted reminder is the screening strategy that

minimises unfair variation in health. The framework is used to demonstrate how these two objectives can be traded off against each other, and how alternative social value judgements influence the assessment of which strategy is best, including judgements about which dimensions of health variation are considered unfair and judgements about societal levels of inequality aversion. © 2014 The Authors. Health Economics published by John Wiley & Sons Ltd.

## Realigning Demand and Supply Side Incentives to Improve Primary Health Care Seeking in Rural China

• Health Economics---2015---Timothy Powell-Jackson, Winnie Chi-Man Yip, Wei Han

China's recent and ambitious health care reform involves a shift from the reliance on markets to the reaffirmation of the central role of the state in the financing and provision of services. In collaboration with the Government of the Ningxia province, we examined the impact of two key features of the reform on health care utilisation using panel household data. The first policy change was a redesign of the rural insurance benefit package, with an emphasis on reorientating incentives away from inpatient towards outpatient care. The second policy change involved a shift from a fee-forservice payment method to a capitation budget with pay-for-performance amongst primary care providers. We find that the insurance intervention, in isolation, led to a 47% increase in the use of outpatient care at village clinics and greater intensity of treatment (e.g. injections). By contrast, the two interventions in combination showed no effect on health care use over and above that generated by the redesign of the insurance benefit package. Copyright © 2014 John Wiley & Sons, Ltd.

### **Cost-effectiveness Analysis and Insurance Coverage: Solving a Puzzle**

• Health Economics---2015---Mark Pauly

The conventional model for the use of cost-effectiveness analysis for health programs involves determining whether the cost per unit of effectiveness of the program is lower than some socially determined maximum acceptable cost per unit of effectiveness. If a program is better by this criterion, the policy implication is that it should be implemented by full coverage of its cost by insurance; if not, the program should not be implemented. This paper examines the unanswered question of how cost-effectiveness analysis should be performed and interpreted when insurance coverage may involve cost sharing. It explores the question of how cost sharing should be related to the magnitude of a cost-effectiveness ratio. A common view that cost sharing should vary inversely with program costeffectiveness is shown to be incorrect. A key issue in correct analysis is whether there is heterogeneity in marginal effectiveness of care that cannot be perceived by the social planner but is known by the demander. It is possible that some programs that would fail the social efficiency test at full coverage will be acceptable with positive cost sharing. Combining individual and social preferences affects both the choice of programs and the extent of cost sharing. Copyright © 2014 John Wiley & Sons, Ltd.

### Winning Big but Feeling no Better? The Effect of Lottery Prizes on Physical and Mental Health

• Health Economics---2015---Bénédicte Apouey, Andrew Clark

We use British panel data to determine the exogenous impact of income on a number of individual health outcomes: general health status, mental health, physical health problems, and health behaviours (drinking and smoking). Lottery winnings allow us to make causal statements regarding the effect of income on health, as the amount won by winners is largely exogenous. Positive income shocks have no significant effect on self-assessed overall health, but a significant positive effect on mental health. This result seems paradoxical on two levels. First, there is a well-known gradient in health status in cross-sectional data, and second, general health should partly reflect mental health, so that we may expect both variables to move in the same direction. We propose a solution to the first apparent

paradox by underlining the endogeneity of income. For the second, we show that lottery winnings are also associated with more smoking and social drinking. General health will reflect both mental health and the effect of these behaviours and so may not improve following a positive income shock. Copyright © 2014 John Wiley & Sons, Ltd.

#### Implications of Utilization Shifts on Medical-care Price Measurement

• Health Economics---2015---Abe Dunn, Eli Liebman, Adam Shapiro

2015

### The Effect of Medicaid on Health Care Consumption of Young Adults

• Health Economics---2015---Dominic Coey

2015

### Non-Linear Effects of Soda Taxes on Consumption and Weight Outcomes

• Health Economics---2015---Jason Fletcher, David Frisvold, Nathan Tefft

The potential health impacts of imposing large taxes on soda to improve population health have been of interest for over a decade. As estimates of the effects of existing soda taxes with low rates suggest little health improvements, recent proposals suggest that large taxes may be effective in reducing weight because of non-linear consumption responses or threshold effects. This paper tests this hypothesis in two ways. First, we estimate non-linear effects of taxes using the range of current rates. Second, we leverage the sudden, relatively large soda tax increase in two states during the early 1990s combined with new synthetic control methods useful for comparative case studies. Our findings suggest virtually no evidence of non-linear or threshold effects. Copyright © 2014 John Wiley & Sons, Ltd.

#### The Effects of A Soft Drink Tax in the UK

• Health Economics---2015---Richard Tiffin, Ariane Kehlbacher, Matthew Salois

The majority of the UK population is either overweight or obese. Health economists, nutritionists and doctors are calling for the UK to follow the example of other European countries and introduce a tax on soft drinks as a result of the perception that high intakes contribute to diet-related disease. We use a demand model estimated with household-level data on beverage purchases in the UK to investigate the effects of a tax on soft drink consumption. The model is a Quadratic Almost Ideal Demand System, and censoring is handled by applying a double hurdle. Separate models are estimated for low, moderate and high consumers to allow for a differential impact on consumption between these groups. Applying different hypothetical tax rates, we conclude that understanding the nature of substitute/complement relationships is crucial in designing an effective policy as these relationships differ between consumers depending on their consumption level. The overall impact of a soft drink tax on calorie consumption is likely to be small. Copyright © 2014 John Wiley & Sons, Ltd.

## Do Fertility Control Policies Affect Health in Old Age? Evidence from China's One-Child Experiment

 Health Economics---2015---Asadul Islam, Russell Smyth

How do fertility control policies contribute to the welfare of women, and their husbands, particularly as they get older? We consider whether the reduction in fertility resulting from population control policies has had any effect on the health of elderly parents in China. In particular, we examine the influence of this fertility decline, experienced due to China's one-child policy, on several measures of the health of parents in middle and old age. Overall, our results suggest that having fewer children has a positive effect on self-reported parental health but generally no effect on other measures of health. The results also suggest that upstream financial transfers have a positive effect on several measures

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#### **Estimating the Benefits of Public Health Policies** that Reduce Harmful Consumption

• Health Economics---2015---Elizabeth M. Ashlev, Clark Nardinelli, Rosemarie A. Lavatv

For products such as tobacco and junk food, where policy interventions are often designed to decrease consumption, affected consumers gain utility from improvements in lifetime health and longevity but also lose utility associated with the activity of consuming the product. In the case of anti-smoking policies, even though published estimates of gross health and longevity benefits are up to 900 times higher than the net consumer benefits suggested by a more direct willingness-to-pay estimation approach, there is little recognition in the cost-benefit and cost-effectiveness literature that gross estimates will overstate intrapersonal welfare improvements when utility losses are not netted out. This paper presents a general framework for analyzing policies that are designed to reduce inefficiently high consumption and provides a rule of thumb for the relationship between net and gross consumer welfare effects: where there exists a plausible estimate of the tax that would allow consumers to fully internalize health costs, the ratio of the tax to the per-unit long-term cost can provide an upper bound on the ratio of net to gross benefits. Published 2014. This article is a U.S. Government work and is in the public domain in the USA.

### Test-Retest Reliability of Capability Measurement in the UK General Population

Economics---2015---Hareth Health Al-Janabi, Terry N. Flynn, Tim J. Peters, Stirling Bryan, Joanna Coast

Although philosophically attractive, it may be difficult, in practice, to measure individuals' capabilities (what they are able to do in their lives) as opposed to their functionings (what they actually do). To examine

of parental health. Copyright © 2014 John Wiley & whether capability information could be reliably selfreported, we administered a measure of self-reported capability (the Investigating Choice Experiments Capability Measure for Adults, ICECAP-A) on two occasions, 2 weeks apart, alongside a self-reported health measure (the EuroQol Five Dimensional Questionnaire with 3 levels, EQ-5D-3L). We found that respondents were able to report capabilities with a moderate level of consistency, although somewhat less reliably than their health status. The more socially orientated nature of some of the capability questions may account for the difference. © 2014 The Authors Health Economics Published by John Wiley & Sons Ltd.

### The Impact of Community-Based Health Insurance on Utilization and Out-of-Pocket **Expenditures in Lao People's Democratic** Republic

• Health Economics---2015---Sarah Alkenbrack, Magnus Lindelow

Community-based health insurance in Lao People's Democratic Republic targets the informal workforce. Estimates of the program's impact on utilization and out-of-pocket expenditures (OOPs) were obtained using a case-comparison study of 3000 households (14 804 individuals) in urban and semi-urban areas. We used propensity score matching to control for bias on observables and to account for heterogeneity. We check the sensitivity of the results using a weighted regression combined with propensity score matching, which leads to doubly robust treatment effect estimates. The results are robust across the two approaches and show that the insured have significantly higher utilization, lower OOPs and lower incidence of catastrophic expenditures, and are less likely to employ coping mechanisms. However, coverage of the scheme is extremely low, indicating negligible population level impact. Furthermore, the results show that the scheme provides greater protection to the better off than to the poor: the poor are less likely to enrol, and among the poor who are enrolled, there has been no significant impact on utilization of outpatient services, total OOPs or catastrophic expenditures. We discuss the policy implications in the context of the international debate percentage points and the probability of initiating the regarding the prospects for the role of communitybased health insurance in national financing strategies. Copyright © 2013 John Wiley & Sons, Ltd.

#### A Pint for A Pound? Minimum Drinking Age Laws and Birth Outcomes

 Health Economics---2015---Alan Barreca, Marianne Page

Minimum legal drinking age (MLDA) laws are known to reduce alcohol consumption among young adults. One additional benefit of higher MLDAs may be that they improve health outcomes among infants born to young mothers. We estimate the impact of MLDAs on infant health in the USA by comparing birth outcomes among 14–20 year old mothers who were exposed to different MLDAs because of when and where they gave birth. Infants born to mothers who were between the ages of 21 and 24 years are included as a control group. We find that low MLDAs are associated with very small birth weight reductions, but have a little relationship with other traditional measures of infant health. We find compelling evidence, however, that a low MLDA increases the probability of a female birth, which suggests that restricting alcohol access to young mothers may reduce fetal deaths. Copyright © 2013 John Wiley & Sons, Ltd.

### The Effects of Alcohol on the Consumption of **Hard Drugs: Regression Discontinuity Evidence** from the National Longitudinal Study of Youth, 1997

• Health Economics---2015---Monica Deza

This paper estimates the effect of alcohol use on consumption of hard drugs using the exogenous decrease in the cost of accessing alcohol that occurs when individuals reach the minimum legal drinking age. By using a regression discontinuity design and the National Longitudinal Study of Youth 1997, I find that all measures of alcohol consumption, even alcohol initiation increase discontinuously at age 21 years. I also find evidence that consumption of hard drugs decreased by 1.5 to 2 use of hard drugs decreased by 1 percentage point at the age of 21 years, while the intensity of use among users remained unchanged. These estimates are robust to a variety of specifications and also remain robust across different subsamples. Copyright © 2014 John Wiley & Sons, Ltd.

### The Effect of Financial and Educational Incentives on Rational Prescribing. A **State-Space Approach**

Pechli-• Health Economics---2015---Petros vanoglou, Jaap E. Wieringa, Tim Jager, Maarten J. Postma

In 2005, a Dutch health insurer introduced a financial incentive directed to general practitioners to promote rational prescribing of statins and proton pump inhibitors (PPIs). Concomitantly, a regional institution that develops pharmacotherapeutic guidelines implemented two educational interventions also aiming at promoting rational statin and PPI prescribing. Utilizing a prescription database, we estimated the effect of the interventions on drug utilization and cost of statins and PPIs over time. We measured the effect of the interventions within an implementation and a control region. The implementation region included prescriptions from the province of Groningen where the educational intervention was implemented and where the health insurer is most active. The control region comprised all other provinces covered by the database. We modelled the effect of the intervention using a state-space approach. Significant differences in prescribing and cost patterns between regions were observed for statins and PPIs. These differences however were mostly related to the concurrent interventions of Proeftuin Farmacie Groningen. We found no evidence indicating a significant effect of the rational prescribing intervention on the prescription patterns of statins and PPIs. Our estimates on the economic impact of the Proeftuin Farmacie Groningen interventions indicate that educational activities as such can achieve significant cost savings. Copyright © 2014 John Wiley & Sons, Ltd.

### Do Diagnosis-Related Group-Based Payments Incentivise Hospitals to Adjust Output Mix?

• Health Economics---2015---Li-Lin Liang

This study investigates whether the diagnosis-related group (DRG)-based payment method motivates hospitals to adjust output mix in order to maximise profits. The hypothesis is that when there is an increase in profitability of a DRG, hospitals will increase the proportion of that DRG (own-price effects) and decrease those of other DRGs (cross-price effects), except in cases where there are scope economies in producing two different DRGs. This conjecture is tested in the context of the case payment scheme (CPS) under Taiwan's National Health Insurance programme over the period of July 1999 to December 2004. To tackle endogeneity of DRG profitability and treatment policy, a fixed-effects three-stage least squares method is applied. The results support the hypothesised own-price and cross-price effects, showing that DRGs which share similar resources appear to be complements rather substitutes. For-profit hospitals do not appear to be more responsive to DRG profitability, possibly because of their institutional characteristics and bonds with local communities. The key conclusion is that DRG-based payments will encourage a type of 'product-range' specialisation, which may improve hospital efficiency in the long run. However, further research is needed on how changes in output mix impact patient access and pay-outs of health insurance. Copyright © 2014 John Wiley & Sons, Ltd.

## Responsibility-Sensitive Fairness in Health Financing: Judgments in Four European Countries

• Health Economics---2015---Christine Le Clainche, Jerome Wittwer

Risky health behaviours substantially increase medical and social costs. We document the extent to which a sample of European students (from Denmark, France, Italy and Sweden) consider that individuals should assume the financial burden of paying the costs of risky behaviour. We test the acceptability of different ways of financing costs because of ill health that is more or less associated with risky behaviour in accordance with a normative framework relating to responsibility-sensitive fairness. We find that the majority of students agree with assuming financial responsibility for risky behaviours and that there should be compensation for unfavourable circumstances. Students agree that two individuals with the same responsibility variables should make an equal financial contribution and that more effort in maintaining health for given circumstances should be rewarded with a lower financial contribution. The specific health context and the type of risky behaviours involved matter in determining perceptions of justice in health financing. Copyright © 2014 John Wiley & Sons, Ltd.

### Communicating the Parameter Uncertainty in the IQWiG Efficiency Frontier to Decision-Makers

 Health Economics---2015---Björn Stollenwerk, Stefan K. Lhachimi, Andrew Briggs, Elisabeth Fenwick, Jaime J. Caro, Uwe Siebert, Marion Danner, Andreas Gerber-Grote

The Institute for Quality and Efficiency in Health Care (IQWiG) developed—in a consultation process with an international expert panel—the efficiency frontier (EF) approach to satisfy a range of legal requirements for economic evaluation in Germany's statutory health insurance system. The EF approach is distinctly different from other health economic approaches. Here, we evaluate established tools for assessing and communicating parameter uncertainty in terms of their applicability to the EF approach. Among these are tools that perform the following: (i) graphically display overall uncertainty within the IQWiG EF (scatter plots, confidence bands, and contour plots) and (ii) communicate the uncertainty around the reimbursable price. We found that, within the EF approach, most established plots were not always easy to interpret. Hence, we propose the use of price reimbursement acceptability curves—a modification of the well-known cost-effectiveness acceptability curves. Furthermore, it emerges that the net monetary benefit allows an intuitive interpretation of parameter uncertainty within

the EF approach. This research closes a gap for handling uncertainty in the economic evaluation approach of the IQWiG methods when using the EF. However, the precise consequences of uncertainty when determinenced by the sample of recruiting centres. Finally, we ing prices are yet to be defined. © 2014 The Authors. Propose two concepts that may advance generalisability the Health Economics published by John Wiley & Sons are yet to be defined. © 2014 The Authors. Propose two concepts that may advance generalisability research. First, we distinguish between the 'research space' and the 'policy space' and argue that policy space' and argue that policy space.

#### Suicide and Organ Donors: Spillover Effects of Mental Health Insurance Mandates

• Health Economics---2015---Jose Fernandez,Matthew Lang

This paper considers the effect of mental health insurance mandates on the supply of cadaveric donors. We find that enacting a mental health mandate decreases the count of organ donors from suicides and results are driven by female donors. Using a number of empirical specifications, we calculate that the mental health parity laws are responsible for an approximately 0.52% decrease in cadaveric donors. Additional regression results show that the mandates are not related to other types of organ donations, ruling out the possibility that the mandates are related to an overall trend in the supply of organ donations. The findings suggest that future policies aimed at reducing suicide in a large and significant way can potentially increase the inefficiency that currently exists in the organ donor market. Copyright © 2014 John Wiley & Sons, Ltd.

### Rational Centre Selection for RCTs with a Parallel Economic Evaluation—the Next Step Towards Increased Generalisability?

 Health Economics---2015---Adrian Gheorghe, Tracy Roberts, Thomas D. Pinkney, Dion G. Morton, Melanie Calvert

The paper discusses the impact of centre selection on the generalisability of randomised controlled trial (RCT)-based economic evaluations and suggests a future research agenda. The first section briefly reviews the current methods for addressing generalisability. We argue that these methods make no verifiable assumptions about how representative the recruiting centres

are to the population of centres in the jurisdiction. The second section uses data from a multicentre RCT to illustrate that cost-effectiveness estimates can be influenced by the sample of recruiting centres. Finally, we propose two concepts that may advance generalisability research. First, we distinguish between the 'research space' and the 'policy space' and argue that policy makers are interested in the latter, while current methods describe the former. Second, we propose a centre-specific generalisability index used at RCT design stage to address generalisability. We conclude that future research should focus on generalisability at RCT design stage rather than on post hoc analyses. Copyright © 2014 John Wiley & Sons, Ltd.

#### In Memoriam: Willard G. Manning, 1946-2014

• Health Economics---2015---John Mullahy

2015

#### Scoring the Icecap-a Capability Instrument. Estimation of a UK General Population Tariff

Health Economics---2015---Terry N.
 Flynn, Elisabeth Huynh, Tim J. Peters, Hareth
 Al-Janabi, Sam Clemens, Alison Moody, Joanna
 Coast

This paper reports the results of a best-worst scaling (BWS) study to value the Investigating Choice Experiments Capability Measure for Adults (ICECAP-A), a new capability measure among adults, in a UK setting. A main effects plan plus its foldover was used to estimate weights for each of the four levels of all five attributes. The BWS study was administered to 413 randomly sampled individuals, together with sociodemographic and other questions. Scaleadjusted latent class analyses identified two preference and two (variance) scale classes. Ability to characterize preference and scale heterogeneity was limited, but data quality was good, and the final model exhibited a high pseudo-r-squared. After adjusting for heterogeneity, a population tariff was estimated. This showed that 'attachment' and 'stability' each account for around 22% of the space, and 'autonomy'

, 'achievement' and 'enjoyment' account for around 18% each. Across all attributes, greater value was placed on the difference between the lowest levels of capability than between the highest. This tariff will enable ICECAP-A to be used in economic evaluation both within the field of health and across public policy generally. © 2013 The Authors. Health Economics published by John Wiley & Sons Ltd.

### A Comparison of Outpatient Healthcare Expenditures Between Public and Private Medical Institutions in Urban China: An Instrumental Variable Approach

• Health Economics---2015---Judy Xu,Gordon Liu,Guoying Deng,Lin Li,Xianjun Xiong,Kisalaya Basu

The growth of healthcare expenditure provokes constant comments and discussions, as countries battle the issues on cost containment and cost effectiveness. Prior to 1978, medical institutions in China were either stateowned or were collective public hospitals. Since 1978, China has been trying to rebuild its healthcare system, which was destroyed during the 'cultural revolution' , allowing private medical institutions to deliver healthcare services. As a result, private medical institutions have grown from 0% to 28.57% between 1978 and 2010. In this context, we compare outpatient healthcare expenditures between public and private medical institutions. The central problem of this comparison is that the choice of medical institution is endogenous. So we apply an instrumental variable (IV) framework utilizing geographic information (whether the closest medical institution is private) as the instrument while controlling for severity of health and other relevant confounding factors. Using China's Urban Resident Basic Medical Insurance Survey 2008–2010, we found that there is no difference in expenditure between public and private medical institutions when IV framework is used. Our econometric tests suggest that our IV model is specified appropriately. However, the ordinary least square model, which is inconsistent in the presence of endogenous regressor(s), reveals that public medical institutions are more expensive. Copyright © 2013

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### Comparing WTP Values of Different Types of QALY Gain Elicited from the General Public

 Health Economics---2015---Mark Pennington,Rachel Baker,Werner Brouwer,Helen Mason,Dorte Gyrd-Hansen,Angela Robinson,Cam Donaldson

Background The appropriate thresholds for decisions on the cost-effectiveness of medical interventions remain controversial, especially in 'end-of-life' situations. Evidence of the values placed on different types of health gain by the general public is limited. Across nine European countries, 17 657 people were presented with different hypothetical health scenarios each involving a gain of one quality adjusted life year (QALY) and asked about their willingness to pay (WTP) for that gain. The questions included quality of life (QoL) enhancing and life extending health gains, and a scenario where respondents faced imminent, premature death. The mean WTP values for a one-QALY gain composed of QoL improvements were modest (PPP\$11 000). When comparing QALY gains obtained in the near future, the valuation of life extension exceeded the valuation of QoL enhancing gains (mean WTP PPP\$19 000 for a scenario in which a coma is avoided). The mean WTP values were higher still when respondents faced imminent, premature death (PPP\$29 000). Evidence from the largest survey on the value of health gains by the general public indicated a higher value for life extending gains compared with QoL enhancing gains. A further modest premium may be indicated for life extension when facing imminent, premature death. Copyright © 2013 John Wiley & Sons, Ltd.

### Value-Based Differential Pricing: Efficient Prices for Drugs in a Global Context

• Health Economics---2015---Patricia Danzon, Adrian Towse, Jorge Mestre-Ferrandiz

This paper analyzes pharmaceutical pricing between and within countries to achieve second-best static and dynamic efficiency. We distinguish countries with and without universal insurance, because insurance undermines patients' price sensitivity, potentially leading to prices above second-best efficient levels. In countries with universal insurance, if each payer unilaterally sets an incremental cost-effectiveness ratio (ICER) threshold based on its citizens' willingness-to-pay for health; manufacturers price to that ICER threshold; and payers limit reimbursement to patients for whom a drug is cost-effective at that price and ICER, then the resulting price levels and use within each country and price differentials across countries are roughly consistent with second-best static and dynamic efficiency. These valuebased prices are expected to differ cross-nationally with per capita income and be broadly consistent with Ramsey optimal prices. Countries without comprehensive insurance avoid its distorting effects on prices but also lack financial protection and affordability for the poor. Improving pricing efficiency in these self-pay countries includes improving regulation and consumer information about product quality and enabling firms to price discriminate within and between countries. © 2013 The Authors. Health Economics published by John Wiley & Sons Ltd.

### Differential Labour Market Impacts from Disability Onset

• Health Economics---2015---Cain Polidano, Ha Vu

We estimate the causal labour market impacts of disability onset by gender, age and education levels up to 4 years after onset using longitudinal data from the Household Income and Labour Dynamics Australia survey and difference-in-difference propensity score matching techniques. We find lasting negative impacts on employment, especially full-time employment, which is due more to reduced movement into full-time employment than downshifting from full-time to part-time work following onset. Those without post-school education qualifications are particularly vulnerable to the impacts of onset and are more likely to be out of work and on income support than those with qualifications up to 4 years after onset, due in part because they have greater difficulty adjusting. Copyright © 2013 John Wiley & Sons, Ltd.

### Universal Public Finance of Tuberculosis Treatment in India: An Extended Cost-Effectiveness Analysis

• Health Economics---2015---Stéphane Verguet,Ramanan Laxminarayan,Dean T. Jamison

Universal public finance (UPF)—government financing of an intervention irrespective of who is receiving it—for a health intervention entails consequences in multiple domains. First, UPF increases intervention uptake and hence the extent of consequent health gains. Second, UPF generates financial consequences including the crowding out of private expenditures. Finally, UPF provides insurance either by covering catastrophic expenditures, which would otherwise throw households into poverty or by preventing diseases that cause them. This paper develops a method—extended cost-effectiveness analysis (ECEA)—for evaluating the consequences of UPF in each of these domains. It then illustrates ECEA with an evaluation of UPF for tuberculosis treatment in India. Using plausible values for key parameters, our base case ECEA concludes that the health gains and insurance value of UPF would accrue primarily to the poor. Reductions in out-of-pocket expenditures are more uniformly distributed across income quintiles. A variant on our base case suggests that lowering costs of borrowing for the poor could potentially achieve some of the health gains of UPF, but at the cost of leaving the poor more deeply in debt. © 2014 The Authors. Health Economics published by John Wiley Ltd.

### The Impact of Work-Limiting Disability on Labor Force Participation

• Health Economics---2015---Douglas Webber,Melissa J. Bjelland

According to the justification hypothesis, non-employed individuals may over-report their level of work limitation, leading to biased census/survey estimates of the prevalence of severe disabilities and the associated labor force participation rate. For researchers studying policies which impact the disabled or elderly (e.g., Supplemental Security Income, Disability Insurance, and Early Retirement), this could lead to significant

bias in key parameters of interest. Using the American Community Survey, we examine the potential for both inflated and deflated reported disability status and generate a general index of disability, which can be used to reduce the bias of these self-reports in other studies. We find that at least 4.8 million individuals have left the labor force because of a work-limiting disability, at least four times greater than the impact implied by our replication of previous models. Copyright © 2013 John Wiley & Sons, Ltd.

## The Tougher the Better: An Economic Analysis of Increased Payment Thresholds on the Performance of General Practices

 Health Economics---2015---Yan Feng,Ada Ma,Shelley Farrar,Matt Sutton

We investigate whether and how a change in performance-related payment motivated General Practitioners (GPs) in Scotland. We evaluate the effect of increases in the performance thresholds required for maximum payment under the Quality and Outcomes Framework in April 2006. A difference-in-differences estimator with fixed effects was employed to examine the number of patients treated under clinical indicators whose payment schedules were revised and to compare these with the figures for those indicators whose schedules remained unchanged. The results suggest that the increase in the maximum performance thresholds increased GPs' performance by 1.77% on average. Low-performing GPs improved significantly more (13.22%) than their high-performing counterparts (0.24%). Changes to maximum performance thresholds are differentially effective in incentivising GPs and could be used further to raise GPs' performance across all indicators. Copyright © 2013 John Wiley & Sons, Ltd.

#### Taxonomy for Methods of Resource Use Measurement

• Health Economics---2015---Colin H. Ridyard, Dyfrig A. Hughes

Resource use measures, including forms, diaries and

questionnaires, are ubiquitous in trial-based economic evaluations in the UK. However, there are concerns about the accuracy of how they are described, which limits the transparency of reporting. We developed a simple and structured taxonomy for methods of resource use measurement by examining 94 resource use measures (RUMs) employed within clinical trials, conducting a descriptive synthesis of the extracted data and soliciting wider opinion during a period of consultation. The reporting of RUMs was found to be varied and inconsistent. Our new taxonomy, which considered the views of 20 consultees, requires that RUMs are reported with a description of the following: (i) the source of data (patient; patient proxy, e.g. carer, parent or guardian; observation of contemporary events; medical records; or other databases); (ii) who completes the RUM (patient or their proxy, and researcher or health care professional); (iii) how it is administered (to self [the patient], face to face or telephone); (iv) how it is recorded (form, questionnaire, log or diary); and (v) medium of recording (e.g. paper or electronically). Based on the present analysis, we have developed a taxonomy for RUMs that should result in data collection methods being described more accurately. Copyright © 2014 John Wiley & Sons, Ltd.

### Smokers' Strategic Responses to Sin Taxes: Evidence from Panel Data in Thailand

• Health Economics---2015---Justin S. White, Hana Ross

In addition to quitting and cutting consumption, smokers faced with higher cigarette prices may compensate in several ways that mute the health impact of cigarette taxes. This study examines three price avoidance strategies among adult male smokers in Thailand: trading down to a lower-priced brand, buying individual sticks of cigarettes instead of packs, and substituting roll-your-own tobacco for factory-manufactured cigarettes. Using two panels of microlevel data from the International Tobacco Control Southeast Asia Study, collected in 2005 and 2006, we estimate the effects of a substantial excise tax increase implemented throughout Thailand in December 2005. We present estimates

of the marginal effects and price elasticities for each of five consumer behaviors. We find that, controlling for baseline smoking characteristics, sociodemographics, and policy variables, quitting is highly sensitive to changes in cigarette prices, but so are brand choice, stick-buying, and use of roll-your-own tobacco. Neglecting such strategic responses leads to overestimates of a sin tax's health impact, and neglecting product substitution distorts estimates of the price elasticity of cigarette demand. We discuss the implications for consumer welfare and several policies that mitigate the adverse impact of consumer responses. Copyright © 2013 John Wiley & Sons, Ltd.

## The Effect of Medicaid Policies on the Diagnosis and Treatment of Children's Mental Health Problems in Primary Care

• Health Economics---2015---Lesley Turner

Primary care physicians play a substantial role in diagnosing and treating children's mental health disorders, but Medicaid managed care policies may limit these physicians' ability to serve low-income children. Using data from the universe of Medicaid recipients in three states, I evaluate how Medicaid managed care policies impact primary care diagnosis and treatment of children's mental health disorders. Specific policies examined include the presence of a behavioral carveout, traditional health maintenance organization, or primary care case management program. To alleviate concerns of endogenous patient sorting, my preferred identification strategy uses variation in Medicaid policy penetration to instrument for individual plan choices. I show that while health maintenance organizations reduce diagnosis and non-drug treatment of mental health disorders, primary care case management program policies shift in diagnosis and treatment from within primary care to specialist providers such as psychiatrists, where serious mental health conditions are more likely to be identified. Copyright © 2013 John Wiley & Sons, Ltd.

## Are Physicians' Prescribing Decisions Sensitive to Drug Prices? Evidence from a Free-antibiotics Program

• Health Economics---2015---Shanjun Li,Ramanan Laxminarayan

This paper investigates whether patient-level factors, in particular cost considerations, affect the physicians' prescribing decisions. In the context of a natural experiment, we examine the effect of the first US commercial free-antibiotics program on retail antibiotic sales. We find an overall increase in antibiotic prescriptions under the program and substitutions to covered antibiotics from not-covered antibiotics. The shift away from not-covered antibiotics, particularly from those without covered equivalents, indicates a change in the physicians' prescribing decisions. We locate stronger program effects in low-income areas. Our findings, robust to a variety of specifications, are in contrast with previous literature. Copyright © 2013 John Wiley & Sons, Ltd.

### Do Public Smoking Bans have an Impact on Active Smoking? Evidence from the UK

 Health Economics---2015---Andrew Jones, Audrey Laporte, Nigel Rice, Eugenio Zucchelli

The literature on the effects of public smoking bans on smoking behaviour presents conflicting results and there is limited evidence on their impact on active smoking. This paper evaluates the impact of smoking bans on active smoking using data from the British Household Panel Survey and exploiting the policy experiment provided by the differential timing of the introduction of the bans in Scotland and England. We assess the short-term impact of the smoking bans by employing a series of flexible difference-in-differences fixed effects panel data models. We find that the introduction of the public smoking bans in England and Scotland had limited short-run effects on both smoking prevalence and the total level of smoking. Although we identify significant differences in trends in smoking consumption across the survey period by population sub-groups, we find insufficient evidence to conclude that these were affected by the introduction of the smoking bans. These results challenge those found in the public health literature but are in line with the most recent strand of economic literature indicating that there is no firm evidence on the effects of smoking bans on smoking. Copyright © 2013 John Wiley & Sons, Ltd.

### To Count or Not to Count Deaths: Reranking Effects in Health Distribution Evaluation

• Health Economics---2015---Yves Arrighi,Mohammad Abu-Zaineh,Bruno Ventelou,Mohammad Abu-Zaineh

Populations' structures and sizes can be a result of healthcare policy decisions. We use a two-period theoretical framework and a dynamic microsimulation model to examine the consequences of this assertion on the appraisal of alternative health policy options. Results show that standard welfare-in-health measures are sensitive to changes in populations' sizes, in that taking into account the (virtual) existence of the dead can alter the ranking of policy options. Disregarding differences in the survivals induced by alternative policies can bias programmes' ranking in favour of less live-saving policies. The paper alerts on the risk of policy misranking by the use of ex-post cross-sectional analyses, neglecting deaths occurring in the past as well as counterfactual deaths in alternative policy scenarios. Copyright © 2013 John Wiley & Sons, Ltd.

## The Impact of the Macroeconomy on Health Insurance Coverage: Evidence from the Great Recession

 Health Economics---2015----John Cawley, Asako S. Moriya, Kosali Simon

This paper investigates the impact of the macroeconomy on the health insurance coverage of Americans using panel data from the Survey of Income and Program Participation for 2004–2010, a period that includes the Great Recession of 2007–2009. We find that a one percentage point increase in the state unemployment rate is associated with a 1.67 percentage point (2.12%)

reduction in the probability that men have health insurance; this effect is strongest among college-educated, white, and older (50–64 years old) men. For women and children, health insurance coverage is not significantly correlated with the unemployment rate, which may be the result of public health insurance acting as a social safety net. Compared with the previous recession, the health insurance coverage of men is more sensitive to the unemployment rate, which may be due to the nature of the Great Recession. Copyright © 2013 John Wiley & Sons, Ltd.

#### Informal Care and Caregiver's Health

• Health Economics---2015---Young Kyung Do,Edward Norton,Sally C. Stearns,Courtney Van Houtven

This study aims to measure the causal effect of informal caregiving on the health and health care use of women who are caregivers, using instrumental variables. We use data from South Korea, where daughters and daughters-in-law are the prevalent source of caregivers for frail elderly parents and parents-in-law. A key insight of our instrumental variable approach is that having a parent-in-law with functional limitations increases the probability of providing informal care to that parent-in-law, but a parent-in-law's functional limitation does not directly affect the daughter-in-law's health. We compare results for the daughter-in-law and daughter samples to check the assumption of the excludability of the instruments for the daughter sample. Our results show that providing informal care has significant adverse effects along multiple dimensions of health for daughter-in-law and daughter caregivers in South Korea. Copyright © 2013 John Wiley & Sons, Ltd.

#### Pharmaceutical Pricing in Emerging Markets: Effects of Income, Competition, and Procurement

 Health Economics---2015---Patricia Danzon, Andrew W. Mulcahy, Adrian Towse

This paper analyzes determinants of ex-manufacturer prices for originator and generic drugs across counmalaria in middle and low-income countries (MLICs), with robustness checks to other therapeutic categories and the full income range of countries. We examine the effects of per capita income, income dispersion, competition from originator and generic substitutes, and whether the drugs are sold to retail pharmacies versus tendered procurement by non-government organizations. The cross-national income elasticity of prices is 0.27 across the full income range of countries but is 0.0–0.10 between MLICs, implying that drugs are least affordable relative to income in the lowest income countries. Within-country income inequality contributes to relatively high prices in MLICs. Although generics are priced roughly 30% lower than originators on average, the variance is large. Additional generic competitors only weakly affect prices, plausibly because generic quality uncertainty leads to competition on brand rather than price. Tendered procurement that imposes quality standards attracts multinational generic suppliers and significantly reduces prices of originator and generic drugs, compared with their respective prices to retail pharmacies. ©2013 The Authors. Health Economics Published by John Wiley & Sons Ltd.

## CAUSES FOR CONCERN: IS NICE FAILING TO UPHOLD ITS RESPONSIBILITIES TO ALL NHS PATIENTS?

 Health Economics---2015---Karl Claxton, Mark Sculpher, Stephen Palmer, Anthony Culyer

ABSTRACT Organisations across diverse health care systems making decisions about the funding of new medical technologies face extensive stakeholder and political pressures. As a consequence, there is quite understandable pressure to take account of other attributes of benefit and to fund technologies, even when the opportunity costs are likely exceed the benefits they offer. Recent evidence suggests that NICE technology appraisal is already approving drugs where more health is likely to be lost than gained. Also, NICE recently proposed increasing the upper bound of the cost-effectiveness threshold to reflect other attributes

tries. We focus on drugs to treat HIV/AIDS, TB, and of benefit but without a proper assessment of the type malaria in middle and low-income countries (MLICs), of benefits that are expected to be displaced. It apwith robustness checks to other therapeutic categories pears that NICE has taken a direction of travel, which and the full income range of countries. We examine means that more harm than good is being, and will continue to be, done, but it is unidentified NHS pacompetition from originator and generic substitutes, tients who bear the real opportunity costs. Copyright and whether the drugs are sold to retail pharmacies © 2014 John Wiley & Sons, Ltd.

# SELF-PERCEIVED JOB INSECURITY AND THE DEMAND FOR MEDICAL REHABILITATION: DOES FEAR OF UNEMPLOYMENT REDUCE HEALTH CARE UTILIZATION?

• Health Economics---2015---Arndt Reichert, Boris Augurzky, Harald Tauchmann

ABSTRACT An inverse relationship between job insecurity and sickness absence has been established in the literature, which is explained by employees avoiding to send signals of both poor health and uncooperative behavior towards the employer. In this paper, we focus on whether the same mechanism applies to the demand for medical rehabilitation measures. This question has recently gained much interest in the context of the current public debate on presenteeism. Using county-level unemployment rates as instrument for the employees' fear of job loss on the individual level, we find that an increase in subjective job insecurity substantially decreases the probability of participating in medical rehabilitation. Copyright © 2013 John Wiley & Sons, Ltd.

### EFFECTS OF BICYCLE HELMET LAWS ON CHILDREN'S INJURIES

 Health Economics---2015---Sara Markowitz, Pinka Chatterji

ABSTRACT In recent years, many states and localities in the USA have enacted bicycle helmet laws. We estimate the effects of these laws on injuries requiring emergency department treatment. Using hospital-level panel data and triple difference models, we find helmet laws are associated with reductions in bicycle-related head injuries among children. However, laws also are associated with decreases in non-head cycling injuries,

as well as increases in head injuries from other wheeled sports. Thus, the observed reduction in bicycle-related head injuries may be due to reductions in bicycle riding induced by the laws. Copyright © 2013 John Wiley & Sons, Ltd.

# INTER-PROVIDER COMPARISON OF PATIENT-REPORTED OUTCOMES: DEVELOPING AN ADJUSTMENT TO ACCOUNT FOR DIFFERENCES IN PATIENT CASE MIX

• Health Economics---2015---David Nuttall, David Parkin, Nancy Devlin

ABSTRACT This paper describes the development of a methodology for the case-mix adjustment of patientreported outcome measures (PROMs) data permitting the comparison of outcomes between providers on a like-for-like basis. Statistical models that take account of provider-specific effects form the basis of the proposed case-mix adjustment methodology. Indirect standardisation provides a transparent means of case mix adjusting the PROMs data, which are updated on a monthly basis. Recently published PROMs data for patients undergoing unilateral knee replacement are used to estimate empirical models and to demonstrate the application of the proposed case-mix adjustment methodology in practice. The results are illustrative and are used to highlight a number of theoretical and empirical issues that warrant further exploration. For example, because of differences between PROMs instruments, case-mix adjustment methodologies may require instrument-specific approaches. A number of key assumptions are made in estimating the empirical models, which could be open to challenge. The covariates of post-operative health status could be expanded, and alternative econometric methods could be employed. © 2013 Crown copyright.

# IS THE MEDICAL LOSS RATIO A GOOD TARGET MEASURE FOR REGULATION IN THE INDIVIDUAL MARKET FOR HEALTH INSURANCE?

• Health Economics---2015---Pinar Karaca-Mandic, Jean M. Abraham, Kosali Simon

ABSTRACT Effective January 1, 2011, individual market health insurers must meet a minimum medical loss ratio (MLR) of 80%. This law aims to encourage 'productive' forms of competition by increasing the proportion of premium dollars spent on clinical benefits. To date, very little is known about the performance of firms in the individual health insurance market, including how MLRs are related to insurer and market characteristics. The MLR comprises one component of the price-cost margin, a traditional gauge of market power; the other component is percent of premiums spent on administrative expenses. We use data from the National Association of Insurance Commissioners (2001–2009) to evaluate whether the MLR is a good target measure for regulation by comparing the two components of the price-cost margin between markets that are more competitive versus those that are not, accounting for firm and market characteristics. We find that insurers with monopoly power have lower MLRs. Moreover, we find no evidence suggesting that insurers' administrative expenses are lower in more concentrated insurance markets. Thus, our results are largely consistent with the interpretation that the MLR could serve as a target measure of market power in regulating the individual market for health insurance but with notable limited ability to capture product and firm heterogeneity. Copyright © 2013 John Wiley & Sons, Ltd.

## MEASURING OVERFITTING IN NONLINEAR MODELS: A NEW METHOD AND AN APPLICATION TO HEALTH EXPENDITURES

 Health Economics---2015---Marcel Bilger, Willard Manning

SUMMARY When fitting an econometric model, it is well known that we pick up part of the idiosyncratic characteristics of the data along with the systematic relationship between dependent and explanatory variables. This phenomenon is known as overfitting and generally occurs when a model is excessively complex relative to the amount of data available. Overfitting is a major threat to regression analysis in terms of both inference and prediction. We start by showing that

the Copas measure becomes confounded by shrinkage or expansion arising from in-sample bias when applied to the untransformed scale of nonlinear models, which is typically the scale of interest when assessing behaviors or analyzing policies. We then propose a new measure of overfitting that is both expressed on the scale of interest and immune to this problem. We also show how to measure the respective contributions of in-sample bias and overfitting to the overall predictive bias when applying an estimated model to new data. We finally illustrate the properties of our new measure through both a simulation study and a real-data illustration based on inpatient healthcare expenditure data, which shows that the distinctions can be important. Copyright © 2013 John Wiley & Sons, Ltd.

### PAYMENTS, PROMOTION, AND THE PURPLE PILL

• Health Economics---2015---David Ridley

SUMMARY Understanding competition in the US drug market requires knowing how sensitive demand is to prices. The relevant prices for insured consumers are copayments. There are many studies of copayment elasticity in the health literature, but they are of limited applicability for studies of competition. Because of a paucity of data, such studies typically control for neither competitor copayment nor advertising. Whereas previous studies examined copayment sensitivity when copayments for branded drugs move in unison, this study examines copayment sensitivity when copayments diverge. This study uses unique panel data of insurance copayments and utilization for 77 insurance groups, as well as data on advertising. The results indicate that demand can be much more sensitive to copayment than previously recognized. Manufacturers selling drugs with higher copayments than branded competitors can lose substantial market share. Manufacturers can offset the loss of demand by increasing advertising to physicians, but it is costly. Copyright © 2013 John Wiley & Sons, Ltd.

### THE POVERTY EFFECTS OF A 'FAT-TAX' IN IRELAND

• Health Economics---2015---David Madden

ABSTRACT To combat growing levels of obesity, health-related taxes have been suggested with taxes on foods high in fat or sugar. Such taxes have been criticised on the basis of their regressivity and potentially adverse impact upon poverty. This paper analyses the effect of such taxes on a range of poverty measures and also examines the effect of a revenue-neutral tax subsidy mixed with a tax on unhealthy food combined with a subsidy on more healthy food. Using Irish expenditure data, the results indicate that taxes on high fat/sugar goods on their own will be regressive but that a tax-subsidy combination can be broadly neutral with respect to poverty. Copyright © 2013 John Wiley & Sons, Ltd.

## Towards Explaining International Differences in Health Care Performance: Results of the EuroHOPE Project

 Health Economics---2015---Unto Häkkinen, Tor Iversen, Mikko Peltola, Clas Rehnberg, Timo T. Seppälä

2015

### Transitioning Between 'The Old' and 'The New' Long-Term Care Systems

 Health Economics---2015---Joan Costa-Font, Jose Luis Fernandez, Katherine Swartz, Joan Costa-i-Font

2015

### The Causal Effects of Home Care Use on Institutional Long-Term Care Utilization and Expenditures

• Health Economics---2015---Jing Guo, R. Tamara Konetzka, Willard Manning

Limited evidence exists on whether expanding home care saves money overall or how much institutional longterm care can be reduced. This paper estimates the

causal effect of Medicaid-financed home care services on the costs and utilization of institutional long-term care using Medicaid claims data. A unique instrumental variable was applied to address the potential bias caused by omitted variables or reverse effect of institutional care use. We find that the use of Medicaidfinanced home care services significantly reduced but only partially offset utilization and Medicaid expenditures on nursing facility services. A \$1000 increase in Medicaid home care expenditures avoided 2.75 days in nursing facilities and reduced annual Medicaid nursing facility costs by \$351 among people over age 65 when selection bias is addressed. Failure to address selection biases would misestimate the substitution and offset effects. Copyright © 2015 John Wiley & Sons, Ltd.

#### **Comparative Analysis of Treatment Costs in EUROHOPE**

• Health Economics---2015---Tor Iversen, Eline Aas, Gunnar Rosenqvist, Unto Häkkinen

This study examines the challenges of estimating riskadjusted treatment costs in international comparative research, specifically in the European Health Care Outcomes, Performance, and Efficiency (EuroHOPE) project. We describe the diverse format of resource data and challenges of converting these data into resource use indicators that allow meaningful crosscountry comparisons. The three cost indicators developed in EuroHOPE are then described, discussed, and applied. We compare the risk-adjusted mean treatment costs of acute myocardial infarction for four of the seven countries in the EuroHOPE project, namely, Finland, Hungary, Norway, and Sweden. The outcome of the comparison depends on the time perspective as well as on the particular resource use indicator. We argue that these complementary indicators add to our understanding of the variation in resource use across countries. Copyright © 2015 John Wiley & Sons, Ltd. variation in hospital costs. A cohort of patients with

### **Explaining Declining Rates of Institutional LTC** Use in the Netherlands: A Decomposition **Approach**

• Health Economics---2015---Claudine Meijer, Pieter Bakx, Eddy Doorslaer, Marc Koopmanschap

The use of long-term care (LTC) is changing rapidly. In the Netherlands, rates of institutional LTC use are falling, whereas homecare use is growing. Are these changes attributable to declining disability rates, or has LTC use given disability changed? And have institutionalization rates fallen regardless of disability level, or has LTC use become better tailored to needs? We answer these questions by explaining trends in LTC use for the Dutch 65+ population in the period 2000–2008 using a nonlinear variant of the Oaxaca-Blinder decomposition. We find that changes in LTC use are not due to shifts in the disability distribution but can almost entirely be traced back to changes in the way the system treats disability. Elderly with mild disability are more likely to be treated at home than before, whereas severely disabled individuals continue to receive institutional LTC. As a result, LTC use has become better tailored to the needs for such care. This finding suggests that policies that promote LTC in the community rather than in institutions can effectively mitigate the consequences of population aging on LTC spending. Copyright © 2015 John Wiley & Sons, Ltd.

### **Parameter Heterogeneity In Breast Cancer Cost** Regressions - Evidence From Five European **Countries**

• Health Economics---2015---Joel Smith, Helen Banks, Harry Campbell, Anne Douglas, Eilidh Fletcher, Alison McCallum, Tron Anders Moger, Mikko Peltola, Sofia Sveréus, Sarah Wild, Linda J. Williams, John Forbes

We investigate parameter heterogeneity in breast cancer 1-year cumulative hospital costs across five European countries as part of the EuroHOPE project. The paper aims to explore whether conditional mean effects provide a suitable representation of the national

a primary diagnosis of invasive breast cancer (ICD-9 codes 174 and ICD-10 C50 codes) is derived using routinely collected individual breast cancer data from Finland, the metropolitan area of Turin (Italy), Norway, Scotland and Sweden. Conditional mean effects are estimated by ordinary least squares for each country, and quantile regressions are used to explore heterogeneity across the conditional quantile distribution. Point estimates based on conditional mean effects provide a good approximation of treatment response for some key demographic and diagnostic specific variables (e.g. age and ICD-10 diagnosis) across the conditional quantile distribution. For many policy variables of interest, however, there is considerable evidence of parameter heterogeneity that is concealed if decisions are based solely on conditional mean results. The use of quantile regression methods reinforce the need to consider beyond an average effect given the greater recognition that breast cancer is a complex disease reflecting patient heterogeneity. Copyright © 2015 John Wiley & Sons, Ltd.

### **Testing the Bed-Blocking Hypothesis: Does Nursing and Care Home Supply Reduce Delayed Hospital Discharges?**

• Health Economics---2015---James Gaughan, Hugh Gravelle, Luigi Siciliani

Hospital bed-blocking occurs when hospital patients are ready to be discharged to a nursing home, but no place is available, so that hospital care acts as a more costly substitute for long-term care. We investigate the extent to which greater supply of nursing home beds or lower prices can reduce hospital bed-blocking using a new Local Authority (LA) level administrative data from England on hospital delayed discharges in 2009–2013. The results suggest that delayed discharges respond to the availability of care home beds, but the effect is modest: an increase in care home beds by 10% (250 additional beds per LA) would reduce social care delayed discharges by about 6–9%. We also find strong evidence of spillover effects across LAs: more care home beds or fewer patients aged over 65 years in nearby LAs are associated with fewer delayed discharges. © This paper attempts to examine the heterogeneity in

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### Individual and Regional-level Factors Contributing to Variation in Length of Stay After **Cerebral Infarction in Six European Countries**

• Health Economics---2015---Mikko Peltola, Timo T. Seppälä, Antti Malmivaara, Éva Belicza, Dino Numerato, Fanny Goude, Eilidh Fletcher, Richard Heijink

Using patient-level data for cerebral infarction cases in 2007, gathered from Finland, Hungary, Italy, the Netherlands, Scotland and Sweden, we studied the variation in risk-adjusted length of stay (LoS) of acute hospital care and 1-year mortality, both within and between countries. In addition, we analysed the variance of LoS and associations of selected regional-level factors with LoS and 1-year mortality after cerebral infarction. The data show that LoS distributions are surprisingly different across countries and that there is significant deviation in the risk-adjusted regional-level LoS in all of the countries studied. We used negative binomial regression to model the individual-level LoS, and random intercept models and ordinary least squares regression for the regional-level analysis of riskadjusted LoS, variance of LoS, 1-year risk-adjusted mortality and crude mortality for a period of 31–365 days. The observed variations between regions and countries in both LoS and mortality were not fully explained by either patient-level or regional-level factors. The results indicate that there may exist potential for efficiency gains in acute hospital care of cerebral infarction and that healthcare managers could learn from best practices. Copyright © 2015 John Wiley & Sons, Ltd.

#### Financing Long-Term Care: Ex Ante, Ex Post or Both?

• Health Economics---2015---Joan Costafont, Christophe Courbage, Katherine Swartz, Joan Costa-i-Font

the public financing of long-term care (LTC) and the wide-ranging instruments in place to finance LTC services. We distinguish and classify the institutional responses to the need for LTC financing as ex ante (occurring prior to when the need arises, such as insurance) and ex post (occurring after the need arises, such as public sector and family financing). Then, we examine country-specific data to ascertain whether the two types of financing are complements or substitutes. Finally, we examine exploratory cross-national data on public expenditure determinants, specifically economic, demographic and social determinants. We show that although both ex ante and ex post mechanisms exist in all countries with advanced industrial economies and despite the fact that instruments are different across countries, ex ante and ex post instruments are largely substitutes for each other. Expenditure estimates to date indicate that the public financing of LTC is highly sensitive to a country's income, ageing of the population and the availability of informal caregiving. Copyright © 2015 John Wiley & Sons, Ltd.

#### European Regional Differences in All-Cause Mortality and Length of Stay for Patients with Hip Fracture

 Health Economics---2015---Emma Medin, Fanny Goude, Hans Olav Melberg, Fabrizio Tediosi, Eva Belicza, Mikko Peltola

2015

### Family Structure and Long-Term Care Insurance Purchase

• Health Economics---2015---Courtney Van Houtven, Norma Coe, R. Tamara Konetzka

While it has long been assumed that family structure and potential sources of informal care play a large role in the purchase decisions for long-term care insurance (LTCI), current empirical evidence is inconclusive. Our study examines the relationship between family structure and LTCI purchase and addresses several major limitations of the prior literature by using a long panel of data and considering modern family relationships,

such as the presence of stepchildren. We find that family structure characteristics from one's own generation, particularly about one's spouse, are associated with purchase, but that few family structure attributes from the younger generation have an influence. Family factors that may indicate future caregiver supply are negatively associated with purchase: having a coresidential child, signaling close proximity, and having a currently working spouse, signaling a healthy and able spouse, that long-term care planning has not occurred yet or that there is less need for asset protection afforded by LTCI. Dynamic factors, such as increasing wealth or turning 65, are associated with higher likelihood of LTCI purchase. Copyright © 2015 John Wiley & Sons, Ltd.

### Variations and Determinants of Mortality and Length of Stay of Very Low Birth Weight and Very Low for Gestational Age Infants in Seven European Countries

 Health Economics---2015---Giovanni Fatttore, Dino Numerato, Mikko Peltola, Helen Banks, Rebecca Graziani, Richard Heijink, Eelco Over, Søren Toksvig Klitkou, Eilidh Fletcher, Péter Mihalicza, Sofia Sveréus

The EuroHOPE very low birth weight and very low for gestational age infants study aimed to measure and explain variation in mortality and length of stay (LoS) in the populations of seven European nations (Finland, Hungary, Italy (only the province of Rome), the Netherlands, Norway, Scotland and Sweden). Data were linked from birth, hospital discharge and mortality registries. For each infant basic clinical and demographic information, infant mortality and LoS at 1 year were retrieved. In addition, socio-economic variables at the regional level were used. Results based on 16 087 infants confirm that gestational age and Apgar score at 5 min are important determinants of both mortality and LoS. In most countries, infants admitted or transferred to third-level hospitals showed lower probability of death and longer LoS. In the meta-analyses, the combined estimates show that being male, multiple births, presence of malformations, per capita income and low population density are significant risk factors for death. It is essential that national policies improve the quality of administrative datasets and address systemic problems in assigning identification numbers at birth. European policy should aim at improving the comparability of data across jurisdictions. Copyright © 2015 John Wiley & Sons, Ltd.

### **Crowding Out of Long-Term Care Insurance: Evidence from European Expectations Data**

• Health Economics---2015---Joan Costa-Font, Christophe Courbage, Joan Costa-i-Font

Long-term care (LTC) is the largest insurable risk that old-age individuals face in most western societies. However, the demand for LTC insurance is still ostensibly small in comparison with the financial risk. One explanation that has received limited support is that expectations of either 'public sector funding' and 'family support' crowd out individual incentives to seek insurance. This paper aims to investigate further the aforementioned motivational crowding-out hypothesis by developing a theoretical model and by drawing on an innovative empirical analysis of representative European survey data containing records on individual expectations of LTC funding sources (including private insurance, social insurance, and the family). The theoretical model predicts that, when informal care is treated as exogenously determined, expectations of both state support and informal care can potentially crowd out LTC insurance expectations, while this is not necessarily the case when informal care is endogenous to insurance, as happens when intra-family moral hazard is integrated in the insurance decision. We find evidence consistent with the presence of family crowding out but no robust evidence of public sector crowding out. Copyright © 2015 John Wiley & Sons, Ltd.

### Acute Myocardial Infarction, Use of Percutaneous Coronary Intervention, and Mortality: A Comparative Effectiveness Analysis Covering Seven European Countries

• Health Economics---2015---Terje P. Hagen, Unto Häkkinen, Eva Belicza, Giovanni Fatore, Fanny Goude

Percutaneous coronary interventions (PCI) on acute myocardial infarction (AMI) patients have increased substantially in the last 12-15 years because of its clinical effectiveness. The expansion of PCI treatment for AMI patients raises two questions: How did PCI utilization rates vary across European regions, and which healthcare system and regional characteristic variables correlated with the utilization rate? Were the differences in use of PCI associated with differences in outcome, operationalized as 30-day mortality? We obtained our results from a dataset based on the administrative information systems of the populations of seven European countries. PCI rates were highest in the Netherlands, followed by Sweden and Hungary. The probability of receiving PCI was highest in regions with their own PCI facilities and in healthcare systems with activity-based reimbursement systems. Thirtyday mortality rates differed considerably between the countries with the highest rates in Hungary, Scotland, and Finland. Mortality was lowest in Sweden and Norway. The associations between PCI and mortality were remarkable in all age groups and across most countries. Despite extensive risk adjustment, we interpret the associations both as effects of selection and treatments. We observed a lower effect of PCI in the higher age groups in Hungary. Copyright © 2015 John Wiley & Sons, Ltd.

### Informal Care Motivations and Intergenerational Transfers in European Countries

 Health Economics---2015---Sergi Jiménez-Martín, Cristina Vilaplana Prieto, Sergi Jimenez-Martin

This work sets out to analyze the motivations adult children may have to provide informal care, considering the monetary transfers they receive from their parents. Traditional motivations, such as altruism and exchange, are matched against more recent social bond theories. Our findings indicate that informal caregivers receive less frequent and less generous transfers than non-caregivers; that is, caregivers are more prone to suppress their self-interested motivations in order to prioritize the well being of another person. Additionally, long-term public care benefits increase both the probability of receiving a transfer and its amount, with this effect being more intense for both the poorest and richest households. Our findings suggest that if long-term care benefits are intended to increase the recipients' welfare and represent a higher fraction of total income for the poorest households, the effectiveness of these long-term care policies may be diluted. Copyright © 2015 John Wiley & Sons, Ltd.

### Socio-economic Inequality in the Use of **Procedures and Mortality Among AMI Patients: Quantifying the Effects Along Different Paths**

• Health Economics---2015---Terje P. Hagen, Unto Häkkinen, Tor Iversen, Søren Toksvig Klitkou, Tron Anders Moger

It is not known whether inequality in access to cardiac procedures translates into inequality in mortality. In this paper, we use a path analysis model to quantify both the direct effect of socio-economic status on mortality and the indirect effect of socio-economic status on mortality as mediated by the provision of cardiac procedures. The study links microdata from the Finnish and Norwegian national patient registers describing treatment episodes with data from prescription registers, causes-of-death registers and registers covering education and income. We show that socio-economic variables affect access to percutaneous coronary intervention in both countries, but that these effects are only moderate and that the indirect effects of the socio-economic factors on mortality through access to percutaneous coronary intervention are minor. The direct effects of income and education on mortality are significantly larger. We conclude that the socio- The aim of the present study was to compare the qualeconomic gradient in the use of percutaneous coronary ity (survival), use of resources and their relationship

intervention adds to socio-economic differences in mortality to little or no extent. Copyright © 2015 John Wiley & Sons, Ltd.

#### The Effect of Free Personal Care for the Elderly on Informal Caregiving

• Health Economics---2015---Sarah Karlsberg Schaffer

Population forecasters have predicted that the proportion of people in the UK aged 65 years and older will rise significantly in coming decades. This shift in demographics will put increasing pressure on the National Health Service and providers of social care. However, older people do not rely only on care provided by the state; informal care of the elderly is often supplied by family and friends. Therefore, the relationship between formal and informal care and the reaction of informal carers to institutional changes is an important policy issue. This study uses individual level data from the British Household Panel Survey to estimate the effects of the introduction of free personal care for the elderly in Scotland on informal care behaviour. As the change in policy applied only to Scotland, a natural experiment is formed allowing a difference-in-differences approach to be used. This paper finds that the introduction of the policy increased the probability of women supplying informal care by around six percentage points. In addition, for both sexes, it reports evidence of a shift away from the upper and lower tails towards the middle of the hours of care distribution as a result of the change in policy. Copyright © 2015 John Wiley & Sons, Ltd.

### Outcome, Use of Resources and Their Relationship in the Treatment of AMI, Stroke and **Hip Fracture at European Hospitals**

Economics---2015---Unto Häkki-• Health nen,Gunnar Rosenqvist, Tor Iversen, Clas Rehnberg, Timo T. Seppälä

ocardial infarction (AMI), stroke and hip fracture), in hospitals in five European countries (Finland, Hungary, Italy, Norway and Sweden). The comparison of quality and use of resources was based on hospital-level random effects models estimated from patient-level data. After examining quality and use of resources separately, we analysed whether a cost-quality tradeoff existed between the hospitals. Our results showed notable differences between hospitals and countries in both survival and use of resources. Some evidence would support increasing the horizontal integration: higher degrees of concentration of regional AMI care were associated with lower use of resources. A positive relation between cost and quality in the care of AMI patients existed in Hungary and Finland. In the care of stroke and hip fracture, we found no evidence of a cost-quality trade-off. Thus, the cost-quality association was inconsistent and prevailed for certain treatments or patient groups, but not in all countries. Copyright © 2015 John Wiley & Sons, Ltd.

### **Practice Patterns among Entrants and** Incumbents in the Home Health Market after the **Prospective Payment System was Implemented**

• Health Economics---2015---Hyunjee Kim, Edward Norton

2015

#### The Determinants of Care Home Closure

• Health Economics---2015---Stephen Allan, Julien Forder

This study investigates the causes of full closure of care homes in the English care home/nursing home market. We develop theoretical arguments about two causes for closure that are triggered by errors or external shocks: poor economic sustainability and regulatory action. Homes aiming to operate with lower quality in the market are argued for a number of reasons to be more susceptible to errors/shocks in setting quality, especially negative errors, leading to an empirical hypothesis that observed quality should negatively affect

in the treatment of three major conditions (acute my-closure chance. In addition, given quality, homes facing relatively high levels of local competition should also have an increased chance of closure. We use a panel of care homes from 2008 and 2010 to examine factors affecting their closure status in subsequent years. We allow for the potential endogeneity of home quality and use multiple imputation to replace missing data. Results suggest that homes with comparatively higher quality and/or lower levels of competition have less chance of closure than other homes. We discuss that the results provide some support for the policy of regulators providing quality information to potential purchasers in the market. © 2015 The Authors. Health Economics published by John Wiley & Sons Ltd.

#### Costs and Quality at the Hospital Level in the **Nordic Countries**

• Health Economics---2015---Sverre Kittelsen, Kjartan S. Anthun, Fanny Goude, Ingrid M. S. Huitfeldt, Unto Häkkinen, Marie Kruse, Emma Medin, Clas Rehnberg, Hanna Rättö

This article develops and analyzes patient registerbased measures of quality for the major Nordic countries. Previous studies show that Finnish hospitals have significantly higher average productivity than hospitals in Sweden, Denmark, and Norway and also a substantial variation within each country. This paper examines whether quality differences can form part of the explanation and attempts to uncover quality-cost trade-offs. Data on costs and discharges in each diagnosis-related group for 160 acute hospitals in 2008–2009 were collected. Patient register-based measures of quality such as readmissions, mortality (in hospital or outside), and patient safety indices were developed and case-mix adjusted. Productivity is estimated using bootstrapped data envelopment analysis. Results indicate that casemix adjustment is important, and there are significant differences in the case-mix adjusted performance measures as well as in productivity both at the national and hospital levels. For most quality indicators, the performance measures reveal room for improvement. There is a weak but statistical significant trade-off between productivity and inpatient readmissions within

day mortality also have higher costs. Hence, no clear cost-quality trade-off pattern was discovered. Patient registers can be used and developed to improve future quality and cost comparisons. Copyright © 2015 John Wiley & Sons, Ltd.

### **Local Variability in Long-Term Care Services:** Local Autonomy, Exogenous Influences and **Policy Spillovers**

• Health Economics---2015---Jose Luis Fernandez.Julien Forder

In many countries, public responsibility over the funding and provision of long-term care services is held at the local level. In such systems, long-term care provision is often characterised by significant local variability. Using a panel dataset of local authorities over the period 2002–2012, the paper investigates the underlying causes of variation in gross social care expenditure for older people in England. The analysis distinguishes between factors outside the direct control of policy makers, local preferences and local policy spillovers. The results indicate that local demand and supply factors, and to a much lesser extent local political preferences and spatial policy spillovers, explain a large majority of the observed variation in expenditure. Copyright © 2015 John Wiley & Sons, Ltd.

#### A Window on Geographic Variation in Health **Care: Insights from EuroHOPE**

• Health Economics---2015---Richard Heijink, Peter Engelfriet, Clas Rehnberg, Sverre Kittelsen, Unto Häkkinen

The aim of EuroHOPE was to provide new evidence on the performance of healthcare systems, using a diseasebased approach, linkable patient-level data and internationally standardized methods. This paper summarizes its main results. In the seven EuroHOPE countries, the Acute Myocardial Infarction (AMI), stroke and hip fracture patient populations were similar with regard to age, sex and comorbidity. However, non-negligible geographic variation in mortality and resource use was

30 days but a tendency that hospitals with high 30- found to exist. Survival rates varied to similar extents between countries and regions for AMI, stroke, hip fracture and very low birth weight. Geographic variation in length of stay differed according to type of disease. Regression analyses showed that only a small part of geographic variation could be explained by demand and supply side factors. Furthermore, the impact of these factors varied between countries. The findings show that there is room for improvement in performance at all levels of analysis and call for more in-depth disease-based research. In using international patient-level data and a standardized methodology, the EuroHOPE approach provides a promising steppingstone for future investigations in this field. Still, more detailed patient and provider information, including outside of hospital care, and better data sharing arrangements are needed to reach a more comprehensive understanding of geographic variations in health care. Copyright © 2015 John Wiley & Sons, Ltd.

### THE IMPACT OF TOBACCO CONTROL **EXPENDITURES ON SMOKING INITIATION AND CESSATION**

• Health Economics---2014---Joachim Marti

SUMMARY Between 1997 and 2007, smoking prevalence declined from 33% to 28% in Switzerland. Over the same period, funding for tobacco control activities significantly increased, resulting in the implementation of a large variety of national and regional interventions. In this paper, I exploit variation over time and across cantons of tobacco control expenditures to examine the impact of these policies on smoking decisions. I use retrospective smoking information from the Swiss Health Survey (2007) and find that tobacco control expenditures decreased the probability of smoking initiation among adolescents and young adults and increased cessation rates in the general population of smokers. I estimate that if funding had been kept at the 1997 level, there would have been 107,000 additional smokers in 2007. Copyright © 2013 John Wiley & Sons, Ltd.

#### HEALTHY AND UNHEALTHY ASSIMILATION: COUNTRY OF ORIGIN AND SMOKING BEHAVIOR AMONG IMMIGRANTS

• Health Economics---2014---Leigh Ann Leung

ABSTRACT Smoking rates in the country of origin were used to empirically examine whether immigrants converge toward natives' level of smoking prevalence with assimilation. Results show that assimilation is associated with a lower likelihood of ever quitting smoking for immigrants from countries with lower smoking rates relative to the USA and a higher likelihood for immigrants from countries with higher smoking rates, but for current or ever smoking, the estimated effects of assimilation are statistically insignificant. Although these findings demonstrate that health assimilation depends on the country of origin, the extent to which this pattern of assimilation is due to peer influence, differences in responsiveness to anti-smoking interventions such as taxes or smoke-free air restrictions, and/or other factors remains unclear because of the limitations of this study. Copyright © 2013 John Wiley & Sons, Ltd.

### CHILD-TO-TEACHER RATIO AND DAY CARE TEACHER SICKNESS ABSENTEEISM

Health Economics---2014---Mette G
ørtz, Elvira Andersson

ABSTRACT The literature on occupational health points to work pressure as a trigger of sickness absence. However, reliable, objective measures of work pressure are in short supply. This paper uses Danish day care teachers as an ideal case for analysing whether work pressure measured by the child-to-teacher ratio, that is, the number of children per teacher in an institution, affects teacher sickness absenteeism. We control for individual teacher characteristics, workplace characteristics, and family background characteristics of the children in the day care institutions. We perform estimations for two time periods, 2002–2003 and 2005–2006, by using generalized method of moments with lagged levels of the child-to-teacher ratio as instrument. Our estimation results are somewhat mixed.

Generally, the results indicate that the child-to-teacher ratio is positively related to short-term sickness absence for nursery care teachers, but not for preschool teachers. Copyright © 2013 John Wiley & Sons, Ltd.

### TIME DISCOUNTING AND SMOKING BEHAVIOR: EVIDENCE FROM A PANEL SURVEY-super-

• Health Economics---2014---Myong-II Kang,Shinsuke Ikeda

ABSTRACT By using a panel survey of Japanese adults, we show that smoking behavior is associated with personal time discounting and its biases, such as hyperbolic discounting and the sign effect, in the way that theory predicts: smoking depends positively on the discount rate and the degree of hyperbolic discounting and negatively on the presence of the sign effect. Positive effects of hyperbolic discounting on smoking are salient for naïve people, who are not aware of their self-control problem. By estimating smoking participation and smokers' cigarette consumption in Cragg's two-part model, we find that the two smoking decisions depend on different sets of time-discounting variables. Particularly, smoking participation is affected by being a naïve hyperbolic discounter, whereas the discount rate, the presence of the sign effect, and a hyperbolic discounting proxy constructed from procrastination behavior vis-à-vis doing homework assignments affect both types of decision making. The panel data enable us to analyze the over-time instability of elicited discount rates. The instability is shown to come from measurement errors, rather than preference shocks on time preference. Several evidences indicate that the detected associations between time preferences and smoking behavior are interpersonal one, rather than within-personal one. Copyright © 2013 John Wiley & Sons, Ltd.

### CAN DATA ENVELOPMENT ANALYSIS PROVIDE A SCALAR INDEX OF 'VALUE'?

• Health Economics---2014---Bryan Dowd, Tami Swenson, Robert Kane, Shriram Parashuram, Robert Coulam ABSTRACT The concept of 'value' typically in- THE ROLE OF TIME PREFERENCES IN THE cludes a combination of cost and quality measures. Some approaches to incorporating value into payment systems treat cost and quality as separate dimensions, but policymakers have expressed interest in a single scalar index that combines cost and quality. Treating risk-adjusted cost as an input and multiple measures of quality as outputs, we examine whether data envelopment analysis input efficiency is associated with higher quality and lower cost in a sample of physician practices using 2008 US Medicare claims data from Colorado. The findings suggest that input efficiency might provide a useful scalar measure of value for a value-based payment system for physician services. Copyright © 2013 John Wiley & Sons, Ltd.

#### **REGIONAL VARIATION IN THE UTILISATION OF AMBULATORY SERVICES IN GERMANY**

• Health Economics---2014---Thomas Kopetsch, Hendrik Schmitz

ABSTRACT We used an administrative dataset covering approximately 90% of all Germans to investigate the determinants of regional differences in the utilisation of ambulatory services in the year 2008. There are great regional differences in Germany, in GP, specialist and psychotherapist consultations. By means of a regression model taking account of the spatial dependencies of the error terms, we can explain a considerable part of the variation in terms of differences in demography, health status and socio-economic features. In addition, we made use of data on pollutants, the supply of services and the number of hospital cases as explanatory variables, which all have a significant influence on utilisation but contribute considerably less to explaining the differences. Overall, we are in a position to explain 29–40% of the regional differences in ambulatory case numbers at the level of the 413 counties and 55–70% at the level of the 16 German states (Länder) by observable differences. Copyright © 2013 John Wiley & Sons, Ltd.

### INTERGENERATIONAL TRANSFER OF SMOKING

• Health Economics---2014---Heather Brown, Marjon Pol

ABSTRACT Evidence suggests that maternal and offspring smoking behaviour is correlated. Little is known about the mechanisms through which this intergenerational transfer occurs. This paper explores the role of time preferences. Although time preference is likely to be heritable and correlated with health investments, its role in the intergenerational transmission of smoking has not been explored previously. This is the first paper to empirically test this. Data (2002, 2003, 2004, 2006 and 2008) from the Household, Income and Labour Dynamics in Australia are used. Estimates by using a pooled probit model show that there is not a direct effect of maternal time preference, measured in terms of financial planning horizon, on the likelihood that their offspring is a smoker. However, there is an indirect effect of maternal time preference. Sons of mothers that are smokers and have a shorter planning horizon are 6% more likely to smoke than if their mother had a longer planning horizon, and daughters of mothers that smoke with a shorter planning horizon are 7% more likely to smoke themselves than if their mother had a longer planning horizon. © 2013 The Authors. Health Economics published by John Wiley & Sons Ltd.

#### THE EFFECT OF SEX RATIOS ON SUICIDE

• Health Economics---2014---Masanori Kuroki

SUMMARY Whereas sex ratios are likely to affect the likelihood of marriage, how sex ratios affect health and survival is underexplored. This study uses suicide as a measure of mental health and examines how suicides are affected by sex ratios. As women tend to marry men older than themselves, shrinking populations will lead to higher sex ratios (i.e., higher proportions of men) in the marriage market. Using data from Japan, I find that high sex ratios, both early-life and current, are correlated with higher male suicide rates, whereas female suicide rates are generally not affected. The

results of this study have important implications for public health in countries where imbalanced sex ratios are a concern. Copyright © 2013 John Wiley & Sons, Ltd.

## THE JANUARY EFFECT: MEDICATION REINITIATION AMONG MEDICARE PART D BENEFICIARIES

• Health Economics---2014---Cameron Kaplan, Yuting Zhang

ABSTRACT The Medicare prescription drug program (Part D) standard benefit includes deductible, initial coverage, coverage gap and catastrophic coverage phases. As beneficiaries enter each phase, their out-ofpocket medication costs change discontinuously. The benefit cycle restarts on 1 January of the next year. Taking advantage of variation in drug coverage, we study how individuals reinitiate discontinued medications in response to the non-linear price schedule. Because some beneficiaries who receive low-income subsidies (LIS) have zero or fixed small copayments throughout the year, we perform a difference-in-difference analysis by using the LIS group as a comparison. We find that individuals delay reinitiating important medications in December and are significantly more likely to reinitiate in January than in other months. Although we find some evidence that reinitiation is lower in the final months of the year, it is mostly driven by those who face higher prices due to the coverage gap. Our study suggests that individuals respond more to the current price of medications and do not anticipate future prices as well as theory would suggest. Copyright © 2013 John Wiley & Sons, Ltd.

## A PRESCRIPTION FOR UNEMPLOYMENT? RECESSIONS AND THE DEMAND FOR MENTAL HEALTH DRUGS

 Health Economics---2014---W. David Bradford, William D Lastrapes

ABSTRACT We estimate the relationship between mental health drug prescriptions and the level of labor market activity in the USA. Based on monthly data

from the National Ambulatory Medical Care Survey of physicians and aggregated by US census regions, we find that the number of mental health drug prescriptions (those aimed at alleviating depression and anxiety) rises by about 10% when employment falls by 1% and when unemployment rises by 100 basis points, but only for patients in the Northeast region. This paper is one of the first to look at compensatory health behavior in response to the business cycle. Copyright © 2013 John Wiley & Sons, Ltd.

### BANKRUPTCY, MEDICAL INSURANCE, AND A LAW WITH UNINTENDED CONSEQUENCES

• Health Economics---2014---Thomas G. Koch

ABSTRACT Congress passed the Emergency Medical Treatment and Active Labor Act (EMTALA) in 1986, guaranteeing a standard of medical care to anyone who entered an emergency room. This guarantee made default a more reliable substitute for medical insurance. I construct a tractable structural model of the medical insurance market and find that repealing EMTALA would increase the fraction of the population with insurance while decreasing its price. Copyright © 2013 John Wiley & Sons, Ltd.

# QUALITY-QUANTITY DECOMPOSITION OF INCOME ELASTICITY OF U.S. HOSPITAL CARE EXPENDITURE USING STATE-LEVEL PANEL DATA

 Health Economics---2014---Weiwei Chen, Albert Okunade, Gregory G. Lubiani

SUMMARY Economic theory suggests that income growth could lead to changes in consumption quantity and quality as the spending on a commodity changes. Similarly, the volume and quality of healthcare consumption could rise with incomes because of demographic changes, usage of innovative medical technologies, and other factors. Hospital healthcare spending is the largest component of aggregate US healthcare expenditures. The novel contribution of our paper is estimating and decomposing the income elasticity of

tity and quality components. By using a 1999–2008 panel dataset of the 50 US states, results from the seemingly unrelated regressions model estimation reveal the income elasticity of HOCEXP to be 0.427 (std. error = 0.044), with about 0.391 (calculated std. error = 0.044) arising from care quality improvements and 0.035 (std. error = 0.050) emanating from the rise in usage volume. Our novel research findings suggest the following: (i) the quantity part of hospital expenditure is inelastic to income change; (ii) almost the entire income-induced rise in hospital expenditure comes from care quality changes; and (iii) the 0.427

income elasticity of HOCEXP, the largest component

of total US healthcare expenditure, makes hospital care

a normal commodity and a much stronger technical ne-

cessity than aggregate healthcare. Policy implications

are discussed. Copyright © 2013 John Wiley & Sons,

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## WHERE THERE'S SMOKING, THERE'S FIRE: THE EFFECTS OF SMOKING POLICIES ON THE INCIDENCE OF FIRES IN THE USA

• Health Economics---2014---Sara Markowitz

ABSTRACT Fires and burns are among the leading causes of unintentional death in the USA. Most of these deaths occur in residences, and cigarettes are a primary cause. In this paper, I explore the relationship between smoking, cigarette policies, and fires. As smoking rates decline, there are fewer opportunities for fires; however, the magnitude of any reduction is in question. Using a state-level panel, I find that increases in cigarette prices are associated with fewer residential fires and deaths. However, laws regulating indoor smoking are associated with more fires; in particular, restaurant and bar smoking bans are associated with an increase in fires at eating and drinking establishments. This increase is important given the growing popularity of smoking bans in the USA and around the world. As workplaces, schools, and businesses ban smoking and remove ashtrays, smokers who continue to smoke are left without safe options for disposal of cigarettes, leading to more opportunities for fires to start. Copyright

hospital care expenditures (HOCEXP) into its quan- © 2013 John Wiley & Sons, Ltd.

### HAS INCREASED BODY WEIGHT MADE DRIVING SAFER?

• Health Economics---2014---Richard Dunn, Nathan Tefft

ABSTRACT We develop a model of alcohol consumption that incorporates the negative biological relationship between body mass and inebriation conditional on total alcohol consumption. Our model predicts that the elasticity of inebriation with respect to weight is equal to the own-price elasticity of alcohol, consistent with body mass increasing the effective price of inebriation. Given that alcohol is generally considered price inelastic, this result implies that as individuals gain weight, they consume more alcohol but become less inebriated. We test this prediction and find that driver blood alcohol content (BAC) is negatively associated with driver weight. In fatal accidents with driver BAC above 0.10, the driver was 7.8 percentage points less likely to be obese than drivers in fatal accidents that did not involve alcohol. This relationship is not explained by driver attributes (age and sex), driver behaviors (speed and seatbelt use), vehicle attributes (weight class, model year, and number of occupants), or accident context (county of accident, time of day, and day of week). Copyright © 2013 John Wiley & Sons, Ltd.

## UNDERSTANDING THE VERTICAL EQUITY JUDGEMENTS UNDERPINNING HEALTH INEQUALITY MEASURES

• Health Economics---2014---Paul Allanson, Dennis Petrie

ABSTRACT The choice of income-related health inequality measures in comparative studies is often determined by custom and analytical concerns, without much explicit consideration of the vertical equity judgements underlying alternative measures. This note employs an inequality map to illustrate how these judgements determine the ranking of populations by health

inequality. In particular, it is shown that relative indices of inequality in health attainments and shortfalls embody distinct vertical equity judgments, where each may represent ethically defensible positions in specific contexts. Further research is needed to explore people's preferences over distributions of income and health. Copyright © 2013 John Wiley & Sons, Ltd.

### A COUNTRY FOR OLD MEN? LONG-TERM HOME CARE UTILIZATION IN EUROPE

• Health Economics---2014---Silvia Balia,Rinaldo Brau

ABSTRACT This paper investigates long-term home care utilization in Europe. Data from the first wave of the Survey on Health, Ageing and Retirement (SHARE) on formal (nursing care and paid domestic help) and informal care (support provided by relatives) are used to study the probability and the quantity of both types of care. The overall process is framed in a fully simultaneous equation system that takes the form of a bivariate two-part model where the reciprocal interaction between formal and informal care is estimated. Endogeneity and unobservable heterogeneity are addressed using a common latent factor approach. The analysis of the relative impact of age and disability on home care utilization is enriched by the use of a proximity to death (PtD) indicator built using the second wave of SHARE. All these indicators are important predictors of home care utilization. In particular, a strong significant effect of PtD is found in the paid domestic help and informal care models. The relationship between formal and informal care moves from substitutability to complementarity depending on the type of care considered, and the estimated effects are small in absolute size. This might call for a reconsideration of the effectiveness of incentives for informal care as instruments to reduce public expenditure for home care services. Copyright © 2013 John Wiley & Sons, Ltd.

# THE RANDOM CARD SORT METHOD AND RESPONDENT CERTAINTY IN CONTINGENT VALUATION: AN EXPLORATORY INVESTIGATION OF RANGE BIAS

• Health Economics---2014---Phil Shackley,Simon Dixon

ABSTRACT Willingness to pay (WTP) values derived from contingent valuation surveys are prone to a number of biases. Range bias occurs when the range of money values presented to respondents in a payment card affects their stated WTP values. This paper reports the results of an exploratory study whose aim was to investigate whether the effects of range bias can be reduced through the use of an alternative to the standard payment card method, namely, a random card sort method. The results suggest that the random card sort method is prone to range bias but that this bias may be mitigated by restricting the analysis to the WTP values of those respondents who indicate they are 'definitely sure' they would pay their stated WTP. Copyright © 2013 John Wiley & Sons, Ltd.

# THE IMPACT OF TECHNOLOGICAL INTENSITY OF SERVICE PROVISION ON PHYSICIAN EXPENDITURES: AN EXPLORATORY INVESTIGATION

 Health Economics---2014---Mehrdad Roham, Anait R. Gabrielyan, Norman P. Archer, Michel Grignon, Byron Spencer

ABSTRACT Advances in technology and subsequent changes in clinical practice can lead to increases in healthcare costs. Our objective is to assess the impact that changes in the technological intensity of physician-provided health services have had on the age pattern of both the volume of services provided and the average expenditures associated with them. We based our analysis on age-sex-specific patient-level administrative records of diagnoses and treatments. These records include virtually all physician services provided in the province of Ontario, Canada in a 10-year span ending in 2004 and their associated costs. An algorithm is developed to classify services and their costs into three

levels of technological intensity. We find that while the overall age-standardized level and cost of services per capita have decreased, the volume and cost of high technologically intensive treatments have increased, especially among older patients. Copyright © 2013 John Wiley & Sons, Ltd.

### COST-OFFSETS OF PRESCRIPTION DRUG EXPENDITURES: DATA ANALYSIS VIA A COPULA-BASED BIVARIATE DYNAMIC HURDLE MODEL

• Health Economics---2014---Partha Deb,Pravin Trivedi.David Zimmer

SUMMARY In this paper, we estimate a copula-based bivariate dynamic hurdle model of prescription drug and nondrug expenditures to test the cost-offset hypothesis, which posits that increased expenditures on prescription drugs are offset by reductions in other nondrug expenditures. We apply the proposed methodology to data from the Medical Expenditure Panel Survey, which have the following features: (i) the observed bivariate outcomes are a mixture of zeros and continuously measured positives; (ii) both the zero and positive outcomes show state dependence and intertemporal interdependence; and (iii) the zeros and the positives display contemporaneous association. The point mass at zero is accommodated using a hurdle or a two-part approach. The copula-based approach to generating joint distributions is appealing because the contemporaneous association involves asymmetric dependence. The paper studies samples categorized by four health conditions: arthritis, diabetes, heart disease, and mental illness. There is evidence of greater than dollar-for-dollar cost-offsets of expenditures on prescribed drugs for relatively low levels of spending on drugs and less than dollar-for-dollar cost-offsets at higher levels of drug expenditures. Copyright © 2013 John Wiley & Sons, Ltd.

#### GENDER DIFFERENCES IN ALCOHOL DEMAND: A SYSTEMATIC REVIEW OF THE ROLE OF PRICES AND TAXES

• Health Economics---2014---Jon Nelson

ABSTRACT Gender differences in drinking patterns are potentially important for public policies, especially policies that rely extensively on higher alcohol taxes and prices. This paper presents a systematic review of alcohol prices and gender differences in drinking and heavy drinking by adults and young adults. Starting with a database of 578 studies of alcohol demand and other outcomes, 15 studies are reviewed of adult drinking including discussion of samples, measurement issues, econometric models, special variables, and key empirical results. A similar discussion is presented for eight studies of drinking by young adults, ages 18–26 years. Four conclusions are obtained from the review. First, adult men have less elastic demands compared with women. Second, there is little or no price response by heavy-drinking adults, regardless of gender. Third, although the sample is small, price might be important for drinking participation by young adults. Fourth, the results strongly suggest that heavy drinking by young adults, regardless of gender, is not easily dissuaded by higher prices. Policy implications, primary study limitations, and suggestions for future research are discussed. Copyright © 2013 John Wiley & Sons, Ltd.

### GENDER DIFFERENCES IN ALCOHOL DEMAND: A SYSTEMATIC REVIEW OF THE ROLE OF PRICES AND TAXES. COMMENT ON CONCLUSIONS BY NELSON

 Health Economics---2014---Anne Ludbrook, John Holmes, Tim Stockwell

2014

### REPLY TO A COMMENT BY LUDBROOK, HOLMES, AND STOCKWELL: GENDER DIFFERENCES IN ALCOHOL DEMAND

• Health Economics---2014---Jon Nelson

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## SOCIAL INTERACTIONS AND MALARIA PREVENTIVE BEHAVIORS IN SUB-SAHARAN AFRICA

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### BIRTH WEIGHT AND ACADEMIC ACHIEVEMENT IN CHILDHOOD

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## THE WELFARE IMPACT OF PARALLEL IMPORTS: A STRUCTURAL APPROACH APPLIED TO THE GERMAN MARKET FOR ORAL ANTI-DIABETICS

• Health Economics---2014---Tomaso Duso, Annika Herr, Moritz Suppliet

2014

## THE EFFECT OF MENTAL HEALTH ON EMPLOYMENT: EVIDENCE FROM AUSTRALIAN PANEL DATA

• Health Economics---2014---Paul Frijters, David Johnston, Michael Shields

ABSTRACT To what extent does poor mental health affect employment outcomes? Answering this question involves multiple technical difficulties: two-way causality between health and work, unobservable confounding factors and measurement error in survey measures of mental health. We attempt to overcome these difficulties by combining 10 waves of high-quality panel data with an instrumental variable model that allows for individual-level fixed effects. We focus on the extensive margin of employment, and we find evidence that a one-standard-deviation decline in mental health reduces employment by 30 percentage points. Further investigations suggest that this effect is predominantly a supply rather than a demand-side response and is larger for older than young workers. Copyright © 2014 John Wiley & Sons, Ltd.

## THRESHOLD EFFECTS IN NONLINEAR MODELS WITH AN APPLICATION TO THE SOCIAL CAPITAL-RETIREMENT-HEALTH RELATIONSHIP

 Health Economics---2014---Brenda Gannon, David Harris, Mark Harris

2014

### CORRECTION OF MISCLASSIFICATION ERROR IN DISABILITY RATES

• Health Economics---2014---Amanda Gosling, Eirini-Christina Saloniki

ABSTRACT This paper examines misclassification error in survey estimates of disability. The results suggest that a significant number of those with a disability fail to be recorded as such in the British Household Panel Survey. In addition, the probability of a false positive is estimated as being very close to zero in all socio-demographic groups. There is a strong bias in estimates of differences in rates of disability across groups but only a small effect on estimates of the difference in employment rates by disability status. Copyright © 2014 John Wiley & Sons, Ltd.

## ESTIMATING HEALTH STATE UTILITY VALUES FROM DISCRETE CHOICE EXPERIMENTS—A QALY SPACE MODEL APPROACH

• Health Economics---2014---Yuanyuan Gu,Richard Norman,Rosalie Viney

ABSTRACT Using discrete choice experiments (DCEs) to estimate health state utility values has become an important alternative to the conventional methods of Time Trade-Off and Standard Gamble. Studies using DCEs have typically used the conditional logit to estimate the underlying utility function. The conditional logit is known for several limitations. In this paper, we propose two types of models based on the mixed logit: one using preference space and the other using quality-adjusted life year (QALY) space, a concept adapted from the willingness-to-pay literature. These methods are applied to a dataset collected using the EQ-5D. The results showcase the advantages of using QALY space

and demonstrate that the preferred QALY space model provides lower estimates of the utility values than the conditional logit, with the divergence increasing with worsening health states. Copyright © 2014 John Wiley & Sons, Ltd.

## WHAT EXPLAINS THE QUALITY AND PRICE OF GP SERVICES? AN INVESTIGATION USING LINKED SURVEY AND ADMINISTRATIVE DATA

• Health Economics---2014---Meliyanni Johar, Glenn Jones, Elizabeth Savage

ABSTRACT We examine patient socioeconomic status, the strength of the patient-doctor relationship and local area competition as determinants of the quality and price of GP services. We exploit a large-sample patient data set in Australia and its linkage to administrative databases. The sample contains over 260 000 patients and over 12 600 GPs, observed between 2005 and 2010. Controlling for GP fixed effects and patient health, we find no strong evidence that quality differs by patient age, gender, country of origin, health concession card status and income, but quality is increased by stronger patient–doctor relationship. Using a competition measure that is defined at the individual GP level and not restricted to a local market, we find that competition lowers quality. Price is increasing in patient income, whereas competition has a small impact on price. Copyright © 2014 John Wiley & Sons, Ltd.

## DIFFERENCE IN DIFFERENCES FOR STAYERS WITH A TIME-VARYING QUALIFICATION: HEALTH EXPENDITURE ELASTICITY OF THE ELDERLY

• Health Economics---2014---Myoung-jae Lee, Young-Sook Kim

2014

### THE EFFECT OF NONCOGNITIVE TRAITS ON HEALTH BEHAVIOURS IN ADOLESCENCE

• Health Economics---2014---Silvia Mendolia,Ian Walker

ABSTRACT This paper investigates the relationship between personality traits and health behaviours in adolescence using a large and recent cohort study. In particular, we investigate the impact of locus of control, self-esteem and work ethics at ages 15–16 years on the incidence of health behaviours such as alcohol consumption, cannabis and other drug use, unprotected and early sexual activity and sports and physical activity. We use matching methods to control for a very rich set of adolescent and family characteristics, and we find that personality traits do affect health behaviours. In particular, individuals with external locus of control, low self-esteem or with low levels of work ethics seem more likely in engage in risky health behaviours. Copyright © 2014 John Wiley & Sons, Ltd.

## THE EFFECTS OF TAXING SUGAR-SWEETENED BEVERAGES ACROSS DIFFERENT INCOME GROUPS

Health Economics---2014---Anurag
 Sharma, Katharina Hauck, Bruce
 Hollingsworth, Luigi Siciliani

ABSTRACT This paper investigates the impact of sugar-sweetened beverages (SSB) taxes on consumption, bodyweight and tax burden for low-income, middle-income and high-income groups using an Almost Ideal Demand System and 2011 Household level scanner data. A significant contribution of our paper is that we compare two types of SSB taxes recently advocated by policy makers: A 20% flat rate sales (valoric) tax and a 20 cent/L volumetric tax. Censored demand is accounted for using a two-step procedure. We find that the volumetric tax would result in a greater per capita weight loss than the valoric tax (0.41 kg vs. 0.29 kg). The difference between the change in weight is substantial for the target group of heavy purchasers of SSBs in low-income households, with a weight reduction of up to 3.20 kg for the volumetric and 2.06 kg for the valoric tax. The average yearly per capita tax burden on low-income households is \$17.87 (0.21\% of income) compared with \$15.17 for high-income households (0.07% of income) for the valoric tax, and \$13.80 (0.15%) and \$10.10 (0.04%) for the volumetric tax. Thus, the tax burden is lower, and weight reduction is higher under a volumetric tax. Copyright © 2014 John Wiley & Sons, Ltd.

# WHAT ROLES DO CONTEMPORANEOUS AND CUMULATIVE INCOMES PLAY IN THE INCOME-CHILD HEALTH GRADIENT FOR YOUNG CHILDREN? EVIDENCE FROM AN AUSTRALIAN PANEL

• Health Economics---2014---Rasheda Khanam, Hong Son Nghiem, Luke Brian Connelly

ABSTRACT The literature to date shows that children from poorer households tend to have worse health than their peers, and the gap between them grows with age. We investigate whether and how health shocks (as measured by the onset of chronic conditions) contribute to the income-child health gradient and whether the contemporaneous or cumulative effects of income play important mitigating roles. We exploit a rich panel dataset with three panel waves called the Longitudinal Study of Australian children. Given the availability of three waves of data, we are able to apply a range of econometric techniques (e.g. fixed and random effects) to control for unobserved heterogeneity. The paper makes several contributions to the extant literature. First, it shows that an apparent income gradient becomes relatively attenuated in our dataset when the cumulative and contemporaneous effects of household income are distinguished econometrically. Second, it demonstrates that the income-child health gradient becomes statistically insignificant when controlling for parental health and health-related behaviours or unobserved heterogeneity. Copyright © 2013 John Wiley & Sons, Ltd.

### CHILD CARE SUBSIDIES, MATERNAL HEALTH, AND CHILD-PARENT INTERACTIONS: EVIDENCE FROM THREE NATIONALLY REPRESENTATIVE DATASETS

• Health Economics---2014---Chris M. Herbst, Erdal Tekin

ABSTRACT A complete account of the US child care

subsidy system requires an understanding of its implications for both parental and child well-being. Although the effects of child care subsidies on maternal employment and child development have been recently studied, many other dimensions of family well-being have received little attention. This paper attempts to fill this gap by examining the impact of child care subsidy receipt on maternal health and the quality of child-parent interactions. The empirical analyses use data from three nationally representative surveys, providing access to numerous measures of family wellbeing. In addition, we attempt to handle the possibility of non-random selection into subsidy receipt by using several identification strategies both within and across the surveys. Our results consistently indicate that child care subsidies are associated with worse maternal health and poorer interactions between parents and their children. In particular, subsidized mothers report lower levels of overall health and are more likely to show symptoms consistent with anxiety, depression, and parenting stress. Such mothers also reveal more psychological and physical aggression toward their children and are more likely to utilize spanking as a disciplinary tool. Together, these findings suggest that work-based public policies aimed at economically disadvantaged mothers may ultimately undermine family well-being. Copyright © 2013 John Wiley & Sons, Ltd.

### EFFECTS OF NCMS ON ACCESS TO CARE AND FINANCIAL PROTECTION IN CHINA

• Health Economics---2014---Zhiyuan Hou,Ellen Van de Poel,Eddy Van Doorslaer,Baorong Yu,Qingyue Meng

ABSTRACT The introduction of the New Cooperative Medical Scheme (NCMS) in rural China has been the most rapid and dramatic extension of health insurance coverage in the developing world in this millennium. The literature to date has mainly used the uneven rollout of NCMS across counties as a way of identifying its effects on access to care and financial protection. This study exploits the cross-county variation in NCMS generosity in 2006 and 2008 in the Ningxia and Shandong provinces to estimate the effect of coverage generosity

on utilization and financial protection. Our results confirm earlier findings of NCMS being effective in increasing access to care but not in increasing financial protection. In addition, we find NCMS enrollees to be sensitive to the price incentives set in the NCMS design when choosing their provider and providers to respond by increasing prices and/or providing more expensive care. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE LABOR MARKET EFFECTS OF CALIFORNIA'S MINIMUM NURSE STAFFING LAW

• Health Economics---2014---Elizabeth L. Munnich

ABSTRACT In 2004, California became the first state to implement statewide minimum nurse-to-patient ratios in general hospitals. In spite of years of work to establish statewide staffing regulations, there is little evidence that the law was effective in attracting more nurses to the hospital workforce or improving patient outcomes. This paper examines the effects of this legislation on employment and wages of registered nurses. By using annual financial data from California hospitals, I show that nurse-to-patient ratios in medical/surgical units increased substantially following the staffing mandate. However, survey data from two nationally representative datasets indicate that the law had no effect on the aggregate number of registered nurses or the hours they worked in California hospitals, and at most a modest effect on wages. My findings suggest that offsetting changes in labor demand due to hospital closures, combined with reclassification of workers within hospitals, and mitigated the employment effects of California's staffing regulation. This paper cautions that California's experience with minimum nurse staffing legislation may not be generalizable to states considering similar policies in very different hospital markets. Copyright © 2013 John Wiley & Sons, Ltd.

# THE DETERMINANTS OF HEALTH CARE EXPENDITURE TOWARD THE END OF LIFE: EVIDENCE FROM TAIWAN

• Health Economics---2014---Simon Chang, Yang He, Chee-Ruey Hsieh

ABSTRACT This paper empirically investigates the relationship between the health care expenditure of endof-life patients and hospital characteristics in Taiwan where (i) hospitals of different ownership differ in their financial incentives; (ii) patients are free to choose their providers; and (iii) health care services are paid for by a single public payer on a fee-for-services basis with a global budget cap. Utilizing insurance claims for 11 863 individuals who died during 2005–2007, we trace their hospital expenditures over the last 24 months of their lives. We find that end-of-life patients who are treated by private hospitals in general are associated with higher inpatient expenditures than those treated by public hospitals, while there is no significant difference in days of hospital stay. This finding is consistent with the difference in financial incentives between public and private hospitals in Taiwan. Nevertheless, we also find that the public-private differences vary across accreditation levels. Copyright © 2013 John Wiley & Sons, Ltd.

# PHYSICIAN RESPONSE TO PAY-FOR-PERFORMANCE: EVIDENCE FROM A NATURAL EXPERIMENT

Health Economics---2014---Jinhu Li, Jeremiah Hurley, Philip DeCicca, Gioia Buckley, Philip DeCicca

ABSTRACT This study exploits a natural experiment in the province of Ontario, Canada, to identify the impact of pay-for-performance (P4P) incentives on the provision of targeted primary care services and whether physicians' responses differ by age, size of patient population, and baseline compliance level. We use administrative data that cover the full population of Ontario and nearly all the services provided by primary care physicians. We employ a difference-in-differences approach that controls for selection on observables and selection on unobservables that may cause estimation

bias. We implement a set of robustness checks to control for confounding from other contemporaneous interventions of the primary care reform in Ontario. The results indicate that responses were modest and that physicians responded to the financial incentives for some services but not others. The results provide a cautionary message regarding the effectiveness of employing P4P to increase the quality of health care. Copyright © 2013 John Wiley & Sons, Ltd.

#### USING COST-EFFECTIVENESS ESTIMATES FROM SURVEY DATA TO GUIDE COMMISSIONING: AN APPLICATION TO HOME CARE

 Health Economics---2014---Julien Forder, Juliette Malley, Ann-Marie Towers, Ann Netten

ABSTRACT The aim is to describe and trial a pragmatic method to produce estimates of the incremental cost-effectiveness of care services from survey data. The main challenge is in estimating the counterfactual; that is, what the patient's quality of life would be if they did not receive that level of service. A production function method is presented, which seeks to distinguish the variation in care-related quality of life in the data that is due to service use as opposed to other factors. A problem is that relevant need factors also affect the amount of service used and therefore any missing factors could create endogeneity bias. Instrumental variable estimation can mitigate this problem. This method was applied to a survey of older people using home care as a proof of concept. In the analysis, we were able to estimate a quality-of-life production function using survey data with the expected form and robust estimation diagnostics. The practical advantages with this method are clear, but there are limitations. It is computationally complex, and there is a risk of misspecification and biased results, particularly with IV estimation. One strategy would be to use this method to produce preliminary estimates, with a full trial conducted thereafter, if indicated. Copyright © 2013 John Wiley & Sons, Ltd.

# PRICING DISTORTIONS IN MEDICARE'S PHYSICIAN FEE SCHEDULE AND PATIENT SATISFACTION WITH CARE QUALITY AND ACCESS

• Health Economics---2014---Christopher Brunt, Gail A. Jensen

ABSTRACTMedicare adjusts its payments to physicians for geographic differences in the cost of operating a medical practice, but the method it uses is imprecise. We measure the inaccuracy in its geographic adjustment factors and categorize beneficiaries by whether they live where Medicare's formula is favorable or unfavorable to physicians. Then, using the 2001–2003 Medicare Current Beneficiary Survey, we examine whether differences in physician payment generosity, that is, whether favorable or unfavorable, influence the satisfaction ratings Medicare seniors assign to their quality of care and access to services. We find strong evidence that they do. Many beneficiaries live in paymentunfavorable areas and receive a less satisfying quality of care and less satisfying access to services than beneficiaries who live where payments are favorable to physicians. Copyright © 2013 John Wiley & Sons, Ltd.

#### ONE MAN'S TALL IS ANOTHER MAN'S SMALL: HOW THE FRAMING OF PORTION SIZE INFLUENCES FOOD CHOICE

• Health Economics---2014---David Just,Brian Wansink

ABSTRACTLabels such as 'Large' or 'Super-size' are often used to describe portion sizes. How do these normative labels influence consumer choice and how much they ultimately either consume or waste? Although one might believe that firms use normative labels to impact choice behavior through loss aversion, a field experiment shows consumer's willingness to pay is inconsistent with a loss aversion explanation. Although portions were clearly visible, individuals appeared to use the labels as objective information about their size. Importantly, a second study showed these labels also led people to eat less when food was given a larger sounding name than a smaller name (double

vs. regular; regular vs. half-size). If labels are used as size information, policies governing normative names could help reduce food consumption or reduce waste. Copyright © 2013 John Wiley & Sons, Ltd.

# AN INSTRUMENT FOR MEASURING THE SOCIAL WILLINGNESS TO PAY FOR HEALTH STATE IMPROVEMENT

 Health Economics---2014---Jeff Richardson, Angelo Iezzi, Kompal Sinha, Munir A. Khan, John Mckie

ABSTRACTThis paper describes an instrument for measuring the social value of changes in health status, the Relative Social Willingness to Pay. It is a unique combination of measurement attributes designed to minimise cognitive complexity and provide an additional option for measuring 'social value'. Similar to the person trade-off (PTO), it adopts a social perspective and asks respondents to evaluate programmes on behalf of society. Unlike the PTO, trade-offs between the options use dollars, not numbers of patients. Respondents are not, however, asked for their personal willingness to pay. Rather, the opportunity cost of funds spent on one service is as an offsetting reduction in funds for a second service. The amount spent on each service therefore indicates relative, not absolute, value. However, the two services combine to produce one Quality adjusted life year which allows the calculation of a Quality adjusted life year-like unit of social value on a 0–1 scale. A three-stage survey was used to test the instrument's reliability, validity and sensitivity to the framing of the main question. Results indicate that the Relative Social Willingness to Pay produces values similar to but less than the PTO and time tradeoff techniques. Copyright © 2013 John Wiley & Sons, Ltd.

## DISCLOSING TOTAL WAITING TIMES FOR JOINT REPLACEMENT: EVIDENCE FROM THE ENGLISH NHS USING LINKED HES DATA

 Health Economics---2014---Elsa Marques, Sian Noble, Ashley W. Blom, William Hollingworth

ABSTRACTFor the last decade, stringent monitoring

of waiting time performance targets provided English hospitals with incentives to reduce official waiting times for elective surgery. It is less clear whether the total amount of time patients waited in secondary care, from first referral to outpatient clinic until treatment, has also fallen. We used Hospital Episode Statistics inpatient data for patients undergoing total joint replacement during a period of active monitoring of targets (between 2006/7 and 2008/9) and linked it to outpatient data to reconstruct patients' pathway in the 3 years before surgery and provide alternative measurements of waiting times. Our findings suggest that although official waiting times decreased drastically in our study period, total waiting time in secondary care has not declined. Patients with shorter official waits spent a longer time in a 'work-up' period prior to inclusion in the official waiting list, and socioeconomic inequities persisted in waiting times for joint replacement. We found no evidence that target policies achieved efficiency gains during our study period. Copyright © 2013 John Wiley & Sons, Ltd.

#### MEDICARE SKILLED NURSING FACILITY REIMBURSEMENT AND UPCODING

• Health Economics---2014---John Bowblis,Christopher Brunt

ABSTRACTPost-acute care provided by skilled nursing facilities (SNFs) is reimbursed by Medicare under a prospective payment system using resource utilization groups (RUGs) that adjust payment intensity on the basis of predefined ranges of weekly therapy minutes provided and the functionality of the patient. Individual RUGs account for differences in the intensity of care provided, but there exists significant regional variation in the payments SNFs receive from Medicare due to the use of geographic adjustment factors. This paper is the first to use this geographic variation in the generosity of Medicare reimbursement to empirically test if SNFs respond to payment differences between RUG categories. The results are highly suggestive that SNFs upcode patients by providing additional therapy minutes to increase revenue, whereas we find no evidence of upcoding related to patient functionality

affect RUG selection, we predict that reducing the financial incentive to upcode could result in significant savings to Medicare. Copyright © 2013 John Wiley & Sons, Ltd.

#### DID REFORM OF THE NON-GROUP HEALTH INSURANCE MARKET AFFECT THE DECISION TO BE SELF-EMPLOYED? EVIDENCE FROM STATE REFORMS IN THE 1990s

• Health Economics---2014---Bradley Heim, Ithai Z. Lurie

SUMMARYThis paper estimates whether state-level implementation of community rating and guaranteed issue regulations in the non-group health insurance market during the 1990s affected the decision of taxpayers to be self-employed. Using a panel of tax returns that span 1987-2000, we find no statistically significant effect of the reforms on the propensity to be self-employed overall, although we find evidence of an increase in self-employment among older taxpayers and weaker evidence of decreases among younger cohorts. Copyright © 2013 John Wiley & Sons, Ltd.

#### A SHORT NOTE ON ECONOMIC DEVELOPMENT AND SOCIOECONOMIC INEQUALITY IN FEMALE **BODY WEIGHT**

• Health Economics---2014---Eva Deuchert, Sofie Cabus, Darjusch Tafreschi

ABSTRACTThe origin of the obesity epidemic in developing countries is still poorly understood. It has been prominently argued that economic development provides a natural interpretation of the growth in obesity. This paper tests the main aggregated predictions of the theoretical framework to analyze obesity. Average body weight and health inequality should be associated with economic development. Both hypotheses are confirmed: we find higher average female body weight in economically more advanced countries. In relatively nondeveloped countries, obesity is a phenomenon of the socioeconomic elite. With economic development,

scores. Simulating how different payment differentials obesity shifts toward individuals with lower socioeconomic status. Copyright © 2013 John Wiley & Sons,

#### SEMIPARAMETRIC MODELING OF AGE-SPECIFIC VARIATIONS IN INCOME **RELATED HEALTH INEQUALITIES**

• Health Economics---2014---Martin Siegel, Karl Mosler

ABSTRACTA Gini-type concentration index is combined with semiparametric estimation techniques to derive a varying inequality index that works without a priori sample stratification. The new approach is used to investigate the question how income inequalities and income-related gradients in the distribution of health vary across age groups. With health data from the 2005 survey of the German microcensus, it is demonstrated that significant inequalities to the detriment of the deprived evolve in early mid-life and reach their maximum around the age for retirement. Some leveling is found for the elderly. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE MOTIVES OF INTERGENERATIONAL TRANSFER TO THE ELDERLY PARENTS IN **CHINA: CONSEQUENCES OF HIGH MEDICAL EXPENDITURE**

• Health Economics---2014---Xiaoyu Wu,Lixing Li

ABSTRACT The support for the elderly is facing big challenges with the problem of population aging. Transfers from adult children could partly insure elderly parents against low income and high medical expenditure. There are two main motives for transfers in the literature, namely altruism and exchange. By using data from a new household survey of people aged 45 years and above in China, we estimate the transfer derivatives with the adjustment of medical expenditure in elderly parents' income. We find a large negative impact of adjusted income on transfers at the lower end of income distribution, which is consistent with the altruistic motive. Evidence on the exchange motive is found only for sons, but not for daughters. In addition, there is evidence on the 'exchange-for-service' mo- PUBLIC AND PRIVATE HEALTH INSURANCE IN tive, which interprets transfer as a payment to parents' family services, such as taking care of grandchildren. **PROBLEM** Copyright © 2013 John Wiley & Sons, Ltd.

#### **MEASURING THE RELATIONSHIP BETWEEN** COSTS AND OUTCOMES: THE EXAMPLE OF **ACUTE MYOCARDIAL INFARCTION IN GERMAN HOSPITALS**

• Health Economics---2014---Tom Stargardt, Jonas Schrevögg, Ivan Kondofersky

ABSTRACT In this paper, we propose a methodological approach to measure the relationship between hospital costs and health outcomes. We propose to investigate the relationship for each condition or disease area by using patient-level data. We examine health outcomes as a function of costs and other patientlevel variables by using the following: (1) two-stage residual inclusion with Murphy-Topel adjustment to address costs being endogenous to health outcomes, (2) random-effects models in both stages to correct for correlation between observation, and (3) Cox proportional hazard models in the second stage to ensure that the available information is exploited. To demonstrate its application, data on mortality following hospital treatment for acute myocardial infarction (AMI) from a large German sickness fund were used. Provider reimbursement was used as a proxy for treatment costs. We relied on the Ontario Acute Myocardial Infarction Mortality Prediction Rules as a disease-specific riskadjustment instrument. A total of 12,284 patients with treatment for AMI in 2004–2006 were included. The results showed a reduction in hospital costs by €100 to increase the hazard of dying, that is, mortality, by 0.43%. The negative association between costs and mortality confirms that decreased resource input leads to worse outcomes for treatment after AMI. Copyright © 2013 John Wiley & Sons, Ltd.

## **GERMANY: THE IGNORED RISK SELECTION**

Economics---2014---Martina • Health Grunow.Robert Nuscheler

ABSTRACT We investigate risk selection between public and private health insurance in Germany. With riskrated premiums in the private system and communityrated premiums in the public system, advantageous selection in favor of private insurers is expected. Using 2000 to 2007 data from the German Socio-Economic Panel Study (SOEP), we find such selection. While private insurers are unable to select the healthy upon enrollment, they profit from an increase in the probability to switch from private to public health insurance of those individuals who have experienced a negative health shock. To avoid distorted competition between the two branches of health care financing, risk-adjusted transfers from private to public insurers should be instituted. Copyright © 2013 John Wiley & Sons, Ltd.

#### SUPPLY-SIDE RESPONSE TO DECLINING **HEROIN PURITY: FENTANYL OVERDOSE EPISODE IN NEW JERSEY**

• Health Economics---2014---Katherine Hempstead, Emel O. Yildirim

ABSTRACT The inelastic price demand observations characteristic of illegal drug markets have led to the conclusion that the burden of a negative supply shock would be completely reflected to consumers. This paper argues that the increasing availability of prescription opioids may threaten heroin sellers' profit margin and force them to find alternative methods to compensate buyers in the event of a supply shock. We investigate the 2006 fentanyl overdose episode in New Jersey and argue that the introduction of non-pharmaceutical fentanyl, its spatial distribution, and the timing of overdose deaths may have been related to trends in heroin purity. Using medical examiner data, as well as data from the Drug Enforcement Administration, Office of Diversion Control on retail sales of prescription opioids in a negative binomial specification, we show

that month-to-month fluctuations in heroin purity have a significant effect on fentanyl-related overdoses, particularly in those areas where prescription opioids are highly available. Copyright © 2013 John Wiley & Sons, Ltd.

### ARE HEALTH SHOCKS DIFFERENT? EVIDENCE FROM A MULTISHOCK SURVEY IN LAOS

• Health Economics---2014---Adam Wagstaff,Magnus Lindelow

ABSTRACT Using primary data from Laos, we compare a broad range of different types of shocks in terms of their incidence, distribution between the poor and the better off, idiosyncrasy, costs, coping responses, and self-reported impacts on well-being. Health shocks are more common than most other shocks, more concentrated among the poor, more idiosyncratic, more costly, trigger more coping strategies, and highly likely to lead to a cut in consumption. Household members experiencing a health shock lost, on average, 0.6 point on a five-point health scale; the wealthier are better able to limit the health impacts of a health shock. Copyright © 2013 The World Bank Group.

## COPING WITH THE ECONOMIC CONSEQUENCES OF ILL HEALTH IN INDONESIA

 Health Economics---2014---Robert Sparrow, Ellen Van Poel, Gracia Hadiwidjaja, Athia Yumna, Nila Warda, Asep Suryahadi

ABSTRACT We assess the economic risk of ill health for households in Indonesia and the role of informal coping strategies. Using household panel data from the Indonesian socio-economic household survey (Susenas) for 2003 and 2004, and applying fixed effects Poisson models, we find evidence of economic risk from illness through medical expenses. For the poor and the informal sector, ill health events impact negatively on income from wage labour, whereas for the non-poor and formal sector, it is income from self-employed business activities which is negatively affected. However, only for the rural population and the poor does this lead to a decrease in consumption, whereas the non-poor

seem to be able to protect current household spending. Borrowing and drawing on family network and buffers, such as savings and assets, seem to be key informal coping strategies for the poor, which may have negative long-term effects. While these results suggest scope for public intervention, the economic risk from income loss for the rural poor is beyond public health care financing reforms. Rather, formal sector employment seems to be a key instrument for financial protection from illness, by also reducing income risk. Copyright © 2013 John Wiley & Sons, Ltd.

#### AN AUSTRALIAN DISCRETE CHOICE EXPERIMENT TO VALUE EQ-5D HEALTH STATES

 Health Economics---2014---Rosalie Viney, Richard Norman, John Brazier, Paula Cronin, Madeleine T. King, Julie Ratcliffe, Deborah Street

SUMMARY Conventionally, generic quality-of-life health states, defined within multi-attribute utility instruments, have been valued using a Standard Gamble or a Time Trade-Off. Both are grounded in expected utility theory but impose strong assumptions about the form of the utility function. Preference elicitation tasks for both are complicated, limiting the number of health states that each respondent can value and, therefore, that can be valued overall. The usual approach has been to value a set of the possible health states and impute values for the remainder. Discrete Choice Experiments (DCEs) offer an attractive alternative, allowing investigation of more flexible specifications of the utility function and greater coverage of the response surface. We designed a DCE to obtain values for EQ-5D health states and implemented it in an Australia-representative online panel (n = 1,031). A range of specifications investigating non-linear preferences with respect to time and interactions between EQ-5D levels were estimated using a random-effects probit model. The results provide empirical support for a flexible utility function, including at least some two-factor interactions. We then constructed a preference index such that full health and death were valued at 1 and 0, respectively, to provide a DCE-based algorithm for Australian cost-utility analyses. Copyright

#### TIMING EFFECTS IN HEALTH VALUATIONS

• Health Economics---2014---Andrea M. Leiter, Gerald J. Pruckner

SUMMARY This paper analyzes the impact of external sources of information, conveyed by the frequency of risky events that vary across time, on the individual willingness to pay (WTP) for a reduction of mortality risk. We collected data from a contingent valuation (CV) exercise conducted in two waves (fall and winter) to examine whether individual WTP varied across periods that differed in the predominance of fatal accidents. Risk valuations were based on fatal snow avalanche accidents, that is, a type of risk with seasonal differences in occurrence. We found slightly lower but statistically significant mean WTP figures in the winter than in the fall sample because of time-varying individual risk attitudes and, therefore, recommend controlling for these factors in risk assessment CV surveys. Copyright © 2013 John Wiley & Sons, Ltd.

## THE IMPACT OF MACROECONOMIC CONDITIONS ON OBESITY IN CANADA

• Health Economics---2014---Ehsan Latif

ABSTRACT The paper used longitudinal Canadian data from the National Population Health Survey to estimate the impact of macroeconomic conditions measured by provincial unemployment rate on individual obesity and BMI. To control for individual-specific unobserved heterogeneity, the study utilized the conditional fixed effect logit and fixed effects models. The study found that unemployment rate had a significant positive impact on the probability of being severely obese. The study also found that unemployment rate significantly increased BMI. However, the study did not find any significant impact of unemployment rate on the probability of being overweight or obese. Copyright © 2013 John Wiley & Sons, Ltd.

# HEALTH INSURANCE TAX CREDITS, THE EARNED INCOME TAX CREDIT, AND HEALTH INSURANCE COVERAGE OF SINGLE MOTHERS

• Health Economics---2014---Merve Cebi, Stephen Woodbury

SUMMARY The Omnibus Budget Reconciliation Act of 1990 enacted a refundable tax credit for low-income working families who purchased health insurance coverage for their children. This health insurance tax credit (HITC) existed during tax years 1991, 1992, and 1993, and was then rescinded. A difference-in-differences estimator applied to Current Population Survey data suggests that adoption of the HITC, along with accompanying increases in the Earned Income Tax Credit (EITC), was associated with a relative increase of about 4.7 percentage points in the private health insurance coverage of working single mothers with high school or less education. Also, a difference-in-difference-indifferences estimator, which attempts to net out the possible influence of the EITC increases but which requires strong assumptions, suggests that the HITC was responsible for about three-quarters (3.6 percentage points) of the total increase. The latter estimate implies a price elasticity of health insurance take-up of 0.42. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE EFFECTS OF HEALTH STATUS AND HEALTH SHOCKS ON HOURS WORKED

 Health Economics---2014---Lixin Cai, Kostas Mavromaras, Umut Oguzoglu

We investigate the impact of health on working hours. This is in recognition of the fact that leaving the labour market because of persistently low levels of health status, or because of new health shocks, is only one of the possible responses open to employees. We use the first six waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey to estimate the joint effect of health status and health shocks on working hours. To account for zero working hours, we use a dynamic random effects Tobit model of working hours. We follow Heckman (1981) and approximate the unknown initial conditions with a static equation that

utilises information from the first wave of the data. Predicted individual health status is used to ameliorate the possible effects of measurement error and endogeneity. We conclude that overall, lower health status results in fewer working hours and that when they occur, health shocks lead to further reductions in working hours. Esparating the time-persistent effect of health status results were asked to express their maximum willingness to pay pay per month or per year. Another important finding working hours. Copyright © 2013 John Wiley & Sons, is that the introduction of a binary response filter prior to the payment card format in order to test for convergent validity. The aim was to test whether preferences (as measured by willingness to pay additional tax) would be affected by framing the willingness-to-pay question differently. Results demonstrated that valuations were highly sensitive to whether respondents were asked to express their maximum willingness to pay per month or per year. Another important finding to the payment card follow-up tends to eliminate the

# REGIONAL DISPARITIES IN SELF-REPORTED HEALTH: EVIDENCE FROM CHINESE OLDER ADULTS

• Health Economics---2014---Ren Mu

ABSTRACT Despite the subjectivity inherent in individuals' interpretation of good health, self-reported health is widely used in health-related studies. With data from the pilot survey of the new China Health and Retirement Longitudinal Study, this paper applies the vignette method to control for differences in individual response scales and examines regional differences in self-reported health among the elderly in China. The results show that people in different provinces seem to use different criteria when assessing their health conditions. Regional health disparities are underestimated if differentials in response scales are not accounted for. A substantial share of the disparities cannot be explained by the observed differences in respondents' chronic health condition, demographic characteristics, and household wealth, a finding confirmed by a test based on inpatient-care information. Copyright © 2013 John Wiley & Sons, Ltd.

# FRAMING THE WILLINGNESS-TO-PAY QUESTION: IMPACT ON RESPONSE PATTERNS AND MEAN WILLINGNESS TO PAY

• Health Economics---2014---Dorte Gyrd-Hansen, Mette Lundsby Jensen, Trine Kjaer, Dorte Gyrd-Hansen

SUMMARY In this study, respondents were randomly

mat and an open-ended format in order to test for convergent validity. The aim was to test whether preferences (as measured by willingness to pay additional tax) would be affected by framing the willingness-topay question differently. Results demonstrated that valuations were highly sensitive to whether respondents were asked to express their maximum willingness to pay per month or per year. Another important finding is that the introduction of a binary response filter prior to the payment card follow-up tends to eliminate the positive aspects of introducing a payment card and produces response patterns that are much in line with those of the open-ended contingent valuation format. However, although a filter will impact on the distribution of willingness-to-pay bids and on the rate of zero and protest bids, the overall impact on the welfare estimate is minor. The outcomes of this study indicate that valuations in the stated preference literature may be, at least in part, a function of the instrument designed to obtain the valuations. Copyright © 2013 John Wiley & Sons, Ltd.

## DO THEY KNOW WHAT IS AT RISK? HEALTH RISK PERCEPTION AMONG THE OBESE

• Health Economics---2014---Joachim Winter, Amelie Wuppermann

ABSTRACT The perception of health risks and risky health behaviors are closely associated. In this paper, we investigate the accuracy of health risk perceptions among obese individuals, aged 50–62 years. We compare subjective risk perceptions for various diseases elicited in the American Life Panel to individual's objective risks of the same diseases. We find that obese individuals significantly underestimate their 5-year risks of arthritis or rheumatism and hypertension, whereas they systematically overestimate their 5-year risks of a heart attack and a stroke. Obese individuals are thus aware of some but not all obesity-related health risks. For given diseases, we document substantial heterogeneities in the accuracy of expectations across individuals. Copyright © 2013 John Wiley & Sons,

## FROM SOCIAL CAPITAL TO HEALTH – AND BACK

 Health Economics---2014---Lorenzo Rocco, Elena Fumagalli, Marc Suhrcke

ABSTRACT We assess the causal relationship between health and social capital, measured by generalized trust, both at the individual and the community level. The paper contributes to the literature in two ways: it tackles the problems of endogeneity and reverse causation between social capital and health by estimating a simultaneous equation model, and it explicitly accounts for mis-reporting in self-reported trust. The inter-relationship is tested using data from the first four waves of the European Social Survey for 25 European countries, supplemented by regional data from Eurostat. Our estimates show that a causal and positive relationship between self-perceived health and social capital does exist and that it acts in both directions. In addition, the magnitude of the structural coefficients suggests that individual social capital is a strong determinant of health, whereas community level social capital plays a considerably smaller role in determining health. Copyright © 2013 John Wiley & Sons, Ltd.

#### MODELING THE EFFECTS OF IMMUNIZATIONS TIMING ON CHILD HEALTH OUTCOMES IN INDIA

 Health Economics---2014---Alok Bhargava, Aravinda M. Guntupalli, Michael Lokshin, Larry L. Howard

SUMMARY Timely vaccinations of children in developing countries are important for reducing morbidity and mortality, which are Millennium Development Goals. However, a majority of children do not possess vaccination cards compiling information on timing. We investigated the benefits of vaccination cards for the uptake of immunizations against diphtheria, pertussis and tetanus (DPT), polio, tuberculosis (BCG), and measles using data on over 200,000 Indian children from the District Level Health and Facility Survey 3. Methodological issues such as whether parents of children with higher morbidity levels may have them vaccinated were investigated. The results from the

models for DPT, polio, measles, and BCG vaccinations showed significant beneficial effects of maternal education, household possessions, and access to health care facilities. Moreover, models for children's ages at the time of vaccination showed significant interactions between maternal education and access to and availability of health care facilities. Finally, models for child morbidity due to diarrhea, cough, and fever showed that timely vaccinations against DPT, access to piped water, and cooking with electricity or natural gas were associated with lower morbidity. Overall, issuing paper or electronic vaccination cards to children is likely to enhance timely uptake of various immunizations thereby reducing child morbidity. Copyright © 2013 John Wiley & Sons, Ltd.

# THERAPEUTIC SUBSTITUTION POST-PATENT EXPIRY: THE CASES OF ACE INHIBITORS AND PROTON PUMP INHIBITORS

• Health Economics---2014---Sotiris Vandoros

This paper examines whether there is a switch in total (originator and generic) consumption after generic entry from molecules that face generic competition towards other molecules of the same class, which are still inpatent. Data from six European countries for the time period 1991 to 2006 are used to study the cases of angiotensin-converting enzyme inhibitors and proton pump inhibitors. Empirical evidence shows that patent expiry of captopril and enalapril led to a switch in total (off-patent originator and generic) consumption towards other in-patent angiotensin-converting enzyme inhibitors, whereas patent expiry of omegrazole led to a switch in consumption towards other proton pump inhibitors. This phenomenon makes generic policies ineffective and results in an increase in pharmaceutical expenditure due to the absence of generic alternatives in the market of in-patent molecules. Copyright © 2013 John Wiley & Sons, Ltd.

## BREAKING THE ADDICTION TO TECHNOLOGY ADOPTION

• Health Economics---2014---Stirling Bryan, Craig Mitton, Cam Donaldson

ABSTRACT A major driver of cost growth in health care is the rapid increase in the utilisation of existing technology and not simply the adoption of new technology. Health economists and their health technology assessment colleagues have become obsessed by technology adoption questions and have largely ignored 'technology management' questions. Technology management would include the life-cycle assessment of technologies in use, to assess their real-world performance; and monitoring of technology indication creep. A rebalancing of focus might serve to encourage a more self-critical and learning culture amongst those involved in technology evaluation analysis. Further, health economists and health technology assessment analysts could make a more significant contribution to system efficiency through rebalancing their efforts away from technology adoption questions towards technology management issues. Copyright © 2014 John Wiley & Sons, Ltd.

# ASSESSING WHETHER THERE IS A CANCER PREMIUM FOR THE VALUE OF A STATISTICAL LIFE

• Health Economics---2014---W Viscusi, Joel Huber, Jason Bell

ABSTRACT This article estimates whether there is a cancer risk premium for the value of a statistical life using stated preference valuations of cancer risks for a large, nationally representative US sample. The present value of an expected cancer case that occurs after a one decade latency period is \$10.85m, consistent with a cancer premium that is 21% greater than the median value of a statistical life estimates for acute fatalities. This cancer premium is smaller than the premium proposed for policy analyses in the UK and the USA. There is also a greater premium for policies that reduce cancer risks to zero and for risk reductions affecting those who perceive themselves to have a greater than average probability of having cancer. Copyright © 2013 John Wiley & Sons, Ltd.

#### MULTILATERAL CONTRACTING AND PREVENTION

 Health Economics---2014---Brandon Pope, Abhijit Deshmukh, Andrew Johnson, James Rohack

ABSTRACT Incentives created through contracts can be used as a means of decentralized control in healthcare systems to ensure more efficient healthcare. In this paper, we consider an insurer contracting with a consumer and a provider. We focus on the tradeoff between ex ante moral hazard and insurance, and consider both consumer and provider incentives in the insurer's contracting problem in the presence of unobservable preventive efforts. We study two cases of provider efforts: those that complement consumer efforts and those that substitute for consumer efforts. In the first case, our results show that the provider must have greater incentives when the consumer is healthy to induce effort and that inducing provider effort allows an insurer to offer a more complete insurance contract relative to the bilateral benchmark. In the second case, we state conditions under which these conclusions continue to hold. On the basis of our findings, we discuss the implications and challenges of multilateral contracting in practice. Copyright © 2013 John Wiley & Sons, Ltd.

## DERIVING TIME DISCOUNTING CORRECTION FACTORS FOR TTO TARIFFS

 Health Economics---2014---Arthur Attema, Werner Brouwer

ABSTRACT The Time Trade-off (TTO) method is a popular method for valuing health state utilities and is frequently used in economic evaluations. However, this method produces utilities that are distorted by several biases. One important bias entails the failure to incorporate time discounting. This paper aims to measure time discounting for health outcomes in a sample representative for the general population. In particular, we estimate TTO scores alongside time discounting in order to derive a set of correction factors that can be employed to correct raw TTO scores for the downward bias caused by time discounting. We find substantial

positive correction factors, which are increasing with the severity of the health state. Furthermore, higher discounting is found when using more severe health states in the discounting elicitation task. More research is needed to further develop discount rate elicitation procedures and test their validity, especially in general public samples. Moreover, future research should investigate the correction of TTO values for other biases as well, such as loss aversion, and to develop a criterion to test the external validity of TTO scores. Copyright © 2013 John Wiley & Sons, Ltd.

#### BIRTH WEIGHT AND FAMILY STATUS REVISITED: EVIDENCE FROM AUSTRIAN REGISTER DATA

 Health Economics---2014---Wolfgang Frimmel, Gerald J. Pruckner

ABSTRACT In this paper, we study the socioeconomic determinants of birth weight, with a focus on the mother's family status. We use Austrian birth register data covering all births between 1984 and 2007 and find that a mother's marriage is associated with a higher birth weight of the newborn, in the range of 40 to 60 g. The significant impact is retained if we include mother fixed effects or use an instrumental variable approach to account for unobserved mother heterogeneity. However, the magnitude of the causal effect (37 g) clearly indicates the importance of selection into marriage. Divorce around pregnancy results in significantly lower birth weights than the birth weights of babies born to single mothers. Family status effects in the 2000s are stronger than they were in the 1980s, and quantile regressions suggest that family effects are more pronounced at the lower quantiles of the birth weight distribution and less pronounced at higher quantiles. We conclude that the life situation of expectant mothers has an important influence on the birth weight of newborns, especially at the lower tail of the birth weight distribution. Copyright © 2013 John Wiley & Sons, Ltd.

## WAITING TIME AND SOCIOECONOMIC STATUS —AN INDIVIDUAL-LEVEL ANALYSIS

 Health Economics---2014---Karin Monstad, Lars Birger Engesæter, Birgitte Espehaug

ABSTRACT Waiting time is a rationing mechanism that is used in publicly funded healthcare systems. From an equity viewpoint, it is regarded as preferable to co-payments. However, long waits are an indication of poor quality of service. To our knowledge, this analysis is the first to benefit from individual-level data from administrative registers to investigate the relationship between waiting time, income, and education. Furthermore, it makes use of an extensive set of medical information that serves as indicators of patient need. Differences in waiting time by socioeconomic status are detected. For men, there is a statistically highly significant negative association between income and waiting time, driven by men in the highest income group, which constitutes 12% of all men. More educated women, that is, those having an education above compulsory schooling, experience lower waiting time than their fellow sisters with the lowest level of education. Copyright © 2013 John Wiley & Sons, Ltd.

#### CAN WE MAKE SMART CHOICES BETWEEN OLS AND CONTAMINATED IV METHODS?

• Health Economics---2014---Anirban Basu,Kwun Chuen Gary Chan

ABSTRACT In the outcomes research and comparative effectiveness research literature, there are strong cautionary tales on the use of instrumental variables (IVs) that may influence the newly initiated to shun this premier tool for casual inference without properly weighing their advantages. It has been recommended that IV methods should be avoided if the instrument is not econometrically perfect. The fact that IVs can produce better results than naïve regression, even in nonideal circumstances, remains underappreciated. In this paper, we propose a diagnostic criterion and related software that can be used by an applied researcher to determine the plausible superiority of IV over an ordinary least squares (OLS) estimator, which does

Given a reasonable lower bound for the bias arising out of an OLS estimator, the researcher can use our proposed diagnostic tool to confirm whether the IV at hand can produce a better estimate (i.e., with lower mean square error) of the true effect parameter than the OLS, without knowing the true level of contamination in the IV. Copyright © 2013 John Wiley & Sons, Ltd.

#### INCREASING OUR UNDERSTANDING OF THE **HEALTH-INCOME GRADIENT IN CHILDREN**

• Health Economics---2014---Jason Fletcher, Barbara Wolfe

ABSTRACT There have been numerous attempts to both document the income-health gradient in children and to understand the nature of the tie. In this paper, we review and summarize existing studies, and then use a unique school-based panel data set from the USA to attempt to further our understanding of the relationship. The long duration (5 observations, 9 years) allows us to add to the understanding of the pattern of the tie, through our ability to test for changes in health status and multiple measures of income, and the school-based nature of the data allow us to add community socioeconomic status to the model. Increasing understanding of the income-health gradient has clear policy implications in terms of effective targeting of interventions to decrease the gradient and hence decrease health disparities among children. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE EFFECT OF DIABETES COMPLICATIONS ON HEALTH-RELATED QUALITY OF LIFE: THE IMPORTANCE OF LONGITUDINAL DATA TO **ADDRESS PATIENT HETEROGENEITY**

• Health Economics---2014---Maria Alva, Alastair Gray, Borislava Mihaylova, Philip Clarke

We estimate the impact of six diabetes-related complications (myocardial infarction, ischaemic heart disease, stroke, heart failure, amputation and visual acuity)

not address the endogeneity of a covariate in question. on quality of life, using seven rounds of EQ-5D questionnaires administered between 1997 and 2007 in the UK Prospective Diabetes Study. The use of crosssectional data to make such estimates is widespread in the literature, being less expensive and easier to collect than repeated-measures data. However, analysis of this dataset suggests that cross-sectional analysis could produce biased estimates of the effect of complications on QoL. Using fixed effects estimators, we show that variation in the quality of life between patients is strongly influenced by time-invariant patient characteristics. Our results highlight the importance of studying quality-of-life changes over time to distinguish between time-invariant determinants of QoL and the effect on QoL of specific events such as diabetes complications. Copyright © 2013 John Wiley & Sons, Ltd.

#### CHILD PROTECTION AND ADULT DEPRESSION: **EVALUATING THE LONG-TERM** CONSEQUENCES OF EVACUATING CHILDREN TO FOSTER CARE DURING WORLD WAR II

• Health Economics---2014---Nina Santavirta, Torsten Santavirta

ABSTRACT This paper combined data collected from war time government records with survey data including background characteristics, such as factors that affected eligibility, to examine the adult depression outcomes of individuals who were evacuated from Finland to temporary foster care in Sweden during World War II. Using war time government records and survey data for a random sample of 723 exposed individuals and 1321 matched unexposed individuals, the authors conducted least squares adjusted means comparison to examine the association between evacuation and adult depression (Beck Depression Inventory). The random sample was representative for the whole population of evacuees who returned to their biological families after World War II. The authors found no statistically significant difference in depressive symptoms during late adulthood between the two groups; for example, the exposed group had a 0.41 percentage points lower average Beck Depression Inventory score than the unexposed group (p = 0.907). This study provides no

support for family disruption during early childhood rary research area, and there are a number of studies because of the onset of sudden shocks elevating depressive symptoms during late adulthood. Copyright © tive preference elicitation methods. However, there are methodological challenges in connecting qualitative

# DISABILITY AND MARGINAL UTILITY OF INCOME: EVIDENCE FROM HYPOTHETICAL CHOICES

• Health Economics---2014---Sven Tengstam

ABSTRACT It is often assumed that disability reduces the marginal utility of income. In this article, individuals' marginal utility of income in two states—(i) paralyzed in both legs from birth and (ii) not mobility impaired at all—is measured through hypothetical choices between imagined lotteries behind a so-called veil of ignorance. The outcomes of the lotteries include both income and disability status. It is found that most people have higher marginal utility when paralyzed than when not mobility impaired at all. The two marginal utilities are evaluated at the same levels of income. Having personal experience of mobility impairment and supporting the Left Party, the Social Democratic Party, the Green Party, or the Liberal Party are associated with having a higher marginal utility when paralyzed. The results suggest that more than full insurance of income losses connected to being disabled is optimal. The results further suggest that, given a utilitarian social welfare function, resources should be transferred to rather than from disabled people. Finally, if the transfers are not large enough to smooth out the marginal utilities of the disabled and the nondisabled, distributional weights based on disability status should be used in cost-benefit analysis. Copyright © 2013 John Wiley & Sons, Ltd.

# Q-ING FOR HEALTH—A NEW APPROACH TO ELICITING THE PUBLIC'S VIEWS ON HEALTH CARE RESOURCE ALLOCATION

• Health Economics---2014---Rachel Baker, John Wildman, Helen Mason, Cam Donaldson

ABSTRACT The elicitation of societal views about three quality measures: functional improvements, the healthcare priority setting is an important, contemponumber of home health visits, and discharges without

that apply either qualitative techniques or quantitative preference elicitation methods. However, there are methodological challenges in connecting qualitative information (what perspectives exist about a subject) with quantitative questions (to what extent are those perspectives 'supported' in a wider population). In this paper, we present an integrated, mixed-methods approach to the elicitation of public perspectives in two linked studies applying Q methodology. In the first study, we identify three broad viewpoints on the subject of health priorities. In the second study, using Q-survey methods, we describe and illustrate methods to investigate the distribution of those views in the wider population. The findings of the second study suggest that no single viewpoint dominates and none of the three views represents a 'minority perspective' . We demonstrate the potential of Q methodology as a methodological framework that can be used to link qualitative and quantitative questions and suggest some advantages of this over other approaches. However, as this represents the first applied study of this kind, there are methodological questions that require further exploration and development. Copyright © 2013 John Wiley & Sons, Ltd.

## COMPETITION AND QUALITY IN HOME HEALTH CARE MARKETS

• Health Economics---2014---Kyoungrae Jung, Daniel Polsky

SUMMARY Market-based solutions are often proposed to improve health care quality; yet evidence on the role of competition in quality in non-hospital settings is sparse. We examine the relationship between competition and quality in home health care. This market is different from other markets in that service delivery takes place in patients' homes, which implies low costs of market entry and exit for agencies. We use 6 years of panel data for Medicare beneficiaries during the early 2000s. We identify the competition effect from within-market variation in competition over time. We analyze three quality measures: functional improvements, the number of home health visits, and discharges without

hospitalization. We find that the relationship between competition and home health quality is nonlinear and its pattern differs by quality measure. Competition has positive effects on functional improvements and the number of visits in most ranges, but in the most competitive markets, functional outcomes and the number of visits slightly drop. Competition has a negative effect on discharges without hospitalization that is strongest in the most competitive markets. This finding is different from prior research on hospital markets and suggests that market-specific environments should be considered in developing polices to promote competition. Copyright © 2013 John Wiley & Sons, Ltd.

#### INCOME AND THE USE OF PRESCRIPTION DRUGS FOR NEAR RETIREMENT INDIVIDUALS

• Health Economics---2014---SØren Leth-Petersen, Niels Skipper, Søren Leth-Petersen

SUMMARY In this paper, we estimate how demand for prescription drugs varies with income for a sample of near retirement individuals. The analysis is based on a novel panel data set with information about the purchase of prescription drugs for a large number of Danish individuals over the period 1995–2003. Our preferred model performs better in an external validation test than models that can be estimated on cross section data. Results indicate that demand does respond to variations in income and that reforms affecting income will therefore affect the use of prescription drugs. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE IMPACT OF MENTAL AND SUBSTANCE-USE DISORDERS ON EMPLOYMENT TRANSITIONS

 Health Economics---2014---Marjorie L. Baldwin, Steven C. Marcus

ABSTRACT The cyclic nature of serious mental illness (SMI) and substance-use disorders (SUD) suggests account that persons with these conditions may experience high under the rates of transitions among employment states (full-time, compart-time, and no employment). This study uses longitudinal data from two waves of the National Epidemi-

ologic Survey of Alcoholism and Related Conditions to examine employment transitions for persons with SMI/SUD relative to a no-disorder control group. Conditional on employment status in Wave I, we estimate conditional odds ratios and marginal effects of each diagnosis on the probabilities of part-time or full-time employment in Wave II, holding constant other characteristics that influence employment decisions. The results show transitions across employment states are common for all groups but more frequent for persons with SMI/SUD than the controls. Persons with SMI are less likely, and persons with SUDs more likely, to transition out of no employment than the controls. Part-time employment is a relatively transitory state, particularly for persons with SMI/SUD, but full-time employment brings a measure of job stability to all groups. After controlling for differences in observable characteristics, the marginal effects of SMI and alcohol disorders on employment transitions are largely significant, but the effects of drug disorders are not. Copyright © 2013 John Wiley & Sons, Ltd.

# 'BEHOLD, A VIRGIN IS WITH HIV!' MISREPORTING SEXUAL BEHAVIOR AMONG INFECTED ADOLESCENTS

• Health Economics---2014---Vidhura Tennekoon,Robert Rosenman

ABSTRACT In four Southern African countries where the HIV prevalence rate is among the highest in the world, 46.4% of a sample of female adolescents infected with HIV report having never engaged in sex. This would indicate either the dominance of non-sexual modes of HIV transmission or rampant misreporting of sexual behavior in the sample. We propose a method to estimate the extent of misreporting and calculate that the true percentages of virgins among the sample of HIV-infected adolescent women is 32.1%. After accounting for misreporting, the contribution of sexual modes of HIV transmission is projected as 50.4%, compared with an estimate of 35.5% if we assume no misreporting. Copyright © 2013 John Wiley & Sons, Ltd

# HETEROGENEITY IN ACTION: THE ROLE OF PASSIVE PERSONALIZATION IN COMPARATIVE EFFECTIVENESS RESEARCH

Health Economics---2014---Anirban Basu, Anupam
 B. Jena, Dana Goldman, Tomas J. Philipson, Robert Dubois

ABSTRACT Despite the goal of comparative effectiveness research (CER) to inform patient-centered care, most studies fail to account for the patient-centeredness of care that already exist in practice, which we denote as passive personalization (PP). Because CER studies describe the average effectiveness of treatments rather than heterogeneity in how individual patients respond to therapies, clinical or coverage policies that respond to CER results may undermine PP in clinical practice and generate worse outcomes. We study this phenomenon empirically in the context of use of antipsychotic drugs in Medicaid patients with schizophrenia using novel instrumental variable methods. We find strong support for PP in clinical practice and demonstrate that the average effects from a CER study cannot be replicated in practice because of the presence of PP. In contrast, providing physicians with evidence to further personalize treatment can produce significant benefits. Copyright © 2013 John Wiley & Sons, Ltd.

#### COMMENT ON 'HETEROGENEITY IN ACTION: THE ROLE OF PASSIVE PERSONALIZATION IN COMPARATIVE EFFECTIVENESS RESEARCH'

• Health Economics---2014---David Epstein

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## RESPONSE TO EPSTEIN'S COMMENT ON "HETEROGENEITY IN ACTION"

Health Economics---2014---Anirban Basu, Anupam
 B. Jena, Dana Goldman, Tomas J. Philipson, Robert Dubois

2014

#### **ANNOUNCEMENT**

 Health Economics---2014---David Bradford, James Burgess, Bruce Hollingsworth, W. David Bradford

2014

## MEASURING THE DISPLACEMENT AND REPLACEMENT OF GOVERNMENT HEALTH EXPENDITURE

• Health Economics---2014---Joseph L. Dieleman, Michael Hanlon

ABSTRACT Research assessing the relationship between government health expenditure and development assistance for health channeled to governments (DAHG) has not considered that this relationship may depend on whether DAHG is increasing or decreasing. We explore this issue using general method of moments estimation and a panel of financial flows data spanning 119 countries and 16 years. Our primary concern is how DAHG affects government health expenditure as source (GHES). We disaggregate the average effect of DAHG and separately identify the effects of increases versus decreases in DAHG. We find that a \$1 year-over-year increase in DAHG leads to a \$0.62 (90% confidence interval (CI): 0.15, 1.09) decrease in GHES, whereas a \$1 year-over-year decrease in DAHG does not have an effect on GHES that is statistically different from 0.67, 1.17). Simulation shows that the zero (CI: displacement of GHES between 1995 and 2010 reduced total government health expenditure by \$152.8 billion (CI: 46.9, 277.6). Moreover, the irregular disbursement of DAHG reduced total government expenditure by \$96.9 billion (CI: 0.5, 212.4). Thus, this research shows that health aid is fungible and highlights the cost of displacement and erratic aid disbursement. © 2013 The Authors. Health Economics published by John Wiley & Sons, Ltd.

# FUNDING HIV-VACCINE RESEARCH IN DEVELOPING COUNTRIES—WHAT IS WRONG WITH IAVI'S RECOMMENDATION?

• Health Economics---2014---Diana Sonntag

ABSTRACT The International AIDS Vaccine Initia- childhood ADHD to foster human capital. Copyright tive recommends targeting resources to research institutions in developing countries in order to accelerate the development of an effective HIV vaccine. In contrast, this paper shows that neither lump-sum nor in-kind transfers are an effective policy. We analyze several financing mechanisms as a means to overcome the lack of depth in HIV-vaccine research in a non-cooperative framework. At first, we point to cases in which financial support is actually counterproductive. Then we analyze whether in-kind transfers are preferable to lump-sum transfers. Even if donors prefer aid in kind because the incentives for moral hazard of recipients can be reduced, we demonstrate that it is effective only if recipients have cost advantages. Copyright © 2013 John Wiley & Sons, Ltd.

#### THE EFFECTS OF CHILDHOOD ADHD ON ADULT **LABOR MARKET OUTCOMES**

• Health Economics---2014---Jason Fletcher

ABSTRACT Although several types of mental illness, including substance abuse disorders, have been linked with poor labor market outcomes, no current research has been able to examine the effects of childhood attention deficit/hyperactivity disorder (ADHD). Because ADHD has become one of the most prevalent childhood mental conditions, it is useful to understand the full set of consequences of the illness. This article uses a longitudinal national sample, including sibling pairs, to show the important labor market outcome consequences of ADHD. The employment reduction is between 10 and 14 percentage points, the earnings reduction is approximately 33%, and the increase in social assistance is 15 points, figures that are larger than many estimates of the Black people/White people earnings gap and the gender earnings gap. A small share of the link is explained by educational attainments and co-morbid health conditions and behaviors. The results also show important differences in labor market consequences by family background and age of onset. These findings, along with similar research showing that ADHD is linked with poor education outcomes and adult crime, suggest the importance of treating

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#### **EX-ANTE AND EX-POST MEASUREMENT OF EQUALITY OF OPPORTUNITY IN HEALTH: A** NORMATIVE DECOMPOSITION

• Health Economics---2014---Paolo Li Donni, Vito Peragine, Giuseppe Pignataro

ABSTRACT This paper proposes and discusses two different approaches to the definition of inequality in health: the ex-ante and the ex-post approach. It proposes strategies for measuring inequality of opportunity in health based on the path-independent Atkinson equality index. The proposed methodology is illustrated using data from the British Household Panel Survev; the results suggest that in the period 2000–2005, at least one-third of the observed health equalities in the UK were equalities of opportunity. Copyright © 2013 John Wiley & Sons, Ltd.

#### **DOES FISCAL DISCIPLINE TOWARDS** SUBNATIONAL GOVERNMENTS AFFECT CITIZENS' WELL-BEING? EVIDENCE ON HEALTH

• Health Economics---2014---Massimiliano cenza, Gilberto Turati

ABSTRACT This paper aims to assess the impact on citizens' well-being of fiscal discipline imposed by the central government on subnational governments. Because healthcare policies involve strategic interactions between different layers of governments in many different countries, we focus on a particular dimension of well-being, namely citizens' health. We model fiscal discipline by considering government expectations of future deficit bailouts from the central government. We then study how these bailout expectations affect the expenditure for healthcare policies carried out by decentralized governments. To investigate this issue, we separate efficient health spending from inefficiencies by estimating an input requirement frontier. This allows us to assess the effects of bailout expectations on both the structural component of health expenditure and its deviations from the 'best practice'. The evidence

from 1993 to 2006) points out that bailout expectations do not significantly influence the position of the frontier, thus not affecting citizens' health. However, they do appear to exert a remarkable impact on excess spending. Copyright © 2013 John Wiley & Sons, Ltd.

#### **HEALTH CARE AND IDEOLOGY: A** RECONSIDERATION OF POLITICAL **DETERMINANTS OF PUBLIC HEALTHCARE FUNDING IN THE OECD**

• Health Economics---2014---Helmut Herwartz.Bernd Theilen

ABSTRACT In this article, we examined if partisan ideology and electoral motives influence public healthcare expenditure (HCE) in countries of the Organization for Economic Cooperation and Development. We distinguished between the effects on the growth of the expenditures and its adjustment to violations of a long-run equilibrium linking HCE with macroeconomic and demographic trends. Regarding the influence of partisan ideology, we found that if governments are sufficiently long in power, right-wing governments spend less on public health than their left-wing counterparts. Furthermore, if a right-wing party governs without coalition partners, it responds more strongly to deviations from the long-run HCE equilibrium than left-wing governments. With regard to electoral motives, we found that health expenditure increases in years of elections. Independent of their partisan ideology, single-party (minority) governments induce higher (lower) growth of public HCE. Each of these political factors by its own may increase (decrease) HCE growth by approximately one percentage point. Given an average annual growth of HCE of approximately 4.1%, political factors turn out to be important determinants of trends in public HCE. Copyright © 2013 John Wiley & Sons, Ltd.

#### WHAT MAKES WORKERS WITH DISABILITIES **HAPPY? THE IMPORTANCE OF NON-PECUNIARY CHARACTERISTICS**

• Health Economics---2014---Ricardo Pagán

from the 15 Italian ordinary statute regions (observed SUMMARY The paper examines the determinants of the levels of job satisfaction reported by non-disabled and disabled workers, with special attention to the contribution of non-pecuniary job aspects. Using longitudinal data from the German Socio-Economic Panel, we estimate job satisfaction equations for non-disabled and disabled workers. The existence of unhealthy environments, hard manual work, capacity to learn and good relationships with colleagues and supervisors all have a greater influence on job satisfaction for disabled workers than for their non-disabled counterparts. Copyright © 2013 John Wiley & Sons, Ltd.

#### PRIORITY SETTING IN GLOBAL HEALTH: **TOWARDS A MINIMUM DALY VALUE**

• Health Economics---2014---Tom Drake

SUMMARY Rational and analytic healthcare decision making employed by many national healthcare-funding bodies could also be expected from global health donors. Cost effectiveness analysis of healthcare investment options presents the effectiveness of a particular action in proportion to the resources required, and cost effectiveness thresholds, while somewhat arbitrary, define the level at which the investment can be considered value for money. Currently, cost effectiveness thresholds reflect the national budget context or willingness-to-pay, which is problematic when making cross-country comparisons. Defining a global minimum monetary value for the disability adjusted life year (DALY) would in effect set a global baseline cost effectiveness threshold. A global minimum DALY value would reflect a universal minimum value on human health, irrespective of a national provider's willingness or ability to pay. A minimum DALY value and associated threshold has both limitations and flaws but is justified on similar grounds to the Millennium Development Goals or the absolute poverty threshold and has the potential to radically improve transparency and efficiency of priority setting in global health. Copyright © 2013 John Wiley & Sons, Ltd.

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### The relationship between baseline health and longitudinal costs of hospital use

• Health Economics---2011---Bram Wouterse,Bert R. Meijboom,Johan J. Polder

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### Health aid and governance in developing countries

• Health Economics---2011---David Fielding

Despite anecdotal evidence that the quality of governance in recipient countries affects the allocation of international health aid, there is no quantitative evidence on the magnitude of this effect, or on which dimensions of governance influence donor decisions. We measure health-aid flows over 1995–2006 for 109 aid recipients, matching aid data with measures of different dimensions of governance and a range of country-specific economic and health characteristics. Everything else being equal, countries with more political rights receive significantly more aid, but so do countries with higher corruption levels. The dependence of aid on political rights, even when we control for other governance indicators, suggests that health aid is sometimes used as an incentive to reward political reforms. Copyright (C) 2010 John Wiley & Sons, Ltd.

### Descriptive validity of alternative intertemporal models for health outcomes: an axiomatic test

• Health Economics---2011---Marjon van der Pol,John Cairns

Intertemporal preferences for health are an important concept when modelling health-affecting behaviour and with respect to informing discounting practice in economic evaluation. The aim of this paper is to test robustly stationarity, the key axiom of the Discounted Utility model, and to test whether the quasihyperbolic or generalised hyperbolic model provides a better description of individual time preferences for health outcomes when stationarity is violated. Very little is known about the descriptive validity of the quasi-hyperbolic model. The different models can lead to different predictions and it is therefore crucial to test which functional form is more descriptively valid. An axiomatic approach is used. Intertemporal preferences were elicited from 203 university students. The results showed that stationarity is violated. Individuals discounted both initial delay and further delays between outcomes at a decreasing rate. This suggests that the quasi-hyperbolic model may not be appropriate to use in intertemporal analyses of health behaviour. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Changes in the relationship between nursing home financial performance and quality of care under public reporting

• Health Economics---2011---Jeongyoung Park,Rachel M. Werner

The relationship between financial performance and quality of care in nursing homes is not well defined and prior work has been mixed. The recent focus on improving the quality of nursing homes through market-based incentives such as public reporting may have changed this relationship, as public reporting provides nursing homes with increased incentives to engage in quality-based competition. If quality improvement activities require substantial production costs, nursing home profitability may become a more important predictor of quality under public reporting.

This study explores the relationship between financial performance and quality of care and test whether this relationship changes under public reporting. Using a 10-year (fiscal years 1997–2006) panel data set of 9444 skilled nursing facilities in the US, this study employs a facility fixed-effects with and without instrumental variables approach to test the effect of finances on quality improvement and correct for potential endogeneity. The results show that better financial performance, as reflected by the 1-year lagged total profit margin, is modestly associated with higher quality but only after public reporting is initiated. These findings have important policy implications as federal and state governments use market-based incentives to increase demand for high-quality care and induce providers to compete based on quality. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### The effects of California minimum nurse staffing laws on nurse labor and patient mortality in skilled nursing facilities

• Health Economics---2011---Patricia K. Tong

This article investigates how a change in minimum nurse staffing regulation for California skilled nursing facilities (SNFs) affects nurse employment and how induced changes in nurse staffing affect patient mortality. In 2000, legislation increased the minimum nurse staffing standard and altered the calculation of nurse staffing, which created incentives to shift employment to lower skilled nurse labor. SNFs constrained by the new regulation increase absolute and relative hours worked by the lowest skilled type of nurse. Using this regulation change to instrument for measured nurse staffing levels, it is determined that increases in nurse staffing reduce on-site SNF patient mortality. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Does procedure profitability impact whether an outpatient surgery is performed at an ambulatory surgery center or hospital?

• Health Economics---2011---Michael Robert Plotzke, Charles Courtemanche

Ambulatory surgery centers (ASCs) are small (typically physician owned) healthcare facilities that specialize in performing outpatient surgeries and therefore compete against hospitals for patients. Physicians who own ASCs could treat their most profitable patients at their ASCs and less profitable patients at hospitals. This paper asks if the profitability of an outpatient surgery impacts where a physician performs the surgery. Using a sample of Medicare patients from the National Survey of Ambulatory Surgery, we find that higher profit surgeries do have a higher probability of being performed at an ASC compared to a hospital. After controlling for surgery type, a 10% increase in a surgery's profitability is associated with a 1.2 to 1.4 percentage point increase in the probability the surgery is performed at an ASC. Copyright (C) 2010 John Wiley & Sons, Ltd.

### **CPT** fee differentials and visit upcoding under Medicare Part B

• Health Economics---2011---Christopher Brunt

HASH(0x100a44580)

## Estimation of life-years gained and cost effectiveness based on cause-specific mortality

• Health Economics---2011---Lois G. Kim, Simon G. Thompson

Cost-effectiveness analysis is usually based on life-years gained estimated from all-cause mortality. When an intervention affects only a few causes of death accounting for a small fraction of all deaths, this approach may lack precision. We develop a novel technique for cost-effectiveness analysis when life-years gained are estimated from cause-specific mortality, allowing for competing causes of death. In the context of randomised trial data, we adjust for other-cause mortality combined across randomised groups. This method yields a greater precision than analysis based on total mortality, and we show application to life-years gained, quality-adjusted life-years gained, incremental costs, and cost effectiveness. In multi-state health economic models, however, mortality from competing causes is commonly derived from national statistics and is assumed to be known and equal across intervention groups. In such models, our method based on cause-specific mortality and standard methods using total mortality give essentially identical estimates and precision. The methods are applied to a randomised trial and a health economic model, both of screening for abdominal aortic aneurysm. A gain in precision for cost-effectiveness estimates is clearly helpful for decision making, but it is important to ensure that 'cause-specific mortality' is defined to include all causes of death potentially affected by the intervention. Copyright (C) 2010 John Wiley & Sons, Ltd.

### What happens to value of information measures as the number of decision options increases?

• Health Economics---2011---Pelham Barton

ARRAY(0x1009e1f98)

### Toward a more universal approach in health valuation

 Health Economics---2011---Benjamin M. Craig, Jan J. V. Busschbach

By polling individual responses to hypothetical scenarios, valuation studies estimate population preferences toward health on a quality-adjusted life year (QALY) scale. The scenarios typically involve trade-offs in time (time trade-off (TTO)), risk (standard gamble (SG)), or number of persons affected (person trade-off (PTO)). This paper revisits the QALY assumptions and provides a coherent health econometric approach that unites TTO, SG, and PTO techniques under a common estimator. The proposed approach avoids the use of ratio statistics in QALY estimation and the common convention of arbitrarily changing trade-off responses. As an example, 34% of the TTO responses from the seminal Measurement and Valuation of Health study were changed in the original UK analysis, which led to substantially lower QALY estimates. As a general rule, if the original estimate is less than 0.5 QALYs, add 0.25 QALYs to get the new estimates. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Breaking bad habits by education – smoking dynamics among Swedish women

 Health Economics---2011---Gustav Kjellsson, Ulf-G. Gerdtham, Carl Hampus Lyttkens

In a dynamic Two-Part Model (2PM), we find the effect of previous smoking on the participation decision to be decreasing with education among Swedish women, i.e. more educated are less state dependent. However, we do not find an analogous effect of education on the conditional intensity of consumption. Copyright (C) 2010 John Wiley & Sons, Ltd.

### Ownership conversion and closure in the nursing home industry

• Health Economics---2011---John Bowblis

Ownership conversions and closures in the nursing home literature have largely been treated as separate issues. This paper studies the predictors of nursing home ownership conversions and closure in a common framework after the implementation of the Prospective Payment System in Medicare skilled nursing facilities. The switch in reimbursement regimes impacted facilities with greater exposure to Medicare and lower efficiency. Facilities that faced greater financial difficulty were more likely to be involved in an ownership conversion or closure, but after controlling for other factors the effect of exposure to Medicare is small. Further, factors that predict conversion were found to vary between not-for-profit and for-profit facilities, while factors that predict closure were the same for each ownership type. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Health plan enrollment and mortality in the Medicare program

Health Economics---2011---Bryan Dowd, Matthew
 L. Maciejewski, Heidi O'Connor, Gerald Riley, Yisong Geng

Prior studies have found that Medicare health maintenance organization (HMO) enrollees have lower mortality (over a fixed observation period) than beneficiaries

in traditional fee-for-service (FFS) Medicare. We use Medicare Current Beneficiary Survey (MCBS) data to compare 2-year predicted mortality for Medicare enrollees in the HMO and FFS sectors using a sample selection model to control for observed beneficiaries characteristics and unobserved confounders. The difference in raw, unadjusted mortality probabilities was 0.5% (HMO lower). Correcting for numerous observed confounders resulted in a difference of 0.6% (HMO higher). Further adjustment for unobserved confounders resulted in an estimated difference of 3.7 and 4.2% (HMO lower), depending on the specification of geographic-fixed effects. The latter result (4.2%) was statistically significant and consistent with prior studies that did not adjust for unobserved confounding. Our findings suggest there may be unobserved confounders associated with adverse selection in the HMO sector, which had a large effect on our mortality estimates among HMO enrollees. An important topic for further research is to identify such confounders and explore their relationship to mortality. The methods presented in this paper represent a promising approach to comparing outcomes between the HMO and FFS sectors, but further research is warranted. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Profit efficiency and ownership of German hospitals

 Health Economics---2011---Annika Herr, Hendrik Schmitz, Boris Augurzky

This paper investigates the cost and profit efficiency of German hospitals and their variation with ownership type. It is motivated by the empirical finding that private (for-profit) hospitals – having been shown to be less cost efficient in the past – on average earn higher profits than public hospitals. We conduct a Stochastic Frontier Analysis on a multifaceted administrative German data set combined with the balance sheets of 541 hospitals of the years 2002–2006. The results show no significant differences in cost efficiency but higher profit efficiency of private than of publicly owned hospitals. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Expansion in markets with decreasing demand-for-profits in the German hospital industry

• Health Economics---2011---Christoph Schwierz

Over the last 20 years, acute-care hospitals in most OECD countries have built up costly overcapacities. From the perspective of economic policy, it is desirable to know how hospitals of different ownership forms respond to changes in demand and are probably best suited to deal with existing overcapacities. This article examines ownership-specific differences in the responsiveness to changes in demand for hospital services in Germany between 1996 and 2006. With respect to the speed of adaptation to increasing demand, the study finds for-profit ownership to be superior to public and nonprofit ownership. However, contrary to other ownership types, for-profits also tend to expand in markets with decreasing demand – mainly through conversions of publicly owned hospitals. Thus, in short term, the privatization of the hospital sector may slow down the reduction of excess capacities and be therefore socially wasteful. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Reimbursement and value-based pricing: stratified cost-effectiveness analysis may not be the last word

• Health Economics---2011---Neil Hawkins, David A. Scott

During recent discussions, it has been argued that stratified cost-effectiveness analysis has a key role in reimbursement decision-making and value-based pricing (VBP). It has previously been shown that when manufacturers are price-takers, reimbursement decisions made in reference to stratified cost-effectiveness analysis lead to a more efficient allocation of resources than decisions based on whole-population cost-effectiveness analysis. However, we demonstrate that when manufacturers are price setters, reimbursement or VBP based on stratified cost-effectiveness analysis may not be optimal. Using two examples – one considering the choice of thrombolytic treatment for specific patient subgroups and the other considering the extension of coverage for

a cancer treatment to include an additional indication – we show that combinations of extended coverage and reduced price can be identified that are advantageous to both payers and manufacturers. The benefits of a given extension in coverage and reduction in price depend both upon the average treatment benefit in the additional population and its size relative to the original population. Negotiation regarding trade-offs between price and coverage may lead to improved outcomes both for health-care systems and manufacturers compared with processes where coverage is determined conditional simply on stratified cost-effectiveness at a given price. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Does doctors' experience matter in LASIK surgeries?

• Health Economics---2011---Juan Contreras, Beomsoo Kim, Ignez M. Tristao

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#### Saving lives versus life-years in rural Bangladesh: an ethical preferences approach

 Health Economics---2011---Olof Johansson-Stenman, Minhaj Mahmud, Peter Martinsson, Olof Johansson-Stenman

HASH(0x1009e36a8)

### External referencing and pharmaceutical price negotiation

 Health Economics---2011---Begoña Garcia Mariñoso, Izabela Jelovac, Pau Olivella

HASH(0x1009eb050)

## Simultaneous relationships between procedure volume and mortality: do they bias studies of mortality at specialty hospitals?

• Health Economics---2011---David Barker, Gary Rosenthal, Peter Cram

Specialty hospitals have lower mortality rates for cardiac revascularization than general hospitals, but previous studies have found that this advantage disappears after adjusting for patient characteristics and hospital procedural volume. Questions have been raised about whether simultaneous relationships between volume and mortality might have biased these analyses. We use two-stage least squares with Hospital Quality Alliance scores and estimated market size as instruments for mortality and volume to control for possible simultaneity. After this adjustment, it is still the case that specialty hospitals do not have an advantage over general hospitals in mortality rates after cardiac revascularization. We find evidence of simultaneity in the relationship between volume and mortality. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Are methamphetamine precursor control laws effective tools to fight the methamphetamine epidemic?

• Health Economics---2011---James Nonnemaker, Mark Engelen, Daniel Shive

One of the most notable trends in illegal substance use among Americans over the past decade is the dramatic growth and spread of methamphetamine use. In response to the dramatic rise in methamphetamine use and its associated burden, a broad range of legislations has been passed to combat the problem. In this paper, we assess the impact of retail-level laws intended to restrict chemicals used to manufacture methamphetamine (methamphetamine precursor laws) in reducing indicators of domestic production, methamphetamine availability, and the consequences of methamphetamine use. Specifically, we examine trends in these indicators of methamphetamine supply and use over a period spanning the implementation of the federal Methamphetamine Anti-Proliferation Act (MAPA) (October 2000) and a more stringent state-level restriction enacted in California (January 2000). The results are mixed in terms of the effectiveness of legislative efforts to control methamphetamine production and use, depending on the strength of the legislation (California Uniform Controlled Substances

Specialty hospitals have lower mortality rates for cardiac revascularization than general hospitals, but previous studies have found that this advantage disappears after adjusting for patient characteristics and hospital procedural volume. Questions have been raised about whether simultaneous relationships between volume and mortality might have biased these analyses. We Sons, Ltd.

### Optimal cost reimbursement of health insurers to reduce risk selection

• Health Economics---2011---Mathias Kifmann,Normann Lorenz

In the absence of a perfect risk adjustment scheme, reimbursing health insurers' costs can reduce risk selection in community-rated health insurance markets. In this paper, we develop a model in which insurers determine the cost efficiency of health care and have incentives for risk selection. We derive the optimal cost reimbursement function, which balances the incentives for cost efficiency and risk selection. For health cost data from a Swiss health insurer, we find that an optimal cost reimbursement scheme should reimburse costs only up to a threshold. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Cumulative effects of job characteristics on health

 Health Economics---2011---Jason Fletcher, Jody L. Sindelar, Shintaro Yamaguchi

We examine whether the job characteristics of physical demands and environmental conditions affect individual's health. Five-year cumulative measures of these job characteristics are used to reflect findings in the biological and physiological literature that indicate that cumulative exposure to hazards and stresses harms health. To create our analytic sample, we merge job characteristics from the Dictionary of Occupational Titles with the PSID data set. We control for early and also lagged health measures and a set of pre-determined characteristics to try to address concerns that individuals self-select into jobs. Our results indicate that

ditions experience declines in their health, though this effect varies by demographic group. We also find some evidence that job characteristics are more detrimental to the health of females and older workers. Finally, we report suggestive evidence that earned income, a job characteristic, partially cushions the health impact of physical demands and harsh environmental conditions for workers. These results are robust to inclusion of occupation fixed effects. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Hospital competition and financial performance: the effects of ambulatory surgery centers

• Health Economics---2011---Kathleen Carey, James F. Burgess, Gary J. Young

Ambulatory surgery centers (ASCs), limited-service alternatives for treating surgery patients not requiring an overnight stay, are a health-care service innovation that has proliferated in the U.S. and other countries in recent years. This paper examines the effects of ASC competition on revenues, costs, and profit margins of hospitals that also provided these services as a subset of their general services in Arizona, California, and Texas during the period 1997–2004. We identified all ASCs operating during the period in the 49 Dartmouth Hospital Referral Regions in the three states. The results of fixed effects models suggested that ASCs are meaningful competitors to general hospitals. We found downward pressure on revenues, costs, and profits in general hospitals associated with ASC presence. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Estimating the extra cost of living for people with disabilities

• Health Economics---2011---J. Cullinan, Brenda Gannon, Sean Lyons

Addressing the extra economic costs of disability is a logical step towards alleviating elements of social exclusion for people with disabilities. This study estimates the long-run economic cost of disability in Ireland in terms of the additional spending needs that arise due

individuals who work in jobs with the 'worst' con- to disability. It defines and estimates models of the private costs borne by families with individuals who have a disability in Ireland when compared with the wider population, both in general and by severity of disability. Our modelling framework is based on the standard of living approach to estimating the cost of disability. We extend on previous research by applying panel ordered probit models to living in Ireland survey data 1995–2001 in order to control for the effects of previous disability and income and correlated unobserved heterogeneity. The approach allows us to quantify, for the first time, the additional long-run economic costs of living associated with disability. Our findings suggest that the extra economic cost of disability in Ireland is large and varies by severity of disability, with important implications for measures of poverty. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Internationally comparable health indices

Economics---2011---Erik • Health Meijer, Arie Kapteyn, Tatiana Andreyeva

One of the most intractable problems in international health research is the lack of comparability of health measures across countries or cultures. We develop a cross-country measurement model for health, in which functional limitations, self-reports of health, and a physical measure are interrelated to construct health indices. To establish comparability across countries, we define the measurement scales by the physical measure while other parameters vary by country to reflect cultural and linguistic differences in response patterns. We find significant cross-country variation in response styles of health reports along with variability in genuine health that is related to differences in national income. Our health indices achieve satisfactory reliability of about 80% and their gradients by age, income, and wealth for the most part show the expected patterns. Moreover, the health indices correlate much more strongly with income and net worth than selfreported health measures. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Evidence of a causal link between health outcomes, insurance coverage, and a policy to expand access: experimental data from children in the Philippines

 Health Economics---2011---Stella Luz Quimbo, John W. Peabody, Riti Shimkhada, Jhiedon Florentino, Orville Jose Solon

In this paper, we present evidence on the health effects of a health insurance intervention targeted to poor children using data from a randomized policy experiment known as the Quality Improvement Demonstration Study. Among study participants, using a difference-in-difference regression model, we estimated a 9–12 and 4–9 percentage point reduction in the likelihood of wasting and having an infection, respectively, as measured by a common biomarker C-reactive Protein. Interestingly, these benefits were not apparent at the time of discharge; the beneficial health effects were manifest several weeks after release from the hospital. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Exploring the influence of proximity to death on disease-specific hospital expenditures: a carpaccio of red herrings

 Health Economics---2011---Albert Wong, Pieter H. M. van Baal, Hendriek C. Boshuizen, Johan J. Polder

HASH(0x1009cea68)

## Combat exposure and mental health: the long-term effects among US Vietnam and Gulf war veterans

 Health Economics---2011---Daniel M. Gade, Jeffrey B. Wenger

Using a random sample of more than 4000 veterans, we test the effects of combat exposure on mental health. We focus on two cohorts of veterans: those who served in Vietnam (1964–1975) and the Gulf War (1990–1991). Combat exposure differed between these groups in intensity, duration and elapsed time since exposure. We

find that combat exposure generally, and exposure to dead, dying, or wounded people, specifically, is a significant predictor of mental health declines as measured by an individual's Mental Component Summary score. Under our general specifications, the negative effects of combat on mental health were larger for Gulf war veterans than for Vietnam veterans as of 2001. These effects persist after controlling for demographic characteristics, insurance coverage, income and assets. Using discrete factor, nonparametric maximum likelihood (DFML) estimation we controlled for unobserved heterogeneity as well as the factors above. In the DFML specifications we find a negative impact of exposure to dead, wounded or dying people for both Gulf and Vietnam veterans, but find no statistically significant effect for combat exposure overall for Vietnam veterans as of 2001. Based on our Gulf war parameters, we estimate that the costs of mental health declines to be between \$87 and \$318 per year for each soldier with combat service and exposure to dead, dying and wounded people. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Do cigarette taxes affect children's body mass index? The effect of household environment on health

• Health Economics---2011---Jennifer Mellor

Several recent studies demonstrate a positive effect of cigarette prices and taxes on obesity among adults, especially those who smoke. If higher cigarette costs affect smokers' weights by increasing calories consumed or increasing food expenditures, then cigarette taxes and prices may also affect obesity in children of smokers. This study examines the link between child body mass index (BMI) and obesity status and cigarette costs using data from the National Longitudinal Survey of Youth-79 (NLSY79). Controlling for various child, mother, and household characteristics as well as child-fixed effects, I find that cigarette taxes and prices increase BMI in the children of smoking mothers. Interestingly, and unlike previous research findings for adults, higher cigarette taxes do not increase the likelihood of obesity in children. These findings are

consistent with a causal mechanism in which higher The simple economics of risk-sharing cigarette costs reduce smoking and increase food expenditures and consumption in the household. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Economic evaluation and the postponement of health care costs

• Health Economics---2011---Pieter H. M. van Baal, Talitha L. Feenstra, Johan J. Polder, Rudolf T. Hoogenveen, Werner Brouwer

HASH(0x1009eb5c0)

#### Using HMOs to serve the Medicaid population: what are the effects on utilization and does the type of HMO matter?

• Health Economics---2011---Bradley Herring, E. Kathleen Adams

States have increasingly used Health Maintenance Organizations (HMOs) to provide medical services to the Medicaid population. However, the effects of these initiatives on total health-care expenses, the mix of utilization, and access to care remain unclear. We examine the effect of changes in Medicaid HMO penetration between 1996 and 2002 on these outcomes using data for the nonelderly Medicaid population in the Community Tracking Study's Household Survey. We develop market-level measures of Medicaid HMO penetration from CMS and InterStudy data, distinguish whether the HMOs specialize in serving the Medicaid population, and use a market fixed-effects model to focus on changes in HMO penetration rates over time. Although limited by imprecise estimates, we find some evidence that utilization and access are related to the market penetration rates of commercial and Medicaid-dominant HMOs, but the pattern of results we observe does not appear to be consistent with welfare improvements. Copyright (C) 2010 John Wiley & Sons, Ltd.

### agreements between the NHS and the pharmaceutical industry

• Health Economics---2011---Pedro Barros

ARRAY(0x100a048a0)

#### Preference-based index measurement of health-related quality of life: when does it reflect only arbitrary settings of the researcher?

• Health Economics---2011---Uwe Konerding

In health economics, health-related quality of life (HRQoL) is often assessed by means of preferencebased index measurement instruments (e.g. EQ-5D, SF-6D, HUI). Each instrument of this kind consists of (1) a multi-attribute classification system for distinguishing health states and (2) a scoring function which assigns a valuation to each health state distinguished within the classification system. Scoring functions are often produced according to the so-called statistical approach which consists of two steps: (1) the valuations of some of the health states of the classification system are empirically determined and (2) the scoring function values for all health states are estimated from the empirically determined valuations using a theoretical model, i.e. an index model. This approach can run into problems because the empirically determined valuations necessarily contain arbitrary settings. This article is concerned with how these arbitrary settings together with the index model affect the final scoring function values. It is shown that for many conceivable index models the final scoring function values have no empirical meaning. Only additive models with a free additive constant are appropriate for representing the information contained in the empirically determined valuation. Only these models should be used within the statistical approach. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Does leaving welfare improve health? Evidence for Germany

• Health Economics---2011---Martin Huber, Michael Lechner, Conny Wunsch

Using exceptionally rich linked administrative and sur- Does the number of choice sets matter? Results vey information on German welfare recipients we investigate the health effects of transitions from welfare to employment and of assignments to welfare-to-work programmes. Applying semi-parametric propensity score matching estimators we find that employment substantially increases (mental) health. The positive effects are mainly driven by males and individuals with bad initial health conditions and are largest for males with poor health. In contrast, the effects of welfare-to-work programmes, including subsidised jobs, are ambiguous and statistically insignificant for most outcomes. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Do state expenditures on tobacco control programs decrease use of tobacco products among college students?

• Health Economics---2011---Christina Czart Ciecierski, Pinka Chatterji, Frank Chaloupka, Henry Wechsler

The objective of this paper is to investigate the effects of state tobacco control program expenditures on individual-level tobacco use behaviors among young adults. Data come from the 1997, 1999 and 2001 waves of the Harvard School of Public Health College Alcohol Study (CAS). Our findings indicate that a higher level of state spending on tobacco control programs in the prior year is associated with a statistically significant increase in the probability that current daily smokers report at least one attempt to quit smoking in the past year. We also find evidence that higher state expenditures on tobacco control programs in the prior year are associated with reductions in the prevalence of daily smoking and 30-day cigar use among college students. We do not find any statistically significant association between state tobacco control program expenditures and the number of attempts to quit smoking among those with at least one attempt, or on the prevalence of smokeless tobacco use in the past month. Copyright (C) 2010 John Wiley & Sons, Ltd.

### from a web survey applying a discrete choice experiment

• Health Economics---2011---Mickael Bech, Trine Kjaer, Jørgen Lauridsen

Optimising the design of discrete choice experiments (DCE) involves maximising not only the statistical efficiency, but also how the nature and complexity of the experiment itself affects model parameters and variance. The present paper contributes by investigating the impact of the number of DCE choice sets presented to each respondent on response rate, selfreported choice certainty, perceived choice difficulty, willingness-to-pay (WTP) estimates, and response variance. A sample of 1053 respondents was exposed to 5, 9 or 17 choice sets in a DCE eliciting preferences for dental services. Our results showed no differences in response rates and no systematic differences in the respondents' self-reported perception of the uncertainty of their DCE answers. There were some differences in WTP estimates suggesting that estimated preferences are to some extent context-dependent, but no differences in standard deviations for WTP estimates or goodness-of-fit statistics. Respondents exposed to 17 choice sets had somewhat higher response variance compared to those exposed to 5 choice sets, indicating that cognitive burden may increase with the number of choice sets beyond a certain threshold. Overall, our results suggest that respondents are capable of managing multiple choice sets – in this case 17 choice sets – without problems. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Boys will be boys: are there gender differences in the effect of sexual abstinence on schooling?

• Health Economics---2011---Joseph J. Sabia, Daniel Rees

A recent study by Sabia and Rees (2009) found that delaying first intercourse leads to a substantial increase in the probability that female students graduate high school. However, it is unclear whether the effect of

tify exogenous variation in the timing of first intercourse using a physical development index available for both females and males. Two-stage least squares estimates suggest that abstaining from sexual intercourse increases the probability that females graduate from high school, but has little effect on the educational attainment of males. This pattern of results is consistent with evidence from previous studies that males are less likely than females to suffer adverse psychological consequences from engaging in sexual intercourse at an early age. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### The relationship between health and GDP in OECD countries in the very long run

• Health Economics---2011---Robyn Swift

This paper uses Johansen multivariate cointegration analysis to examine the relationship between health and GDP for 13 OECD countries over the last two centuries, for periods ranging from 1820–2001 to 1921–2001. A similar, long run, cointegrating relationship between life expectancy and both total GDP and GDP per capita was found for all the countries estimated. The relationships have a significant influence on both total GDP and GPD per capita in most of the countries estimated, with 1% increase in life expectancy resulting in an average 6% increase in total GDP in the long run, and 5% increase in GDP per capita. Total GDP and GDP per capita also have a significant influence on life expectancy for most countries. There is no evidence of changes in the relationships for any country over the periods estimated, indicating that shifts in the major causes of illness and death over time do not appear to have influenced the link between health and economic growth. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### How does cost matter in health-care discrete-choice experiments?

 Health Economics---2011---F. Reed Johnson, Ateesha F. Mohamed, Semra Özdemir, Deborah Α. Phillips

abstinence extends to male students. Here we iden- Willingness-to-pay (WTP) estimates derived from discrete-choice experiments (DCEs) generally assume that the marginal utility of income is constant. This assumption is consistent with theoretical expectations when costs are a small fraction of total income. We analyze the results of five DCEs that allow direct tests of this assumption. Tests indicate that marginal utility often violates theoretical expectations. We suggest that this result is an artifact of a cognitive heuristic that recodes cost levels from a numerical scale to qualitative categories. Instead of evaluating nominal costs in the context of a budget constraint, subjects may recode costs into categories such as 'low', 'medium'. and 'high' and choose as if the differences between categories were equal. This simplifies the choice task, but undermines the validity of WTP estimates as welfare measures. Recoding may be a common heuristic in health-care applications when insurance coverage distorts subjects' perception of the nominal costs presented in the DCE instrument. Recoding may also distort estimates of marginal rates of substitution for other attributes with numeric levels. Incorporating 'cheap talk' or graphic representation of attribute levels may encourage subjects to be more attentive to absolute attribute levels. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Allowing for heterogeneity in monetary subjective well-being valuations

• Health Economics---2011---Emmanouil Mentzakis

Recent research on 'happiness' regression equations has shown how monetary values can be put on the wellbeing effects of many life events (like health problems, marriage or the death of a spouse). Potentially, such work has practical implications for policy-makers and the courts. However, this article argues that we need to be careful in such work to use the appropriate statistical method. It goes beyond previous research and allows for heterogeneity in the subjective well-being scales. Using less restrictive models than the current literature, the article argues that standard linear or Marshall, Kathryn A. ordered response models seem consistently to overstate valuations. With data from the UK, it provides new

monetary estimates of the well-being consequences of That instrument is lousy! In search of agreement a number of health problems, social capital indica- when using instrumental variables estimation in tors, marital status changes and social relationships. substance use research Copyright (C) 2010 John Wiley & Sons, Ltd.

#### A uniform time trade off method for states better and worse than dead: feasibility study of the 'lead time' approach

• Health Economics---2011---Nancy Devlin, Aki Tsuchiya, Ken Buckingham, Carl Tilling

HASH(0x1009c41f0)

#### Foreign-born nurses in the US labor market

• Health Economics---2011---Edward J. Schumacher

This paper examines immigration and the wages of foreign and native nurses in the US labor market. Data from the Current Population Survey identifies a worker's country of birth and the National Survey of Registered Nurses (NSRN) identifies nurses who received their basic training outside the US. In 2004 about 3.1% of the registered nurse (RN) workforce is foreign-born non-US citizens, and 3.3% received their basic education elsewhere. The principal countries of origin are the Philippines, Canada, India, and England. Regression results show a 4.5% lower wage for non-citizen nurses born outside of the US (Canadian nurses are an exception). The wage disadvantage is concentrated on foreign-born nurses new to the US; once a nurse has been in the US for 6 years there is no longer a significant penalty. Results from the NSRN show relatively little overall wage differences between RNs who received their basic training outside versus inside the US, but there is a significant wage disadvantage for those new to the US market. The presence of foreign-trained nurses appears to decrease earnings for native RNs, but the effects are small. Copyright (C) 2010 John Wiley & Sons, Ltd.

Economics---2011---Michael Т. • Health French, Ioana Popovici

2011

#### Determinants of general practitioners' wages in **England**

• Health Economics---2011---Stephen Morris, Rosalind Goudie, Matt Sutton, Hugh Gravelle,Robert Elliott,Arne Hole,Ada Ma,Bonnie Sibbald, Diane Skåtun, Stephen Morris, Stephen Morris

2011

#### Mental health parity legislation, cost-sharing and substance-abuse treatment admissions

• Health Economics---2011---Dhaval Dave, Swati Mukerjee

2011

#### Does consumption of processed foods explain disparities in the body weight of individuals? The case of Guatemala

• Health Economics---2011---Abay Asfaw

2011

#### How to make rural jobs more attractive to health workers. Findings from a discrete choice experiment in Tanzania

• Health Economics---2011---Julie Riise

2011

#### Dangerous omissions: the consequences of ignoring decision uncertainty

• Health Economics---2011---Susan C. Griffin, Karl P. Claxton, Stephen J. Palmer, Mark J. Sculpher

#### Multi-tasking, quality and pay for performance

 Health Economics---2011---Oddvar Kaarboe, Luigi Siciliani

2011

### Importance of health system context for evaluating utilization patterns across systems

Health Economics---2011---James F.
 Burgess, Matthew L. Maciejewski, Chris L.
 Bryson, Michael Chapko, John C. Fortney, Mark
 Perkins, Nancy D. Sharp, Chuan-Fen Liu

2011

#### **Editorial**

Health Economics---2011---Alan Maynard, Andrew Jones

2011

## Discounting and decision making in the economic evaluation of health-care technologies

• Health Economics---2011---Karl Claxton, Mike Paulden, Hugh Gravelle, Werner Brouwer, Anthony Culyer

Discounting costs and health benefits in costeffectiveness analysis has been the subject of recent debate – some authors suggesting a common rate for both and others suggesting a lower rate for health. We show how these views turn on key judgments of fact and value: on whether the social objective is to maximise discounted health outcomes or the present consumption value of health: on whether the budget for health care is fixed; on the expected growth in the cost-effectiveness threshold; and on the expected growth in the consumption value of health. We demonstrate that if the budget for health care is fixed and decisions are based on incremental cost effectiveness ratios (ICERs), discounting costs and health gains at the same rate is correct only if the threshold remains constant. Expecting growth in the consumption value of health does not itself justify differential rates but

implies a lower rate for both. However, whether one believes that the objective should be the maximisation of the present value of health or the present consumption value of health, adopting the social time preference rate for consumption as the discount rate for costs and health gains is valid only under strong and implausible assumptions about values and facts. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Discounting future health benefits: the poverty of consistency arguments

• Health Economics---2011---Erik Nord

In economic evaluation of health care, main stream practice is to discount benefits at the same rate as costs. But main papers in which this practice is advocated have missed a distinction between two quite different evaluation problems: (1) How much does the time of program occurrence matter for value and (2) how much do delays in health benefits from programs implemented at a given time matter? The papers have furthermore focused on logical and arithmetic arguments rather than on real value considerations. These 'consistency arguments' are at best trivial, at worst logically flawed. At the end of the day, there is a sensible argument for equal discounting of costs and benefits rooted in microeconomic theory of rational, utility maximising consumers' saving behaviour. But even this argument is problematic, first because the model is not clearly supported by empirical observations of individuals' time preferences for health, second because it relates only to evaluation in terms of overall individual utility. It does not provide grounds for claiming that decision makers with a wider societal perspective, which may include concerns for fair distribution, need to discount health benefits and costs equally. This applies even if health benefits are measured in monetary terms. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Health insurance, cost expectations, and adverse job turnover

• Health Economics---2011---Randall Ellis, Ching-to Ma

Because less healthy employees value health insurance more than the healthy ones, when health insurance is newly offered job turnover rates for healthier employees decline less than turnover rates for the less healthy. We call this adverse job turnover, and it implies that a firm's expected health costs will increase when health insurance is first offered. Health insurance premiums may fail to adjust sufficiently fast because state regulations restrict annual premium changes, or insurers are reluctant to change premiums rapidly. Even with premiums set at the long run expected costs, some firms may be charged premiums higher than their current expected costs and choose not to offer insurance. High administrative costs at small firms exacerbate this dynamic selection problem. Using 1998–1999 MEDSTAT MarketScan and 1997 Employer Health Insurance Survey data, we find that expected employee health expenditures at firms that offer insurance have lower within-firm and higher between-firm variance than at firms that do not. Turnover rates are systematically higher in industries in which firms are less likely to offer insurance. Simulations of the offer decision capturing between-firm health-cost heterogeneity and expected turnover rates match the observed pattern across firm sizes well. Copyright (C) 2010 John Wiley & Sons, Ltd.

### The effect of education on health among US residents in relation to country of birth

• Health Economics---2011---Bosu Seo,Benjamin Senauer

This research explores the impact of education on health in relation to an individual's country of birth using the US National Health and Nutrition Examination Surveys for 2001–2004. We analyze health equations that relate health to education and other variables. Health is measured in terms of self-reported overall health, an index of biological risk factors, and body mass index. The primary hypothesis tested is whether education has a greater impact on immigrants' productive and allocative efficiency, because of their need to learn about how to remain healthy and access appropriate health care in a new environment. The em-

pirical results indicate that for US residents, who were foreign-born, education is associated with a greater beneficial effect on every health outcome compared to those born in the United States. More education is related to an even greater positive effect on health for immigrants from Mexico, the origin of most immigrants, than from other countries. These results provide additional support for the portions of the 2007 Immigration Reform Act rejected by the US Congress, which placed a higher priority on education and job skills than current law. Since increased education and improved health are associated, such policy reform would help reduce the demands on the US health-care system. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Measurement of QALYS and the welfare implications of survivor consumption and leisure forgone

• Health Economics---2011---John A. Nyman

HASH(0x1009c12c0)

#### Welfare, QALYs, and costs - a comment

• Health Economics---2011---Bengt Liljas

HASH(0x100a16728)

### The impact of research on hospital costs of care: an empirical study

 Health Economics---2011---Julia Bonastre, Marc Le Vaillant, Gerard De Pouvourville

The goal of this study was to examine the impact of research activities on hospital costs and lengths of stay in French public hospitals. Our data consist of a random sample of 30 000 inpatient stays in 38 hospitals that were extracted from the French Hospital Cost Survey database. Hospital characteristics were added using data from a French national survey and performing a bibliometric study. This is a retrospective study of hospitalizations. We used multilevel modelling. We considered separate models to explain the cost per day and the length of hospital stay (LOS). Research output was defined based on the quartiles of the distribution of

produced in our sample of hospitals over a 6-year period. Research production was associated with a higher cost of care. The cost per day was 19% higher in hospitals in the 3rd quartile and 42% higher in hospitals in the 4th quartile compared to that in hospitals that were not involved in research activities. This result was sensitive to the type of care under consideration. The effect was stronger in oncology but not significant in routine care. Scientific production did not impact the LOS. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Costs and quality of hospitals in different health care systems: a multi-level approach with propensity score matching

• Health Economics---2011---Jonas Schreyögg, Tom Stargardt, Oliver Tiemann

Cross-country comparisons of costs and quality between hospitals are often made at the macro level. The goal of this study was to explore methods to compare micro-level data from hospitals in different health care systems. To do so, we developed a multi-level framework in combination with a propensity score matching technique using similarly structured data for patients receiving treatment for acute myocardial infarction in German and US Veterans Health Administration hospitals. Our case study shows important differences in results between multi-level regressions based on matched and unmatched samples. We conclude that propensity score matching techniques are an appropriate way to deal with the usual baseline imbalances across the samples from different countries. Multi-level models are recommendable to consider the clustered structure of the data when patient-level data from different hospitals and health care systems are compared. The results provide an important justification for exploring new ways in performing health system comparisons. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### Welfare properties of restrictions to health care based on cost effectiveness

• Health Economics---2011---Laura Levaggi, Rosella Levaggi

the number of impact-weighted scientific publications. In this note we explore the welfare properties of access restrictions to health care based on cost effectiveness. We show that such instrument can improve the average effectiveness of health care, but it is optimal only under specific assumptions relating to the shape of the welfare function and the utility of health care. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### Discounting future health gains: an empirical enquiry into the influence of growing life expectancy

• Health Economics---2011---Ana Bobinac, Werner Brouwer, Job van Exel

We tested the influence of the growth in life expectancy over time on social time preferences for health. Growing life expectancy of future generations should raise social discount rates for health because of diminishing marginal utility of additional health gains and equity reasons reflecting the desire for a more equitable distribution of benefits over generations. This influence has, however, been largely ignored in empirical studies. We provide a first comprehensive analysis of how time preferences for health gains vary with projected growth rates, indicating the importance of subjective expectations about the growth in life expectancy in the elicitation of social time preference. Six hundred and fifty-six respondents, representative of the Dutch population, completed one of four questionnaires, differing in the projected growth in life expectancy. Results showed that individuals discount future health gains at different rates, depending on the latency period and on the projected or expected growth in life expectancy. As hypothesized, discount rates increased with higher growth rates. The association between observed discount rates and expectations regarding future life expectancy was confirmed, suggesting that discount rates for health may depend on future life expectancy. In light of our results, specifying life expectancy of future generations in time preference exercises appears appropriate. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Erratum: Estimating lifetime or episode-of-illness costs under censoring

• Health Economics---2011---Anirban Basu, Willard Manning

2011

#### **Evaluating innovative health programs**

• Health Economics---2010---Andrew Jones,Lyn Squire,Ranjeeta Thomas

2010

### Impact evaluation of India's 'Yeshasvini' community-based health insurance programme

• Health Economics---2010---Aradhna Aggarwal

Using propensity score matching techniques, the study evaluates the impact of India's Yeshasvini communitybased health insurance programme on health-care utilisation, financial protection, treatment outcomes and economic well-being. The programme offers free outpatient diagnosis and lab tests at discounted rates when ill, but, more importantly, it covers highly catastrophic and less discretionary in-patient surgical procedures. For its impact evaluation, 4109 randomly selected households in villages in rural Karnataka, an Indian state, were interviewed using a structured questionnaire. A comprehensive set of indicators was developed and the quality of matching was tested. Generally, the programme is found to have increased utilisation of health-care services, reduced out-of-pocket spending, and ensured better health and economic outcomes. More specifically, however, these effects vary across socio-economic groups and medical episodes. The programme operates by bringing the direct price of health-care down but the extent to which this effectively occurs across medical episodes is an empirical issue. Further, the effects are more pronounced for the better-off households. The article demonstrates that community insurance presents a workable model for providing high-end services in resource-poor settings through an emphasis on accountability and local

management. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Teacher training and HIV/AIDS prevention in West Africa: regression discontinuity design evidence from the Cameroon

• Health Economics---2010---Jean-Louis Arcand, Eric Djimeu Wouabe

We assess the impact on teenage childbearing as well as student knowledge, attitudes, and behavior of a typical HIV/AIDS teacher training program in the Cameroon. Applying a regression discontinuity design identification strategy based on the key administrative criterion that determined program deployment, we find that 15–17 year old girls in teacher training schools are between 7 and 10 percentage points less likely to have started childbearing, an objective proxy for the incidence of unprotected sex. They are also significantly more likely to have used a condom during their last sexual intercourse. For 12–13 year old girls, the likelihood of self-reported abstinence and condom use is also significantly higher in treated schools, while the likelihood of having multiple partners is significantly lower. Copyright (C) 2010 John Wiley & Sons, Ltd.

## The short-term impacts of a schooling conditional cash transfer program on the sexual behavior of young women

 Health Economics---2010---Sarah Baird, Ephraim Chirwa, Craig McIntosh, Berk Özler

Recent evidence suggests that conditional cash transfer (CCT) programs for schooling are effective in raising school enrolment and attendance. However, there is also reason to believe that such programs can affect other outcomes, such as the sexual behavior of their young beneficiaries. Zomba Cash Transfer Program is a randomized ongoing CCT intervention targeting young women in Malawi that provides incentives (in the form of school fees and cash transfers) to current schoolgirls and recent dropouts to stay in or return to school. An average offer of US\$10/month conditional on satisfactory school attendance – plus direct payment

of secondary school fees – led to significant declines in early marriage, teenage pregnancy, and self-reported sexual activity among program beneficiaries after just one year of program implementation. For program beneficiaries who were out of school at baseline, the probability of getting married and becoming pregnant declined by more than 40 and 30%, respectively. In addition, the incidence of the onset of sexual activity was 38% lower among all program beneficiaries than the control group. Overall, these results suggest that CCT programs not only serve as useful tools for improving school attendance but may also reduce sexual activity, teen pregnancy, and early marriage. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### An impact evaluation of the Safe Motherhood Program in China

• Health Economics---2010---Xing Lin Feng,Guang Shi,Yan Wang,Ling Xu,Hao Luo,Juan Shen,Hui Yin,Yan Guo

Using 11 years of county-level panel data, fixed effect models are estimated to evaluate the impact of the Safe Motherhood (SM) Program in China. Propensity score matching is used to select comparable factual and counterfactual counties. Out of 2013 counties in China, 283 are selected for the treatment group and 1051 for the control group. The results support the causal relationship between the program and its targeted outcomes and the partial effects increases as years of exposure in the program: 7 years' treatment of the program increases hospital delivery rate by 3.992 per 100 live births and decreases Maternal mortality ratio (MMR) due to hemorrhage by 10.229 per 100 000 live births. Further modeling supports the conclusion that the program reduces MMR by enhancing MCH care. With an average annual incremental unit cost for the program of about 318.0 thousand RMB (39.8 thousand USD) per county, we conclude that the SM Program is effective in reducing MMR through the enhancement of hospital delivery. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Ghana's national health insurance scheme in the context of the health MDGs: an empirical evaluation using propensity score matching

 Health Economics---2010---Joseph Mensah, Joseph R. Oppong, Christoph Schmidt

HASH(0x1009dca88)

### **Evaluation of the impact of the Mother and Infant Health Project in Ukraine**

 Health Economics---2010---Olena Nizalova, Maria Vyshnya

This paper exploits a unique opportunity to evaluate the impact of the quality change in the labor and delivery services brought about by the Mother and Infant Health Project in Ukraine. Employing program evaluation methods, we find that the administrative units participating in the Project have exhibited greater improvements in both maternal and infant health compared to the control ones. Among the infant health characteristics, the MIHP impact is most pronounced for infant mortality resulting from deviations in perinatal period. As for the maternal health, the MIHP is the most effective at combating anemia, blood circulation and urinary-genital system complications, and late toxicosis. The analysis suggests that the effects are due to early attendance of antenatal clinics, lower share of C-sections, and greater share of normal deliveries. Preliminary cost-effectiveness analysis shows enormous benefit per dollar spent on the project: the cost to benefit ratio is one to 97 taking into account both maternal and infant lives saved as well as cost savings due to the changes in labor and delivery practices. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Evaluating the impact of community-based health interventions: evidence from Brazil's Family Health Program

• Health Economics---2010---Romero Rocha, Rodrigo Soares

This paper analyzes the direct and indirect impacts of Brazil's Family Health Program, using municipality level mortality data from the Brazilian Ministry of Health, and individual level data from the Brazilian household survey. We estimate the effects of the program on mortality and on household behavior related to child labor and schooling, employment of adults, and fertility. We find consistent effects of the program on reductions in mortality throughout the age distribution, but mainly at earlier ages. Municipalities in the poorest regions of the country benefit particularly from the program. For these regions, implementation of the program is also robustly associated with increased labor supply of adults, reduced fertility, and increased school enrollment. Evidence suggests that the Family Health Program is a highly cost-effective tool for improving health in poor areas. Copyright (C) 2010 John Wiley & Sons, Ltd.

### Family planning and fertility decline in rural Iran: the impact of rural health clinics

 Health Economics---2010---Djavad Salehi-Isfahani,M. Jalal Abbasi-Shavazi,Meimanat Hosseini-Chavoshi,Mohammad Jalal Abbasi-Shavazi,Djavad Salehi-Isfahani

During the first few years of the Islamic Revolution of 1979, and aided by pro-natal government policies, Iranian fertility was on the rise. In a reversal of its population policy, in 1989, the government launched an ambitious and innovative family planning program aimed at rural families. By 2005, the program had covered more than 90% of the rural population and the average number of births per rural woman had declined to replacement level from about 8 births in the mid 1980s. In this paper, we evaluate the impact of a particular feature of the program – health houses - on rural fertility, taking advantage of the variation in the timing of their construction across the country. We use three different methods to obtain a range of estimates for the impact of health houses on villagelevel fertility: difference-in-differences (DID), matching DID, and length of exposure. We find estimates of impact ranging from 4 to 20% of the decline in fertility during 1986–1996. Copyright (C) 2010 John Wiley & Sons, Ltd.

## level mortality data from the Brazilian Ministry of Social security health insurance for the informal Health, and individual level data from the Brazilian sector in Nicaragua: a randomized evaluation

 Health Economics---2010---Rebecca Thornton, Laurel E. Hatt, Erica M. Field, Mursaleena Islam, Freddy Solís Diaz, Martha Azucena González

This article presents the results from an experimental evaluation of a voluntary health insurance program for informal sector workers in Nicaragua. Costs of the premiums as well as enrollment location were randomly allocated. Overall, take-up of the program was low, with only 20% enrollment. Program costs and streamlined bureaucratic procedures were important determinants of enrollment. Participation of local microfinance institutions had a slight negative effect on enrollment. One year later, those who received insurance substituted toward services at covered facilities and total out-ofpocket expenditures fell. However, total expenditures fell by less than the insurance premiums. We find no evidence of an increase in health-care utilization among the newly insured. We also find very low retention rates after the expiration of the subsidy, with less than 10% of enrolless still enrolled after one year. To shed light on the findings from the experimental results, we present qualitative evidence of institutional and contextual factors that limited the success of this program. Copyright (C) 2010 John Wiley & Sons, Ltd.

### Health expenditure and income in the United States

• Health Economics---2010---Francesco Moscone, E. Tosetti

This paper investigates the long-run economic relationship between health care expenditure and income in the US at a State level. Using a panel of 49 US States over the period 1980–2004, we study the non-stationarity and co-integration between health spending and income, ultimately measuring income elasticity of health care. The tests we adopt allow us to explicitly control for cross-section dependence and unobserved heterogeneity. Specifically, in our regression equations we assume that the error has a multifactor structure,

which may capture global shocks and local spill overs in health expenditure. Our results suggest that health care is a necessity rather than a luxury, with an elasticity much smaller than that estimated in other US studies. Further, we detect significant spatial concentration in US health spending. Our broad perspective of cross-section dependence as well as the methods used to capture it give new insights on the debate over the relationship between health spending and income. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### A two-stage estimation of hospital quality using mortality outcome measures: an application using hospital administrative data

 Health Economics---2010---Chew Chua, Alfons Palangkaraya, Jongsay Yong

This paper proposes a method of deriving a quality indicator for hospitals using mortality outcome measures. The method aggregates any number of mortality outcomes into a single indicator via a two-stage procedure. In the first stage, mortality outcomes are risk-adjusted using a system of seemingly unrelated regression equations. These risk-adjusted mortality rates are then aggregated into a single quality indicator in the second stage via weighted least squares. This method addresses the dimensionality problem in measuring hospital quality, which is multifaceted in nature. In addition, our method also facilitates further analyses of determinants of hospital quality by allowing the resulting quality estimates be associated with hospital characteristics. The method is applied to a sample of heart-disease episodes extracted from hospital administrative data from the state of Victoria, Australia. Using the quality estimates, we show that teaching hospitals and large regional hospitals provide higher quality of care than other hospitals and this superior performance is related to hospital case-load volume. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Effects of venue-specific state clean indoor air laws on smoking-related outcomes

• Health Economics---2010---Marianne Bitler, Christopher S. Carpenter, Madeline

#### Zavodny

A large literature has documented relationships between state clean indoor air laws (SCIALs) and smoking-related outcomes in the United States. These laws vary within states over time and across venues such as schools, government buildings, and bars. Few studies, however, have evaluated whether the effects of SCIALs are plausibly concentrated among workers who should have been directly affected because they worked at locations covered by the venue-specific restrictions. We fill this gap in the literature using data on private sector workers, government employees, school workers, eating and drinking place workers, and bartenders from the 1992–2007 Tobacco Use Supplements to the Current Population Survey. Our quasi-experimental models indicate robust effects of SCIALs restricting smoking in bars: these laws significantly increased the presence of workplace smoking restrictions as reported by bartenders and reduced the fraction of bartenders who smoke. We do not, however, find that SCIALs in private workplaces, government workplaces, schools, or restaurants increased the presence of workplace smoking restrictions among groups of workers working in venues covered by these laws. This suggests that the smoking reductions associated with SCIALs in previous research are unlikely to have been directly caused by effects of workplace smoking restrictions on workers. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### Does health affect portfolio choice?

• Health Economics---2010---David Love, Paul A. Smith

A number of recent studies find that poor health is empirically associated with a safer portfolio allocation. It is difficult to say, however, whether this relationship is truly causal. Both health status and portfolio choice are influenced by unobserved characteristics such as risk attitudes, impatience, information, and motivation, and these unobserved factors, if not adequately controlled for, can induce significant bias in the estimates of asset demand equations. Using the 1992–2006 waves of the Health and Retirement Study, we investigate how

much of the connection between health and portfolio choice is causal and how much is due to the effects of unobserved heterogeneity. Accounting for unobserved heterogeneity with fixed effects and correlated random effects models, we find that health does not appear to significantly affect portfolio choice among single households. For married households, we find a small effect (about 2–3 percentage points) from being in the lowest of five self-reported health categories. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Professionalism and the know-do gap: exploring intrinsic motivation among health workers in Tanzania

• Health Economics---2010---Kenneth Leonard, Melkiory C. Masatu

Professionalism can be defined generally as adhering to the accepted standards of a profession and placing the interests of the public above the individual professional's immediate interests. In the field of medicine, professionalism should lead at least some practitioners in developing countries to effectively care for their patients despite the absence of extrinsic incentives to do so. In this study we examine the behavior of 80 practitioners from the Arusha region of Tanzania for evidence of professionalism. We show that about 20% of these practitioners behave professionally, and almost half of those who do so practice in the public sector. These professional health care workers provide high quality care even when they work in an environment that does not reward this effort, a finding that has important implications for the use of performance-based incentives. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Are cardiovascular diseases bad for economic growth?

• Health Economics---2010---Marc Suhrcke, Dieter Urban

## Bridging the gap: health equality and the deficit framing of health

• Health Economics---2010---Alec Morton

The analyst tasked with measuring population health, with appraising healthcare investments, or allocating healthcare resources, may frame their task in one of two possible ways: either as being concerned with health assets (e.g. health expectancy or stock of QALYs), or with health deficits (a 'health gap', analogous to the poverty gap). In this paper, we discuss the consequences of taking the asset or the deficit concept as one's basic building block in developing a health measurement system when one has concerns about equitable distribution. We conclude that building metrics from a primitive health gap concept is possible and indeed may offer insights not otherwise easily accessible. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Hypothetical versus real preferences: results from an opportunistic field experiment

• Health Economics---2010---Stirling Bryan,Sue Jowett

Over recent years there has been renewed interest in cost-benefit analysis (CBA) in health care but the 'hypothetical bias' concern (i.e. the belief that WTP values overstate real preferences) is a remaining anxiety. This paper reports new empirical data comparing hypothetical and real preferences in a health care context, using the clinical setting of patient self-management (PSM) of anticoagulation (warfarin) therapy. The data offer considerable support for the use of WTP and CBAs in a self-management health care context; the hypothetical bias hypothesis is not supported by our data. The generalisability of these results to other health care settings needs to be explored. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Erratum: Valuing health technologies at NICE: recommendations for improved incorporation of treatment value in HTA

 Health Economics---2010---Dana Goldman, Darius Lakdawalla, Tomas J. Philipson, Wesley Yin

### Health-care reform in Australia: advancing or side-stepping?

• Health Economics---2010---Jane Hall

No Abstract

## Estimating the impacts of cigarette taxes on youth smoking participation, initiation, and persistence: empirical evidence from Canada

• Health Economics---2010---Anindya Sen, Tony Wirjanto

In response to the widespread availability of illegal contraband, the federal and five provincial governments in Canada implemented a 40-60% reduction to cigarette excise taxes in February 1994. We exploit this unique and discrete policy shock by estimating the effects of cigarette taxes on youth smoking with data from the 1992-1996 Waterloo Smoking Prevention Program, 1991 General Social Survey, 1994 Youth Smoking Survey, 1996-1997 and 1998-1999 National population Health Surveys, and the 1999 Canadian Tobacco Use Monitoring Survey. Empirical estimates yield daily and occasional participation elasticities from 0.10 to0.14,which is consistent with findings from recent U.S.-based research. A key contribution of this research is in the analysis of lower taxes on a panel of 591 youths from the Waterloo Smoking Prevention Program, who did not smoke in 1993, but 43% of whom confirm smoking participation following the tax reduction. Employing these data reveals elasticities from 0.2 to 0.5, which suggest that even significant and discrete changes in taxes might have limited impacts on the initiation and persistence of youth smoking. Copyright © 2009 John Wiley & Sons, Ltd.

### Marijuana use and high school dropout: the influence of unobservables

• Health Economics---2010---Daniel F. McCaffrey,Rosalie Liccardo Pacula,Bing Han,Phyllis Ellickson In this study, we reconsider the relationship between heavy and persistent marijuana use and high school dropout status. Using a unique prospective panel study of over 4500 7th grade students from South Dakota who are followed through high school, we developed propensity score weights to adjust for baseline differences found to exist before marijuana initiation occurs for most students (7th grade). We then used weighted logistic regression that incorporates these propensity score weights to examine the extent to which timevarying factors, including substance use, also influence the likelihood of dropping out of school. We found a positive association between marijuana use and dropping out (OR=5.6, RR=3.8), over half of which was explained by prior differences in observational characteristics and behaviors. The remaining association (OR=2.4, RR=1.7) became statistically insignificant when measures of cigarette smoking were included in the analysis. Because cigarette smoking is unlikely to seriously impair cognition, we interpret this result as evidence that the association between marijuana use and high school dropout is unlikely to be due to its adverse effects on cognition. We then explored which constructs drive this result, determining that they are time-varying parental and peer influences. Copyright © 2009 John Wiley & Sons, Ltd.

## How sensitive is physician performance to alternative compensation schedules? Evidence from a large network of primary care clinics

• Health Economics---2010---Lorens A. Helmchen, Anthony Lo Sasso

Despite its centrality for the provision of health care, physician compensation remains understudied, and existing studies either fail to control for time trends, cover small samples from highly particular settings, or examine empirically negligible changes in reward levels. Using a four-year sample of 59 physicians and 1.1 million encounters, we study how physicians at a network of primary care clinics responded when their salaried compensation plan was replaced with a lower salary plus substantial piece rates for encounters and select procedures. Although patient characteristics remained

61%, both by increasing encounters per day and days worked at the network, and increased procedures to the maximum reimbursable level. Copyright © 2009 John Wiley & Sons, Ltd.

#### The influence of traffic-related pollution on individuals' life-style: results from the BRFSS

• Health Economics---2010---Cinzia Di Novi

This paper employs the Behavioral Risk Factor Surveillance System (2001) data in conjunction with the Environmental Protection Agency's Air Quality System data to investigate how air pollution caused by motor vehicle emissions affects the likelihood of good health and the amount of health investments. Models are estimated using three different measures of overall health: a measure of self-assessed health and two health outcome indicators (asthma and blood pressure). A multivariate probit approach is used to estimate recursive systems of equations for self-assessed health, health outcomes and life-styles. The most interesting result concerns the influence of pollution on health-improving life-style choices: only if traffic pollution is in the 'satisfactory range' (AQI level at or below 100), individuals will have incentive to invest in health. Copyright © 2009 John Wiley & Sons, Ltd.

#### The possible macroeconomic impact on the UK of an influenza pandemic

• Health Economics---2010---Marcus R. Keogh-Brown, Simon Wren-Lewis, W. John Edmunds, Philippe Beutels, Richard D. Smith

Little is known about the possible impact of an influenza pandemic on a nation's economy. We applied the UK macroeconomic model 'COMPACT' to epidemiological data on previous UK influenza pandemics, and extrapolated a sensitivity analysis to cover more extreme disease scenarios. Analysis suggests that the economic impact of a repeat of the 1957 or 1968 pandemics, allowing for school closures, would be shortlived, constituting a loss of 3.35 and 0.58% of GDP in the first pandemic quarter and year, respectively. Wiley & Sons, Ltd.

unchanged, physicians increased encounters by 11 to A more severe scenario (with more than 1% of the population dying) could yield impacts of 21 and 4.5%, respectively. The economic shockwave would be gravest when absenteeism (through school closures) increases beyond a few weeks, creating policy repercussions for influenza pandemic planning as the most severe economic impact is due to policies to contain the pandemic rather than the pandemic itself. Accounting for changes in consumption patterns made in an attempt to avoid infection worsens the potential impact. Our mild disease scenario then shows first quarter first year reductions in GDP of 9.5|2.5%, compared with our severe scenario reductions of 29.5|6%. These results clearly indicate the significance of behavioural change over disease parameters. Copyright © 2009 John Wiley & Sons, Ltd.

#### Effects of state-level public spending on health on the mortality probability in India

• Health Economics---2010---Mansour Farahani,S. V. Subramanian, David Canning

This study uses the second National Family Health Survey of India to estimate the effect of state-level public health spending on mortality across all age groups, controlling for individual, household, and state-level covariates. We use a state's gross fiscal deficit as an instrument for its health spending. Our study shows a 10% increase in public spending on health in India decreases the average probability of death by about 2%, with effects mainly on the young, the elderly, and women. Other major factors affecting mortality are rural residence, household poverty, and access to toilet facilities. Copyright © 2009 John Wiley & Sons, Ltd.

#### The effect of lone motherhood on the smoking behavior of young adults

• Health Economics---2010---Marco Francesconi, Stephen Jenkins, Thomas Siedler

We provide evidence that living with an unmarried mother during childhood raises smoking propensities for young adults in Germany. Copyright © 2010 John

## Valuing health technologies at nice: recommendations for improved incorporation of treatment value in HTA

• Health Economics---2010---Dana Goldman, Darius Lakdawalla, Tomas J. Philipson, Wesley Yin

2010

### The efficiency frontier approach to economic evaluation of health-care interventions

 Health Economics---2010---J. Jaime Caro, Erik Nord, Uwe Siebert, Alistair McGuire, Maurice McGregor, David Henry, Gérard de Pouvourville, Vincenzo Atella, Peter Kolominsky-Rabas

Background: IQWiG commissioned an international panel of experts to develop methods for the assessment of the relation of benefits to costs in the German statutory health-care system. Proposed methods: The panel recommended that IQWiG inform German decision makers of the net costs and value of additional benefits of an intervention in the context of relevant other interventions in that indication. To facilitate guidance regarding maximum reimbursement, this information is presented in an efficiency plot with costs on the horizontal axis and value of benefits on the vertical. The efficiency frontier links the interventions that are not dominated and provides guidance. A technology that places on the frontier or to the left is reasonably efficient, while one falling to the right requires further justification for reimbursement at that price. This information does not automatically give the maximum reimbursement, as other considerations may be relevant. Given that the estimates are for a specific indication, they do not address priority setting across the health-care system. Conclusion: This approach informs decision makers about efficiency of interventions, conforms to the mandate and is consistent with basic economic principles. Empirical testing of its feasibility and usefulness is required. Copyright © 2010 John Wiley & Sons, Ltd.

## The efficiency frontier approach to economic evaluation: will it help German policy making?

• Health Economics---2010---Werner Brouwer,Frans F. H. Rutten

No Abstract

## Sins of omission and obfuscation: IQWIG's guidelines on economic evaluation methods

• Health Economics---2010---Mark Sculpher, Karl Claxton

No Abstract

#### IQWiG methods - a response to two critiques

 Health Economics---2010---J. Jaime Caro, Erik Nord, Uwe Siebert, Alistair Mcguire, Maurice Mcgregor, David Henry, Gerard de Pouvourville, Vincenzo Atella, Peter Kolominsky-Rabas

2010

## Some essential clarifications: IQWiG comments on two critiques of the efficiency frontier approach

 Health Economics---2010---Charalabos-Markos Dintsios, Andreas Gerber

2010

#### Search costs and Medicare plan choice

 Health Economics---2010---Ian McCarthy, Rusty Tchernis

There is increasing evidence suggesting that Medicare beneficiaries do not make fully informed decisions when choosing among alternative Medicare health plans. To the extent that deciphering the intricacies of alternative plans consumes time and money; the Medicare health plan market is one in which search costs may play an important role. To account for this, we split beneficiaries into two groups - those who are informed and those who are uninformed. If uninformed, benefitives within budget constraints. Copyright © 2009 ciaries only use a subset of covariates to compute their maximum utilities, and if informed, they use the full set of variables considered. In a Bayesian framework with Markov Chain Monte Carlo (MCMC) methods, we estimate search cost coefficients based on the minimum and maximum statistics of the search cost distribution, incorporating both horizontal differentiation and information heterogeneities across eligibles. Our results suggest that, conditional on being uninformed, older, higher income beneficiaries with lower self-reported health status are more likely to utilize easier access to information. Copyright © 2009 John Wiley & Sons, Ltd.

#### Equity and efficiency in HIV-treatment in South Africa: the contribution of mathematical programming to priority setting

• Health Economics---2010---Susan Cleary, Gavin Mooney,Di McIntyre

The HIV-epidemic is one of the greatest public health crises to face South Africa. A health care response to the treatment needs of HIV-positive people is a prime example of the desirability of an economic, rational approach to resource allocation in the face of scarcity. Despite this, almost no input based on economic analysis is currently used in national strategic planning. While cost-utility analysis is theoretically able to establish technical efficiency, in practice this is accomplished by comparing an intervention's ICER to a threshold level representing society's maximum willingness to pay to avoid death and improve health-related quality of life. Such an approach has been criticised for a number of reasons, including that it is inconsistent with a fixed budget for health care and that equity is not taken into account. It is also impractical if no national policy on the threshold exists. As an alternative, this paper proposes a mathematical programming approach that is capable of highlighting technical efficiency, equity, the equity efficiency trade-off and the affordability of alternative HIV-treatment interventions. Government could use this information to plan an HIV-treatment strategy that best meets equity and efficiency objec- naire including WTP questions to value the time and

John Wiley & Sons, Ltd.

#### Testing the Fetal Origins Hypothesis in a developing country: evidence from the 1918 Influenza Pandemic

• Health Economics---2010---Richard E. Nelson

The 1918 Influenza Pandemic is used as a natural experiment to test the Fetal Origins Hypothesis. This hypothesis states that individual health as well as socioeconomic outcomes, such as educational attainment, employment status, and wages, are affected by the health of that individual while in utero. Repeated cross sections from the Pesquisa Mensal de Emprego (PME), a labor market survey from Brazil, are used to test this hypothesis. I find evidence to support the Fetal Origins Hypothesis. In particular, compared to individuals born in the few years surrounding the Influenza Pandemic, those who were in utero during the pandemic are less likely to be college educated, be employed, have formal employment, or know how to read and have fewer years of schooling and a lower hourly wage. These results underscore the importance of fetal health especially in developing countries. Copyright © 2009 John Wiley & Sons, Ltd.

#### Willingness-to-pay to avoid the time spent and discomfort associated with screening colonoscopy

• Health Economics---2010---Daniel E. Jonas, Louise Russell, Jon Chou, Michael Pignone

Background: The screening colonoscopy process requires a considerable amount of time and some discomfort for patients. Objective: We sought to use willingness-to-pay (WTP) to value the time required and the discomfort associated with screening colonoscopy. In addition, we aimed to explore some of the differences between and potential uses of the WTP and the human capital methods. Methods: Subjects completed a diary recording time and a question-

ued the elapsed time reported in the diaries (but not the discomfort) using the human capital method. Results: 110 subjects completed the study. Mean WTP to avoid the time and discomfort was \$263. Human capital values for elapsed time were greater. Linear regressions showed that WTP was influenced most by the difficulty of the preparation, which added \$147 to WTP (p=0.03). Conclusions: WTP values to avoid the time and discomfort associated with the screening colonoscopy process were substantially lower than most of the human capital values for elapsed time alone. The human capital method may overestimate the value of time in situations that involve an irregular, episodic series of time intervals, such as preparation for or recovery after colonoscopy. Copyright © 2009 John Wiley & Sons, Ltd.

## The cost-effectiveness of a law banning the use of cellular phones by drivers

 Health Economics---2010---Daniel Sperber, Alan Shiell, Ken Fyie

Objective: To assess the cost-effectiveness of a law banning the use of cellular phones by drivers in the Canadian province of Alberta. Method: Cost-effectiveness analysis using a probabilistic decision-analytic model and publicly available data. We adopted a societal perspective. Health gains were measured in terms of quality-adjusted life-years. Costs include those associated with awareness raising, enforcement and the welfare loss associated with the reduction in cellular phone use, less savings in health care and other costs associated with automobile accidents. Results: A ban promotes health and releases resources worth more than the costs. There is an 80% chance that a ban will be 'cost saving', and a 94% chance that a ban will cost less than Can\$50 000|QALY. The results are sensitive to the additional risk posed by cellular phone use while driving, and the rate and pattern with which drivers comply with a ban. Conclusion: Under our base line assumptions a cellular phone ban is likely to be cost saving from a societal perspective. The results are sensitive to parameters for which there is very little

discomfort associated with colonoscopy. We also valued the elapsed time reported in the diaries (but not contradictory. Copyright © 2009 John Wiley & Sons,
the discomfort) using the human capital method. Re-

### DRG prospective payment systems: refine or not refine?

 Health Economics---2010---Elin Johanna Gudrun Hafsteinsdottir, Luigi Siciliani

We present a model of contracting between a purchaser of health services and a provider (a hospital). We assume that hospitals provide two alternative treatments for a given diagnosis: a less intensive one (for example, a medical treatment) and a more intensive one (a surgical treatment). We assume that prices are set equal to the average cost reported by the providers, as observed in many OECD countries (yardstick competition). The purchaser has two options: (1) to set one tariff based on the diagnosis only and (2) to differentiate the tariff between the surgical and the medical treatment (i.e. to refine the tariff). We show that when tariffs are refined, the provider has always an incentive to overprovide the surgical treatment. If the tariff is not refined, the hospital underprovides the surgical treatment (and overprovides the medical treatment) if the degree of altruism is sufficiently low compared with the opportunity cost of public funds. Our main result is that price refinement might not be optimal. Copyright © 2009 John Wiley & Sons, Ltd.

## Investment in antiviral drugs: a real options approach

 Health Economics---2010---Arthur Attema, Anna K. Lugnér, Talitha L. Feenstra

Real options analysis is a promising approach to model investment under uncertainty. We employ this approach to value stockpiling of antiviral drugs as a precautionary measure against a possible influenza pandemic. Modifications of the real options approach to include risk attitude and deviations from expected utility are presented. We show that risk aversion counteracts the tendency to delay investment for this case of precautionary investment, which is in contrast to

ysis. Moreover, we provide a numerical example using real world data and discuss the implications of real options analysis for health policy. Suggestions for further extensions of the model and a comparison with the expected value of information analysis are put forward. Copyright © 2009 John Wiley & Sons, Ltd.

#### Comments on contingency management and conditional cash transfers

• Health Economics---2010---Stephen T. Higgins

This essay discusses research on incentive-based interventions to promote healthy behavior change, contingency management (CM) and conditional cash transfers (CCT). The overarching point of the essay is that CM and CCT are often treated as distinct areas of inquiry when at their core they represent a common approach. Some potential bi-directional benefits of recognizing this commonality are discussed. Distinct intellectual traditions probably account for the separate paths of CM and CCT to date, with the former being rooted in behavioral psychology and the latter in microeconomics. It is concluded that the emerging field of behavioral economics, which is informed by and integrates principles of each of those disciplines, may provide the proper conceptual framework for integrating CM and CCT. Copyright © 2009 John Wiley & Sons, Ltd.

#### **Editors' introduction**

• Health Economics---2010---Andrew Jones, Owen O'Donnell

2010

#### Estimating lifetime or episode-of-illness costs under censoring

• Health Economics---2010---Anirban Basu, Willard Manning

Many analyses of healthcare costs involve use of data with varying periods of observation and right censoring of cases before death or at the end of the episode of

earlier applications of risk aversion to real options analillness. The prominence of observations with no expenditure for some short periods of observation and the extreme skewness typical of these data raise concerns about the robustness of estimators based on inverse probability weighting (IPW) with the survival from censoring probabilities. These estimators also cannot distinguish between the effects of covariates on survival and intensity of utilization, which jointly determine costs. In this paper, we propose a new estimator that extends the class of two-part models to deal with random right censoring and for continuous death and censoring times. Our model also addresses issues about the time to death in these analyses and separates the survival effects from the intensity effects. Using simulations, we compare our proposed estimator to the inverse probability estimator, which shows bias when censoring is large and covariates affect survival. We find our estimator to be unbiased and also more efficient for these designs. We apply our method and compare it with the IPW method using data from the Medicare-SEER files on prostate cancer. Copyright (C) 2010 John Wiley & Sons, Ltd.

#### The geography of hospital admission in a national health service with patient choice

• Health Economics---2010---Daniele Fabbri, Silvana Robone

Each year about 20% of the 10 million hospital inpatients in Italy get admitted to hospitals outside the Local Health Authority of residence. In this paper we carefully explore this phenomenon and estimate gravity equations for 'trade' in hospital care using a Poisson pseudo-maximum likelihood method. Consistency of the PPML estimator is guaranteed under the null of independence provided that the conditional mean is correctly specified. In our case we find that patients' flows are affected by network autocorrelation. We correct for it by relying upon spatial filtering. Our results suggest that the gravity model is a good framework for explaining patient mobility in most of the examined diagnostic groups. We find that the ability to restrain patients' outflows increases with the size of the pool of enrollees. Moreover, the ability to attract patients' inflows is reduced by the size of pool of enroless for all whether the tendency to be forward looking varies systematically with the level of consumption of cigarettes. Using panel data, we find that the forward-looking inflows increases with the size of the pool. Copyright (C) 2010 John Wiley & Sons, Ltd. whether the tendency to be forward looking varies systematically with the level of consumption of cigarettes. Using panel data, we find that the forward-looking effect is strongest relative to the addiction effect in the lower quantiles of cigarette consumption, and that

## The effect of private health insurance on medical care utilization and self-assessed health in Germany

• Health Economics---2010---Patrick Hullegie, Tobias Klein

In Germany, employees are generally obliged to participate in the public health insurance system, where coverage is universal, co-payments and deductibles are moderate, and premia are based on income. However, they may buy private insurance instead if their income exceeds the compulsory insurance threshold. Here, premia are based on age and health, individuals may choose to what extent they are covered, and deductibles and co-payments are common. In this paper, we estimate the effect of private insurance coverage on the number of doctor visits, the number of nights spent in a hospital and self-assessed health. Variation in income around the compulsory insurance threshold provides a natural experiment that we exploit to control for selection into private insurance. We document that income is measured with error and suggest an approach to take this into account. We find negative effects of private insurance coverage on the number of doctor visits, no effects on the number of nights spent in a hospital, and positive effects on health. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Quantile regression analysis of the rational addiction model: investigating heterogeneity in forward-looking behavior

 Health Economics---2010---Audrey Laporte, Alfia Karimova, Brian Ferguson

The time path of consumption from a rational addiction (RA) model contains information about an individual's tendency to be forward looking. In this paper, we use quantile regression (QR) techniques to investigate

whether the tendency to be forward looking varies systematically with the level of consumption of cigarettes. Using panel data, we find that the forward-looking effect is strongest relative to the addiction effect in the lower quantiles of cigarette consumption, and that the forward-looking effect declines and the addiction effect increases as we move toward the upper quantiles. The results indicate that QR can be used to illuminate the heterogeneity in individuals' tendency to be forward looking even after controlling for factors such as education. QR also gives useful information about the differential impact of policy variables, most notably workplace smoking restrictions, on light and heavy smokers. Copyright (C) 2010 John Wiley & Sons, Ltd.

## Double health insurance coverage and health care utilisation: evidence from quantile regression

• Health Economics---2010---Sara Moreira,Pedro Barros

ARRAY(0x1009fcb08)

## Disentangling incentives effects of insurance coverage from adverse selection in the case of drug expenditure: a finite mixture approach

• Health Economics---2010---Murat K. Munkin,Pravin Trivedi

This paper takes a finite mixture approach to model heterogeneity in incentive and selection effects of drug coverage on total drug expenditure among the Medicare elderly US population. Evidence is found that the positive drug expenditures of the elderly population can be decomposed into two groups different in the identified selection effects and interpreted as relatively healthy with lower average expenditures and relatively unhealthy with higher average expenditures, accounting for approximately 25 and 75% of the population, respectively. Adverse selection into drug insurance appears to be strong for the higher expenditure component and weak for the lower expenditure group. Copyright (C) 2010 John Wiley & Sons, Ltd.

## I dreamed a dream: England reduces health inequalities and wins the world cup

• Health Economics---2010---Stephen Birch

2010

## Patient-reported outcome measures in the NHS: new methods for analysing and reporting EQ-5D data

• Health Economics---2010---Nancy Devlin, David Parkin, John Browne

HASH(0x1009b7638)

### Non-pecuniary returns to higher education: the effect on smoking intensity in the UK

• Health Economics---2010---Massimiliano Bratti, Alfonso Miranda

This paper investigates whether higher education (HE) produces non-pecuniary returns via a reduction in the intensity of consumption of health-damaging substances. In particular, it focuses on current smoking intensity of the British individuals sampled in the 29year follow-up survey of the 1970 British Cohort Study. We estimate endogenous dummy ordinal response models for cigarette consumption and show that HE is endogenous with respect to smoking intensity and that even when endogeneity is accounted for, HE is found to have a strong negative effect on smoking intensity. Moreover, pecuniary channels, such as occupation and income, mediate only a minor part of the effect of HE. Our results are robust to modelling individual selfselection into current smoking participation (at age 29) and to estimating a dynamic model in which past smoking levels affect current smoking levels. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Inequality of opportunities in health in France: a first pass

• Health Economics---2010---Alain Trannoy, Sandy Tubeuf, Florence Jusot, Marion Devaux

This article analyses the role played by childhood circumstances, especially social and family background in explaining health status among older adults. We explore the hypothesis of an intergenerational transmission of health inequalities using the French part of SHARE. As the impact of both social background and parents' health on health status in adulthood represents circumstances independent of individual responsibility, this study allows us testing the existence in France of inequalities of opportunity in health related to family and social background. Empirically, our study relies on tests of stochastic dominance at first order and multivariate regressions, supplemented by a counterfactual analysis to evaluate the long-lasting impact of childhood conditions on inequality in health. Allocating the best circumstances in both parents' socioeconomic status and parents' health reduces inequality in health by an impressive 57% using the Gini coefficient. The mother's social status has a direct effect on the health of her offspring. By contrast, the effect on descendant's health from their father's social status is indirect only, which goes through the descendant's social status as an adult. There is also a strong effect of the father vital status on health in adulthood, revealing a selection effect. Copyright (C) 2009 John Wiley & Sons, Ltd.

## Improving costing methods in multicentre economic evaluation: the use of multiple imputation for unit costs

 Health Economics---2010---Richard Grieve, John Cairns, Simon G. Thompson

ARRAY(0x1009d2148)

## Cost-effectiveness acceptability curves – caveats quantified

 Health Economics---2010---Michał Jakubczyk,Bogumił Kamiński

Cost-effectiveness acceptability curves (CEACs) have become widely used in applied health technology assessment and at the same time are criticized as unreliable decision-making tool. In this paper we show how using CEACs differs from maximizing expected net benefit (NB) and when it can lead to inconsistent decisions. The impact of income on the weight of elderly In the case of comparing two alternatives we show the limits of the discrepancy between CEAC and expected NB approach and link it with expected value of perfect information. We also show how the shape of CEAC is influenced by the skewness of estimate of expected NB distribution, the correlation between cost and effect estimates and their variance. In the case of more than two options we show when using CEACs can lead to non-transitive choices in pair-wise comparisons and when it lacks independence of irrelevant alternatives property in joint comparisons. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### The determinants of health-care expenditure: new results from semiparametric estimation

• Health Economics---2010---Helmut Herwartz, Bernd Theilen

Recent cross-country studies have questioned the existence of a systematic relationship between per capita health-care expenditure (HCE) and explanatory variables such as income, population ageing and total public expenditure. We reexamine this issue mainly focussing at a flexible semiparametric estimation method that allows the parameters of the model to depend on a state variable. Using the age structure of the population as the state variable, we find that the income elasticity increases with population ageing, while other explanatory variables are not significantly influenced by it. Additionally we find that the HCE relationship becomes more and more unstable in ageing economies. These results explain the difficulty to identify both the influence of population ageing and income on HCE in previous studies. Furthermore they indicate that international convergence of HCE across countries crucially depends on the convergence of the population age structure. We also discuss the policy implications of our results regarding the design of a fair health-care financing system and the evolution of HCE to avoid budgetary problems. Copyright (C) 2009 John Wiley & Sons, Ltd.

### **Americans**

• Health Economics---2010---John Cawley, John Moran, Kosali Simon

This paper estimates the impact of income on the body weight and clinical weight classification of elderly Americans using a natural experiment that led otherwise identical retirees to receive significantly different Social Security payments based on their year of birth. We estimate models of instrumental variables using data from the National Health Interview Surveys and find no significant effect of income on weight. The confidence intervals rule out even moderate effects of income on weight and on the probability of being underweight or obese, especially for men. For example, they indicate that the income elasticity of body mass index is not greater in absolute value than 0.06 for men or 0.14 for women. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### Secondary school fees and the causal effect of schooling on health behavior

Economics---2010---Steffen Rein-• Health hold, Hendrik Jürges, Hendrik Juerges

Using German census data, we estimate the causal effect of education on smoking and overweight/obesity using the abolition of secondary school fees as instrumental variable. The West German federal states enacted this reform at different dates after World War II, generating exogenous variation in the access to secondary education. While we find a strong association between schooling and health behaviors using OLS, we do not find support for the notion that education causes better health behavior. Copyright (C) 2009 John Wiley & Sons, Ltd.

#### Drug development costs when financial risk is measured using the Fama-French three-factor model

• Health Economics---2010---John A. Vernon, Joseph H. Golec, Joseph DiMasi

In a widely cited article, DiMasi, Hansen, and Grabowski (2003) estimate the average pre-tax cost of bringing a new molecular entity to market. Their base case estimate, excluding post-marketing studies, was \$802 million (in \$US 2000). Strikingly, almost half of this cost (or \$399 million) is the cost of capital (COC) used to fund clinical development expenses to the point of FDA marketing approval. The authors used an 11% real COC computed using the capital asset pricing model (CAPM). But the CAPM is a single factor risk model, and multi-factor risk models are the current state of the art in finance. Using the Fama–French three factor model we find that the cost of drug development to be higher than the earlier estimate. Copyright (C) 2009 John Wiley & Sons, Ltd.

## The value of informal care-a further investigation of the feasibility of contingent valuation in informal caregivers

• Health Economics---2010---Claudine de Meijer, Werner Brouwer, Marc Koopmanschap, Bernard van den Berg, Job van Exel

Including informal care in economic evaluations is increasingly advocated but problematic. We investigated three well-known concerns regarding contingent valuation (CV): (1) the item non-response of CV values, (2) the sensitivity of CV values to the individual circumstances of caring, and (3) the choice of valuation method by comparing willingness-to-pay (WTP) and willingness-to-accept (WTA) values for a hypothetical marginal change in hours of informal care currently provided. The study sample consisted of 1453 caregivers and 787 care recipients. Of the caregivers, 603 caregivers (41.5%) provided both WTP and WTA values, 983 (67.7%) provided at least one. Determinants of non-response were dependent on the valuation method; primary determinants were education and satisfaction with amount of informal care provided. Caregivers' mean WTP (WTA) for reducing (increasing) informal care by 1 h was  $\in 9.13$  (10.52). Care recipients' mean WTA (WTP) for reducing (increasing) informal care by 1 h was  $\in 8.88$  ( $\in 6.85$ ). Values were associated with a variety of characteristics of the caregiving situation;

explanatory variables differed between WTP and WTA valuations. The differences between WTP and WTA valuations were small. Based on sensitivity CV appears to be a useful method to value informal care for use in economic evaluations, non-response, however, remains a matter of concern. Copyright © 2009 John Wiley & Sons, Ltd.

### SCHIP premiums, enrollment, and expenditures: a two state, competing risk analysis

Health Economics---2010---James Marton, Patricia
 G. Ketsche, Mei Zhou

Faced with state budget troubles, policymakers may introduce or increase State Children's Health Insurance Program (SCHIP) premiums for children in the highest program income eligibility categories. In this paper we compare the responses of SCHIP recipients in a state (Kentucky) that introduced SCHIP premiums for the first time at the end of 2003 with the responses of recipients in a state (Georgia) that increased existing SCHIP premiums in mid-2004. We start with a theoretical examination of how these different policies create different changes to family budget constraints and produce somewhat different financial incentives for recipients. Next we empirically model the impact of these policies using a competing risk approach to differentiate exits due to transfers to other eligibility categories of public coverage from exiting the public health insurance system. In both states we find a shortrun increase in the likelihood that children transfer to lower- income eligibility lower-premium categories of SCHIP. We also find a short-run increase in the rate at which children transfer from SCHIP to Medicaid in Kentucky, which is consistent with our theoretical model. These findings have important financial implications for state budgets, as the matching rates and premium levels are different for different eligibility categories of public coverage. Copyright © 2009 John Wiley & Sons, Ltd.

### The impact of health on individual retirement plans: self-reported versus diagnostic measures

• Health Economics---2010---Nabanita Datta Gupta, Mona Larsen

We reassess the impact of health on retirement plans of older workers using a unique survey-register matchup which allows comparing the retirement effects of potentially biased survey self-reports of health to those of unbiased register-based diagnostic measures. The aim is to investigate whether even for narrowly defined health measures a divergence exists in the impacts of health on retirement between self-reported health and objective physician-reported health. Our sample consists of older workers and retirees drawn from a Danish panel survey from 1997 and 2002, merged to longitudinal register data. Estimation of measurement error-reduced and selection-corrected pooled OLS and fixed effects models of retirement show that receiving a medical diagnosis is an important determinant of retirement planning for both men and women, in fact more important than economic factors. The type of diagnosis matters, however. For men, the largest reduction in planned retirement age occurs for a diagnosis of lung disease while for women it occurs for musculo-skeletal disease. Except for cardiovascular disease, diagnosed disease is more influential in men's retirement planning than in women's. Our study provides evidence that men's self-report of myalgia and back problems and women's self-report of osteoarthritis possibly yield biased estimates of the impact on planned retirement age, and that this bias ranges between 1.5 and 2 years, suggesting that users of survey data should be wary of applying self-reports of health conditions with diffuse symptoms to the study of labor market outcomes. On the other hand, self-reported cardiovascular disease such as high blood pressure does not appear to bias the estimated impact on planned retirement. Copyright © 2009 John Wiley & Sons, Ltd.

#### Alcohol consumption and body weight

• Health Economics---2010---Michael T French, Edward Norton, Hai Fang, Johanna

#### Maclean

The number of Americans who are overweight or obese has reached epidemic proportions. Elevated weight is associated with health problems and increased medical expenditures. This paper analyzes Waves 1 and 2 of the National Epidemiological Survey of Alcohol and Related Conditions to investigate the role of alcohol consumption in weight gain. Alcohol is not only an addictive substance but also a high-calorie beverage that can interfere with metabolic function and cognitive processes. Because men and women differ in the type and amount of alcohol they consume, in the biological effects they experience as a result of alcohol consumption, and in the consequences they face as a result of obesity, we expect our results to differ by gender. We use first-difference models of body mass index (BMI) and alcohol consumption (frequency and intensity) to control for time-invariant unobservable factors that may influence changes in both alcohol use and weight status. Increasing frequency and intensity of alcohol use is associated with statistically significant yet quantitatively small weight gain for men but not for women. Moreover, the first-difference results are much smaller in magnitude and sometimes different in sign compared with the benchmark pooled cross-sectional estimates. Copyright © 2009 John Wiley & Sons, Ltd.

#### Alcohol use and the labor market in Uruguay

• Health Economics---2010---Ana Balsa, Michael T. French

This paper is one of only a few studies to examine potential labor market consequences of heavy or abusive drinking in Latin America and the first to focus on Uruguay. We analyzed data from a Uruguayan household survey conducted in 2006 using propensity score matching methods and controlling for a number of socio-demographic, family, regional, behavioral health, and labor market characteristics. As expected, we found a positive association between heavy drinking and absenteeism, particularly for female employers. Fang, Johanna our results revealed a positive relationship between

heavy drinking and labor force participation or em- © 2009 John Wiley & Sons, Ltd. ployment. This result was mostly driven by men and weakened when considering more severe measures of abusive drinking. Possible explanations for these findings are that employment leads to greater alcohol use through an income effect, that the Uruguayan labor market rewards heavy drinking, or that labor market characteristics typical of less developed countries, such as elevated safety risks or job instability, lead to problem drinking. Future research with panel data should explore these possible mechanisms. Copyright © 2009 John Wiley & Sons, Ltd.

### Adolescent depression and educational attainment: results using sibling fixed effects

• Health Economics---2010---Jason Fletcher

This paper contributes to the literature on the relationship between adolescent depression and educational attainment in several ways. First, while cross-sectional data are normally used, this paper uses longitudinal data in order to defend against the potential of reverse causality. Second, this is the first paper in the literature to control for sibling-fixed effects in examining the relationship between adolescent depressive symptoms and human capital accumulation. Importantly, this eliminates omitted factors such as family and neighborhood characteristics common to siblings that affect both depressive symptoms and educational attainments (e.g. neighborhood crime, and family resources). Third, this paper examines the effects of both an indicator and scale of depressive symptoms and finds important associations with these depressive symptoms and human capital accumulation. Though the results cannot be given a causal interpretation, the findings show a negative relationship between depressive symptoms and years of schooling. The relationship appears to be driven primarily through increasing the chances of dropping out but may have small impacts on the likelihood of college attendance (conditional on high school graduation). In particular, preferred estimates suggest that a standard deviation increase in depressive symptoms is associated with a 25-30% increase in the likelihood of dropping out. Copyright

#### Modelling health and output at business cycle horizons for the USA

• Health Economics---2010---Paresh Narayan

In this paper we employ a theoretical framework - a simple macro model augmented with health - that draws guidance from the Keynesian view of business cycles to examine the relative importance of permanent and transitory shocks in explaining variations in health expenditure and output at business cycle horizons for the USA. The variance decomposition analysis of shocks reveals that at business cycle horizons permanent shocks explain the bulk of the variations in output, while transitory shocks explain the bulk of the variations in health expenditures. We undertake a shock decomposition analysis for private health expenditures versus public health expenditures and interestingly find that while transitory shocks are more important for private sector expenditures, permanent shocks dominate public health expenditures. Copyright © 2009 John Wiley & Sons, Ltd.

### Bayesian methods in cost-effectiveness studies: objectivity, computation and other relevant aspects

• Health Economics---2010---C. Armero, G. García-Donato, A. López-Quílez

In a probabilistic sensitivity analysis (PSA) of a costeffectiveness (CE) study, the unknown parameters are considered as random variables. A crucial question is what probabilistic distribution is suitable for synthesizing the available information (mainly data from clinical trials) about these parameters. In this context, the important role of Bayesian methodology has been recognized, where the parameters are of a random nature. We explore, in the context of CE analyses, how formal objective Bayesian methods can be implemented. We fully illustrate the methodology using two CE problems that frequently appear in the CE literature. The results are compared with those obtained with other popular approaches to PSA. We find that the discrepancies can

enrolled in the simulated cohort under study is large. Finally, we describe in detail the numerical methods that need to be used to obtain the results. Copyright © 2009 John Wiley & Sons, Ltd.

Analysing risk attitudes to time

• Health Economics---2010---Adam Oliver, Richard Cookson

The assumption of risk neutrality over discounted life years underlies the standard QALY model of individual preferences over health outcomes, and is thus implicitly assumed by NICE and other health technology advisory bodies worldwide. The primary objective of this article is to report a study to test the assumption in a convenience sample of 30 respondents with use of the probability equivalence version of the standard gamble. The results indicate considerable risk aversion over life years, and therefore call into question the standard assumption of risk neutrality in practical cost-utility analyses (CUA). A secondary objective is to observe whether risk aversion can be reduced through the use of the lottery equivalents method, under the hypothesis that the gambling effect can be lessened with this instrument. In a separate convenience sample of 40 respondents, however, the observed level of risk aversion was at least that seen in the standard gamble. Further research is warranted to ascertain whether risk aversion over discounted life years is a generalisable concern. Copyright © 2009 John Wiley & Sons, Ltd.

#### Dynamics of work limitation and work in **Australia**

• Health Economics---2010---Umut Oguzoglu

This paper examines the impact of self-reported work limitations on the labour force participation of the Australian working age population. Five consecutive waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey are used to investigate this relationship. A two-equation dynamic panel data model demonstrates that persistence and unobserved heterogeneity play an important role in work limitation

be quite marked, specially when the number of patients reporting and its effect on labour force participation. Unobserved factors that jointly drive work limitation and participation are also shown to be crucial, especially for women. Copyright © 2009 John Wiley & Sons, Ltd.

### Think twice before you book? Modelling the choice of public vs private dentist in a choice experiment

• Health Economics---2010---Urpo Kiiskinen, Anna Liisa Suominen-Taipale, John Cairns

This study concerns the choice of primary dental service provider by consumers. If the health service delivery system allows individuals to choose between publiccare providers or if complementary private services are available, it is typically assumed that utilisation is a three-stage decision process. The patient first makes a decision to seek care, and then chooses the service provider. The final stage, involving decisions over the amount and form of treatment, is not considered here. The paper reports a discrete choice experiment (DCE) designed to evaluate attributes affecting individuals' choice of dental-care provider. The feasibility of the DCE approach in modelling consumers' choice in the context of non-acute need for dental care is assessed. The aim is to test whether a separate two-stage logit, a multinomial logit, or a nested logit best fits the choice process of consumers. A nested logit model of indirect utility functions is estimated and inclusive value (IV) constraints are tested for modelling implications. The results show that non-trading behaviour has an impact on the choice of appropriate modelling technique, but is to some extent dependent on the choice of scenarios offered. It is concluded that for traders multinomial logit is appropriate, whereas for non-traders and on average the nested logit is the method supported by the analyses. The consistent finding in all subgroup analyses is that the traditional two-stage decision process is found to be implausible in the context of consumer's choice of dental-care provider. Copyright © 2009 John Wiley & Sons, Ltd.

## Shedding new light onto the ceiling and floor? A quantile regression approach to compare EQ-5D and SF-6D responses

 Health Economics---2010---Janelle Seymour,Paul McNamee,Anthony Scott,Michela Tinelli

An important issue in the measurement of health status concerns the extent to which an instrument displays lack of sensitivity to changes in health status at the extremes of the distribution, known as floor and ceiling effects. Previous studies use relatively simple methods that focus on the mean of the distribution to examine these effects. The aim of this paper is to determine whether quantile regression using longitudinal data improves our understanding of the relationship between quality of life instruments. The study uses EQ-5D and SF-36 (converted to SF-6D values) instruments with both baseline and follow-up data. Relative to ordinary least least-squares (OLS), a first difference model shows much lower association between the measures, suggesting that OLS methods may lead to biased estimates of the association, due to unobservable patient characteristics. The novel finding, revealed by quantile regression, is that the strength of association between the instruments is different across different parts of the health distribution, and is dependent on whether health improves or deteriorates. The results suggest that choosing one instrument at the expense of another is difficult without good prior information surrounding the expected magnitude and direction of health improvement related to a health-care intervention. Copyright © 2009 John Wiley & Sons, Ltd.

### A model to predict the cost-effectiveness of disease management programs

• Health Economics---2010---Afschin Gandjour

High costs and deficits in the care of patients with chronic diseases have triggered numerous programs to improve the quality and efficiency of treatment of chronic diseases. Decision makers need to estimate the impact of a disease management program (DMP) on long-term costs and cost-effectiveness in order to decide which programs to introduce. This prediction,

however, requires formalizing the relations between a variety of variables. The purpose of this paper is to formalize these relations and develop a model that enhances the quality of predictions of the costs and cost-effectiveness of a DMP. The model's cost function is able to portray a reduction both of treatment overuse and underuse by improving both physician and patient compliance. The model's applicability is demonstrated by a simulated DMP for patients with hypertension. The application example shows that implementation costs may have a larger financial impact than downstream costs. Copyright © 2009 John Wiley & Sons, Ltd.

## Do regional primary-care organisations influence primary-care performance? A dynamic panel estimation

• Health Economics---2010---Anthony Scott.William Coote

The role of regional primary-care organizations (PCOs) in health-care systems is not well understood. This is the first study to attempt to isolate the effect of regional PCOs on primary-care performance. We examine Divisions of General Practice in Australia, which were established in 1992. A unique Division-level panel data set is used to examine the effect of Divisions, and their activities, on various aspects of primary-care performance. Dynamic panel estimation is used to account for state dependence and the endogeneity of Divisions' activities. The results show that Divisions were more likely to have influenced general practice infrastructure than clinical performance in diabetes, asthma and cervical screening. The effect of specific Division activities, such as providing support for practice nurses and IT support, was not directly related to changes in the level of general practice performance. Specific support in the areas of diabetes and asthma was associated with general practice performance, but this was due to reverse causality and the effect of unobservable factors, rather than the direct effect of Divisions. Copyright © 2009 John Wiley & Sons, Ltd.

### Gatekeeping versus direct-access when patient information matters

• Health Economics---2010---Paula González

We develop a principal-agent model in which the health authority acts as a principal for both a patient and a general practitioner (GP). The goal of the paper is to weigh the merits of gatekeeping versus non-gatekeeping approaches to health care when patient self-health information and patient pressure on GPs to provide referrals for specialized care are considered. We find that, when GPs incentives matter, a non-gatekeeping system is preferable only when (i) patient pressure to refer is sufficiently high and (ii) the quality of the patient's self-health information is neither highly inaccurate (in which case the patient's self-referral will be very inefficient) nor highly accurate (in which case the GP's agency problem will be very costly). Copyright © 2009 John Wiley & Sons, Ltd.

#### Social health insurance reexamined

• Health Economics---2010---Adam Wagstaff

Social health insurance (SHI) is enjoying something of a revival in parts of the developing world. Many countries that have in the past relied largely on tax finance (and out-of-pocket payments) have introduced SHI, or are thinking about doing so. And countries with SHI already in place are making vigorous efforts to extend coverage to the informal sector. Ironically, this revival is occurring at a time when the traditional SHI countries in Europe have either already reduced payroll financing in favor of general revenues, or are in the process of doing so. This paper examines how SHI fares in health-care delivery, revenue collection, covering the formal sector, and its impacts on the labor market. It argues that SHI does not necessarily deliver good quality care at a low cost, partly because of poor regulation of SHI purchasers. It suggests that the costs of collecting revenues can be substantial, even in the formal sector where non-enrollment and evasion are commonplace, and that while SHI can cover the formal sector and the poor relatively easily, it fares badly in terms of covering the non-poor informal sector workers

until the economy has reached a high level of economic development. The paper also argues that SHI can have negative labor market effects. Copyright © 2009 John Wiley & Sons, Ltd.

## Dynamic versus static models in cost-effectiveness analyses of anti-viral drug therapy to mitigate an influenza pandemic

Health Economics---2010---Anna K. Lugnér, Sido
 D. Mylius, Jacco Wallinga

Conventional (static) models used in health economics implicitly assume that the probability of disease exposure is constant over time and unaffected by interventions. For transmissible infectious diseases this is not realistic and another class of models is required, so-called dynamic models. This study aims to examine the differences between one dynamic and one static model, estimating the effects of therapeutic treatment with antiviral (AV) drugs during an influenza pandemic in the Netherlands. Specifically, we focus on the sensitivity of the cost-effectiveness ratios to model choice, to the assumed drug coverage, and to the value of several epidemiological factors. Therapeutic use of AVdrugs is cost-effective compared with non-intervention, irrespective of which model approach is chosen. The findings further show that: (1) the cost-effectiveness ratio according to the static model is insensitive to the size of a pandemic, whereas the ratio according to the dynamic model increases with the size of a pandemic; (2) according to the dynamic model, the cost per infection and the life-years gained per treatment are not constant but depend on the proportion of cases that are treated; and (3) the age-specific clinical attack rates affect the sensitivity of cost-effectiveness ratio to model choice. Copyright © 2009 John Wiley & Sons, Ltd.

## The role of the staff MFF in distributing NHS funding: taking account of differences in local labour market conditions

 Health Economics---2010---Robert Elliott, Ada Ma, Matt Sutton, Diane Skatun, Nigel Rice, Stephen Morris, Alex McConnachie The National Health Service (NHS) in England distributes substantial funds to health-care providers in different geographical areas to pay for the health care required by the populations they serve. The formulae that determine this distribution reflect populations' health needs and local differences in the prices of inputs. Labour is the most important input and area differences in the price of labour are measured by the Staff Market Forces Factor (MFF). This Staff MFF has been the subject of much debate. Though the Staff MFF has operated for almost 30 years this is the first academic paper to evaluate and test the theory and method that underpin the MFF. The theory underpinning the Staff MFF is the General Labour Market method. The analysis reported here reveals empirical support for this theory in the case of nursing staff employed by NHS hospitals, but fails to identify similar support for its application to medical staff. The paper demonstrates the extent of spatial variation in private sector and NHS wages, considers the choice of comparators and spatial geography, incorporates vacancy modelling and illustrates the effect of spatial smoothing. Copyright © 2009 John Wiley & Sons, Ltd.

## Optimal clinical trial design using value of information methods with imperfect implementation

• Health Economics---2010---Andrew Willan,Simon Eckermann

Traditional sample size calculations for randomized clinical trials are based on the tests of hypotheses and depend on somewhat arbitrarily chosen factors, such as type I and II errors rates and the smallest clinically important difference. In response to this, many authors have proposed the use of methods based on the value of information as an alternative. Previous attempts have assumed perfect implementation, i.e. if current evidence favors the new intervention and no new information is sought or expected, all future patients will receive it. A framework is proposed to allow for this assumption to be relaxed. The profound effect that this can have on the optimal sample size and expected net gain is illustrated on two recent

examples. In addition, a model for assessing the value of implementation strategies is proposed and illustrated. Copyright © 2009 John Wiley & Sons, Ltd.

## Operating on commission: analyzing how physician financial incentives affect surgery rates

• Health Economics---2010---Jason Shafrin

This paper employs a nationally representative, household-based dataset in order to test how the compensation method of both the specialists and the primary care providers affects surgery rates. After controlling for adverse selection, I find that when specialists are paid through a fee-for-system scheme rather than on a capitation basis, surgery rates increase 78%. The impact of primary care physician compensation on surgery rates depends on whether or not referral restrictions are present. Copyright © 2009 John Wiley & Sons, Ltd.

### The effect of newer drugs on health spending: do they really increase the costs?

 Health Economics---2010---Abdülkad&idot;r C&idot;van,Bülent Köksal

We analyze the influence of technological progress on pharmaceuticals on rising health expenditures using US State level panel data. Improvements in medical technology are believed to be partly responsible for rapidly rising health expenditures. Even if the technological progress in medicine improves health outcomes and life quality, it can also increase the expenditure on health care. Our findings suggest that newer drugs increase the spending on prescription drugs since they are usually more expensive than their predecessors. However, they lower the demand for other types of medical services, which causes the total spending to decline. We estimate that a 1-year decrease in the average age of prescribed drugs causes per capita health expenditures to decrease by \$45.43. The biggest decline occurs in spending on hospital care due to newer drugs. Copyright © 2009 John Wiley & Sons, Ltd.

### QALYs: is the value of treatment proportional to the size of the health gain?

Health Economics---2010---Erik Nord, Anja Undrum Enge, Veronica Gundersen

In societal priority setting between health programs for different patient groups, many people are reluctant to discriminate too strongly between those who can benefit much from treatment and those who can benefit moderately. We suggest that this view of distributive fairness has a counterpart in personal valuations of gains in health. Such valuations may be influenced by psychological reference points and diminishing marginal utility such that the individual utility of care in patient groups with different potentials may be more similar than what conventional QALY estimates suggest. In interviews in three convenience samples, there is some support for the hypothesis. Most respondents do not think that desire for treatment is significantly less in those who stand to gain only moderately compared with those who stand to gain much even when the treatment is associated with a mortality risk. When stating insurance preferences, a majority of subjects express a greater concern for avoiding the worst states in question than for maximising expected value for money in terms of treatment effects. The tendency applies to outcomes in terms of both quality and quantity of life. Choices between prefixed response options fit well with oral explanations of these choices. Copyright © 2009 John Wiley & Sons, Ltd.

## Health expenditure estimation and functional form: applications of the generalized gamma and extended estimating equations models

 Health Economics---2010---Steven Hill, G. Edward Miller

Health-care expenditure regressions are used in a wide variety of economic analyses including risk adjustment and program and treatment evaluations. Recent articles demonstrated that generalized gamma models (GGMs) and extended estimating equations (EEE) models provide flexible approaches to deal with a variety of data problems encountered in expenditure

estimation. To date there have been few empirical applications of these models to expenditures. We use data from the US Medical Expenditure Panel Survey to compare the bias, predictive accuracy, and marginal effects of GGM and EEE models with other commonly used regression models in a cross-validation study design. Health-care expenditure distributions vary in the degree of heteroskedasticity, skewness, and kurtosis by type of service and population. To examine the ability of estimators to address a range of data problems, we estimate models of total health expenditures and prescription drug expenditures for two populations, the elderly and privately insured adults. Our findings illustrate the need for researchers to examine their assumptions about link functions: the appropriate link function varies across our four distributions. The EEE model, which has a flexible link function, is a robust estimator that performs as well, or better, than the other models in each distribution. Published in 2009 by John Wiley & Sons, Ltd.

### Supplemental health insurance and equality of access in Belgium

• Health Economics---2010---Erik Schokkaert, Tom Van Ourti, Diana De Graeve, Ann Lecluyse, Carine Van de Voorde

The effects of supplemental health insurance on healthcare consumption crucially depend on specific institutional features of the health-care system. We analyse the situation in Belgium, a country with a very broad coverage in compulsory social health insurance and where supplemental insurance mainly refers to extra-billing in hospitals. Within this institutional background, we find only weak evidence of adverse selection in the coverage of supplemental health insurance. We find much stronger effects of socio-economic background. We estimate a bivariate probit model and cannot reject the assumption of exogeneity of insurance availability for the explanation of health-care use. A count model for hospital care shows that supplemental insurance has no significant effect on the number of spells, but a negative effect on the number of nights per spell. We comment on the implications of our findCopyright © 2009 John Wiley & Sons, Ltd.

#### Mental illness, nativity, gender and labor supply

 Health Economics---2010---Victoria Ojeda, Richard G. Frank, Thomas McGuire, Todd P. Gilmer

D.

G.

We analyzed the impacts of nativity and mental health (MH) on work by gender for non-elderly adults using the 2002 National Survey on Drug Use and Health. We employed two indicators of MH - the K6 scale of Mental Illness (MI) and an indicator for symptoms of Mania or Delusions (M|D). Instrumental variable (IV) models used measures of social support as instruments for MI. Unadjusted work rates were higher for immigrants (vs US-born adults). Regressions show that MI is associated with lower rates of work among US-born males but not immigrant males and females; M|D is associated lower rates of work among US-born males and females, and among immigrant males. Results did not change using IV models for MI. Most persons with MI work, yet symptom severity reduces labor supply among natives especially. Immigrants' labor supply is less affected by MI. Copyright © 2009 John Wiley & Sons, Ltd.

### International survey on willingness-to-pay (WTP) for one additional QALY gained: what is the threshold of cost effectiveness?

• Health Economics---2010---Takeru Shiroiwa, Yoon-Kyoung Sung, Takashi Fukuda.Hui-Chu Lang, Sang-Cheol Bae, Kiichiro Tsutani

Although the threshold of cost effectiveness of medical interventions is thought to be £20 000-£30 000 in the UK, and \$50 000-\$100 000 in the US, it is well known that these values are unjustified, due to lack of explicit scientific evidence. We measured willingness-to-pay (WTP) for one additional quality-adjusted life-year gained to determine the threshold of the incremental cost-effectiveness ratio. Our study used the Internet to compare WTP for the additional year of survival in a perfect status of health in Japan, the Republic of Korea

ings for equality of access to health care in Belgium. (ROK), Taiwan, Australia, the UK, and the US. The research utilized a double-bound dichotomous choice, and analysis by the nonparametric Turnbull method. WTP values were JPY 5 million (Japan), KWN 68 million (ROK), NT\$ 2.1 million (Taiwan), £23 000 (UK), AU\$ 64 000 (Australia), and US\$ 62 000 (US). The discount rates of outcome were estimated at 6.8% (Japan), 3.7% (ROK), 1.6% (Taiwan), 2.8% (UK), 1.9% (Australia), and 3.2% (US). Based on the current study, we suggest new classification of cost-effectiveness plane and methodology for decision making. Copyright © 2009 John Wiley & Sons, Ltd.

### Suboptimal provision of preventive healthcare due to expected enrollee turnover among private insurers

• Health Economics---2010---Bradley Herring

Many preventive healthcare procedures are widely recognized as cost-effective but have relatively low utilization rates in the US. Because preventive care is a present-period investment with a future-period expected financial return, enrollee turnover among private insurers lowers the expected return of this investment. In this paper, I present a simple theoretical model to illustrate the suboptimal provision of preventive healthcare that results from insurers 'free riding' off of the provision from others. I also provide an empirical test of this hypothesis using data from the Community Tracking Study's Household Survey. I use lagged market-level measures of employment-induced insurer turnover to identify variation in insurers' expectations and test for the effect of turnover on several different measures of medical utilization. As expected, I find that turnover has a significantly negative effect on the utilization of preventive services and has no effect on the utilization of acute services used as a control. Copyright © 2009 John Wiley & Sons, Ltd.

### Fixing the game: are between-silo differences in funding arrangements handicapping some interventions and giving others a head-start?

• Health Economics---2010---Leonie Segal,Kim Dalziel, Duncan Mortimer

Given resource scarcity, not all potentially beneficial health services can be funded. Choices are made, if not explicitly, implicitly as some health services are funded and others are not. But what are the primary influences on those choices? We sought to test whether funding decisions are linked to cost effectiveness and to quantify the influence of funding arrangements and community values arguments. We tested this via empirical analysis of 245 Australian health-care interventions for which cost-effectiveness estimates had been published. The likelihood of government funding was modelled as a function of cost effectiveness, patient target group characteristics, intervention characteristics and publication characteristics, using multiple regression analysis. We found that higher cost effectiveness ratios were a significant predictor of funding rejection, but that cost effectiveness was not related to the level of funding. Intervention characteristics linked to funding and delivery arrangements and community values arguments were significant predictors of funding outcomes. Our analysis supports the hypothesis that funding and delivery arrangements influence both whether an intervention is funded and funding level; even after controlling for community values and cost effectiveness. It suggests that adopting partial priority setting processes without regard to opportunity cost can have the perverse effect of compounding allocative inefficiencies. Copyright © 2009 John Wiley & Sons, Ltd.

## Social interactions and smoking: evidence using multiple student cohorts, instrumental variables, and school fixed effects

• Health Economics---2010---Jason Fletcher

In this paper, I use a social interactions framework to detect whether individual smoking decisions are influenced by classmate smoking decisions. There are several large challenges in addressing this question, including the endogeneity of school (and thus classmates) through residential location choices, 'third factors' such as school-level unobservables that influence individual and classmate choices simultaneously, and the difficulty of the identification of parameters in empirical models of social interactions. In order to address these issues, I

use an instrumental variables|fixed effects methodology that compares students in different grades within the same high school who face a different set of classmates and classmates' decisions. Preferred specifications suggest that increasing the proportion of classmates who smoke by 10% will increase the likelihood an individual smokes by approximately 3 percentage points. I compare these results with previous findings that are unable to use school fixed effects and|or use potentially invalid instruments and find that the current results suggest smaller social interactions in adolescent smoking decisions than some previous work. Copyright © 2009 John Wiley & Sons, Ltd.

#### On priority setting in preventive care resources

• Health Economics---2010---Christophe Courbage

Using an expected utility approach, we show that within a population that differs with respect to the probability of developing a disease, the allocation of preventive care resources should be prioritized based on the efficiency of prevention and not on whether individuals are at high or low risk of developing the disease. Should the efficiency of prevention be the same within the population, we show that the gravity of the disease, the presence of co-morbidities and the existence of uncertainty on health status can alternatively be considered so as to prioritize among preventive care resources. Copyright © 2009 John Wiley & Sons, Ltd.

### Labour participation of people living with HIV—AIDS in Spain

• Health Economics---2010---Juan Oliva

Objective: This study explores the relationship between the employment status of human immunodeficiency virus (HIV)-positive individuals and socioeconomic and health characteristics in Spain. Methods: Data were obtained from four waves of the HIV|AIDS Hospital Survey from the period 2001 to 2004. The sample was composed of 3376 individuals between 16 and 64 years. Assessment of employment participation was performed using a probit model on a wide range

of socioeconomic and lifestyle-related variables. Results: The main variables explaining the probability of participation in the labour market were age, gender, education level, CD4 cell count, health status, time since HIV diagnosis, psychological impact of contracting the disease or its progression, the most likely means of transmission and intravenous drug use (IDU). The significance of each of these variables differs for men and women as well as for injecting drug users (IDUs) and non-IDUs. Conclusions: The employment status of HIV-positive individuals is directly related to their health status and other personal characteristics. Policies to improve the well-being of HIV-positive individuals should not be limited to any one sector as their needs require strategies with a multidisciplinary approach. Copyright © 2009 John Wiley & Sons, Ltd.

### Modelling opportunity in health under partial observability of circumstances

• Health Economics---2010---Pedro Rosa Dias

This paper proposes a behavioural model of inequality of opportunity in health that integrates John Roemer's framework of inequality of opportunity with the Grossman model of health capital and demand for health. The model generates a recursive system of equations for health and lifestyles, which is then jointly estimated by full information maximum likelihood with freely correlated error terms. The analysis innovates by accounting for the presence of unobserved heterogeneity, therefore addressing the partial-circumstance problem, and by extending the examination of inequality of opportunity to health outcomes other than self-assessed health, such as long-standing illness, disability and mental health. The results provide evidence for the existence of third factors that simultaneously influence health outcomes and lifestyle choices, supporting the empirical relevance of the partial-circumstance problem. Accounting for these factors, the paper corroborates that the effect of parental and early circumstances on adult health disparities is paramount. However, the particular set of circumstances that affect each of the analysed health outcomes differs substantially. The results also show that differences in educational opportunities, and in

of socioeconomic and lifestyle-related variables. Resocial development in childhood, are crucial determinants: The main variables explaining the probability nants of lifestyles in adulthood, which, in turn, shape of participation in the labour market were age, genthe observed health inequalities. Copyright © 2010 der, education level, CD4 cell count, health status, John Wiley & Sons, Ltd.

## Gender gap in parents' financing strategy for hospitalization of their children: evidence from India

• Health Economics---2010---Abay Asfaw,Francesca Lamanna,Stephan Klasen

The 'missing women' dilemma in India has sparked great interest in investigating gender discrimination in the provision of health care in the country. No studies, however, have directly examined discrimination in health-care financing strategies in the case of severe illness of sons versus daughters. In this paper, we hypothesize that households who face tight budget constraints are more likely to spend their meager resources on hospitalization of boys rather than girls. We use the 60th round of the Indian National Sample Survey (2004) and a multinomial logit model to test this hypothesis and to throw some light on this important but overlooked issue. The results reveal that boys are much more likely to be hospitalized than girls. When it comes to financing, the gap in the usage of household income and savings is relatively small, while the gender gap in the probability of hospitalization and usage of more onerous financing strategies is very high. Ceteris paribus, the probability of boys to be hospitalized by financing from borrowing, sale of assets, help from friends, etc. is much higher than that of girls. Moreover, in line with our theoretical framework, the results indicate that the gender gap intensifies as we move from the richest to poorest households. Copyright © 2009 John Wiley & Sons, Ltd.

#### Valuing health: a new proposal

• Health Economics---2010---Daniel M. Hausman

After criticizing existing systems of health measurement for their unargued commitment to evaluating health states in terms of preferences or well-being, this essay argues that public rather than private values of health states should help guide the allocation of health-related resources. Private evaluation of health states is relative to a prior individual choice of specific activities and goals, while public evaluation is relative to the whole range of important activities and goals. Public evaluation is concerned with securing a wide range of choices as well as with success given one's choice. A reasonable simplification from the public perspective is to focus on just two features of health states: the subjective feelings attached to health states and the limitations that health states imply on the range of important activities that individuals can pursue. Focusing on just these two dimensions permits the construction of a parsimonious classification of health states with regard to what matters most from the public perspective. This classification, which resembles those in the HALex and the Rosser and Kind Disability and Distress Index, might best be built on top of existing health-state classifications, by mapping the health states they define to activity-limitation feeling pairs. To assign values to these pairs, I propose relying on deliberative groups to make comparisons among the pairs with respect to the relation 'is a more serious limitation on the range of objectives and good lives available to members of the population. A ranking according to this property, is not a preference ranking, because it is not a ranking in terms of everything that matters to individuals. Working back from the weights attached to the activity-limitation feeling pairs, one can impute weights for the health states in other classification systems that were mapped to those pairs. If those weights coincide roughly with current weights, then one legitimizes current weights and provides a vehicle for their public discussion and possible revision. If those weights do not coincide, then one has both an argument for revising current views of the cost effectiveness of treatments and policies and a method to carry out such a revision. Copyright © 2009 John Wiley & Sons, Ltd.

### New estimates of the demand for physical and mental health treatment

 Health Economics---2010---Chad D. Meyerhoefer, Samuel H. Zuvekas

Consumers' price responsiveness is central to US health-care reform proposals, but the best available estimates are now more than 25 years old. We estimate health-care demands by calculating expected end-of-year prices and incorporating them into a zero-inflated ordered probit model applied to several overlapping panels of data from 1996 to 2003. Results from our correlated random effects specification indicate that the price responsiveness of ambulatory mental health treatment has decreased substantially and is now slightly lower than physical health treatment. This suggests that concerns over moral hazard alone do not warrant less generous coverage for mental health. However, prescription drug demand is more price elastic. Published in 2009 by John Wiley & Sons, Ltd.

## Non-parametric methods for cost-effectiveness analysis: the central limit theorem and the bootstrap compared

• Health Economics---2010---Richard M. Nixon, David Wonderling, Richard D. Grieve

Cost-effectiveness analyses (CEA) alongside randomised controlled trials commonly estimate incremental net benefits (INB), with 95% confidence intervals, and compute cost-effectiveness acceptability curves and confidence ellipses. Two alternative non-parametric methods for estimating INB are to apply the central limit theorem (CLT) or to use the non-parametric bootstrap method, although it is unclear which method is preferable. This paper describes the statistical rationale underlying each of these methods and illustrates their application with a trial-based CEA. It compares the sampling uncertainty from using either technique in a Monte Carlo simulation. The experiments are repeated varying the sample size and the skewness of costs in the population. The results showed that, even when data were highly skewed, both methods accurately estimated the true standard errors (SEs) when

sample sizes were moderate to large (n>50), and also gave good estimates for small data sets with low skewness. However, when sample sizes were relatively small and the data highly skewed, using the CLT rather than the bootstrap led to slightly more accurate SEs. We conclude that while in general using either method is appropriate, the CLT is easier to implement, and provides SEs that are at least as accurate as the bootstrap. Copyright © 2009 John Wiley & Sons, Ltd.

### Does income-related health inequality change as the population ages? Evidence from Swedish panel data

• Health Economics---2010---M. Kamrul Islam, Ulf-G. Gerdtham, Philip Clarke, Kristina Burström

This paper explains and empirically assesses the channels through which population aging may impact on income-related health inequality. Long panel data of Swedish individuals is used to estimate the observed trend in income-related health inequality, measured by the concentration index (CI). A decomposition procedure based on a fixed effects model is used to clarify the channels by which population aging affects health inequality. Based on current income rankings, we find that conventional unstandardized and age-genderstandardized CIs increase over time. This trend in CIs is, however, found to remain stable when people are instead ranked according to lifetime (mean) income. Decomposition analyses show that two channels are responsible for the upward trend in unstandardized CIs - retired people dropped in relative income ranking and the coefficient of variation of health increases as the population ages. Copyright © 2009 John Wiley & Sons, Ltd.

### Systematic reviews of economic evaluations: utility or futility?

• Health Economics---2010---Rob Anderson

Systematic reviews of studies of effectiveness are the centrepiece of evidence-based medicine and policy making. Increasingly, systematic reviews of economic eval-

based policy making, with some health economists even calling for 'an economics approach to systematic review'. This paper questions the value of conducting systematic reviews of economic evaluations to inform decision making in health care. It argues that the value of systematic reviews of economic evaluations is usually undermined by three things. Firstly, compared with effectiveness studies, there is a much wider range of factors that limit the generalisability of costeffectiveness results, over time and between health systems and service settings, including the contextdependency of resource use and opportunity costs, and different decision contexts and budget constraints. Secondly, because economic evaluations are more explicitly intended to be decision-informing, the requirements for generalisability take primacy, and considerations of internal validity become more secondary. Thirdly, since one of the two main forms of economic evaluation - decision analytic modelling - is itself a well-developed method of evidence synthesis, in most cases the need for a comprehensive systematic review of previous economic evaluations of a particular health technology or policy choice is unwarranted. I conclude that apparent 'meta-analytic expectations' for clear and widely applicable cost-effectiveness conclusions from systematic reviews of economic evaluations are optimistic and generally futile. For more useful insights and knowledge from previous economic studies in evidence-based policy making, a more limited range of reasons for conducting systematic reviews of health economic studies is proposed. Copyright © 2009 John Wiley & Sons, Ltd.

### **Determinants of Thailand household healthcare** expenditure: the relevance of permanent resources and other correlates

• Health Economics---2010---Albert Okunade, Chutima Suraratdecha, David A. Benson

Several papers in the leading health economics journals modeled the determinants of healthcare expenditure using household survey or family budgets data of developed countries. Past work largely used self-reported uations are also an expected input into much evidence- current income as the core determinant, whereas the

theoretically correct concept of household resource constraint is permanent or long-run income (á lá Milton Friedman). This paper strives to rectify the theoretical oversight of using current income by augmenting the model with household asset. Using longitudinal data, we constructed 'wealth index' as a distinct covariate to capture the households' tendency to liquidate assets when defraying necessary healthcare liabilities after exhausting cash incomes. (Current income and assets together capture the household expanded resource base). Using 98 632 household observations from Thailand Socio-Economic Surveys (1994-2000 biennial data cycles) we found, using a double-hurdle model with dependent errors, that out-of-pocket healthcare spending behaves as a technical necessity across income quintiles and household sizes. Pre-1997 economic shock income elasticities are smaller than the post-shock estimates across income quintiles for large and small households. Proximity to death, median age, and assets are also among other significant determinants. Our novel findings extend the theoretical consistency of a multi-level decision model in household healthcare expenditure in the developing Asian country context. Copyright © 2009 John Wiley & Sons, Ltd.

## Preference-based condition-specific measures of health: what happens to cross programme comparability?

• Health Economics---2010---John Brazier, Aki Tsuchiya

No Abstract

#### Spending on new drug development

• Health Economics---2010---Christopher Paul Adams,Brantner Van Vu

This paper replicates DiMasi et al. (J. Health Econ. 2003; 22: 151-185; Drug Inf. J. 2004; 38: 211-223) estimates of expenditure on new drug development using publicly available data. The paper estimates that average expenditure on drugs in human clinical trials is around \$27m per year, with \$17m per year on drugs in Phase I, \$34m on drugs in Phase II and

\$27m per year on drugs in Phase III of the human clinical trials. The paper's estimated expenditure on new drug development is somewhat greater than suggested by the survey results presented in DiMasi et al. (J. Health Econ. 2003; 22: 151-185; Drug Inf. J. 2004; 38: 211-223). The paper combines a 12-year panel of research and development expenditure for 183 publicly traded firms in the pharmaceutical industry with panel of drugs in human clinical trials for each firm over the same period. The paper estimates drug expenditure by estimating the relationship between research and development expenditure and the number of drugs in development for 1682 company years (183 firms multiplied by the number of years for which we have financial and drug development information). The paper also estimates expenditure on drugs in various therapeutic categories. Copyright © 2009 John Wiley & Sons, Ltd.

## Medical technology adoption, uncertainty, and irreversibilities: is a bird in the hand really worth more than in the bush?

• Health Economics---2010---Joshua Graff Zivin, Matthew Neidell

The influence of current medical technology adoption decisions on the use of future potential interventions is often overlooked. Some health interventions, once exercised, restrict future potential interventions for both related and unrelated medical conditions. For example, treatment of a patient with an antibiotic may lead to resistance in that patient that precludes future treatment with the same or related compounds. This irreversibility raises the value of treatment modalities that preserve future treatment options. Surprisingly, partial reversibility with or without learning can either increase or decrease this value, depending on the distribution of patient types within the treated population. Evaluations that ignore these option values miss an important part of the welfare equation that is becoming increasingly important as individuals live longer and the stock of medical treatments increases. Copyright © 2009 John Wiley & Sons, Ltd.

### A social cost-benefit criterion for evaluating Voluntary Counseling and Testing with an application to Tanzania

• Health Economics---2010---Robert Brent

Rationale: There are many interventions for HIV|AIDS that require that people know their status and hence require a HIV test. Testing that is driven by a desire to prevent the spread of the disease often has an indirect effect on others. These external effects need to be identified, quantified and included as part of the benefits and costs of testing. Pioneering analyses of HIV testing by Philipson and Posner have introduced the economic calculus of individual expected benefits and costs of activities into an understanding of the HIV epidemic. What is required for social evaluations is an extension of the analysis to ensure that external effects are included. Objectives: The objective of this paper is two-fold. First we seek to formulate cost-benefit criteria that incorporate fully the external effects in the evaluation of Voluntary Counseling and Testing (VCT). We achieve this by recasting the individual calculus of benefits and costs to a couple setting. We can then compare an individual's cost-benefit analysis of being tested with social criteria that look at outcomes from a couple's perspective for both separate and dual|joint testing. Second we aim to apply our social criteria to VCT programs as they currently operate in Tanzania and how these programs might operate in the future when they are scaled up to relate to the general population. Methodology: We develop social criteria for evaluating separate and dual VCT using a couple's perspective with and without altruism. Therefore, the welfare function is based on two individual expected utility functions viewed as a couple, either married or regular partners. The benefits are the averted lives lost whenever discordant couples are revealed. The costs of VCT are the benefits of unprotected sex that the couple foregoes and the costs of the testing and counseling. The cost-benefit criteria are applied to VCT programs in Tanzania. The four main ingredients estimated are: the foregone benefit of unprotected sex (measured by the compensated wage differentials charged by commercial sex workers); the probability of

infection; the cost of an infection (measured by both the value of a statistical life and the human capital approaches) and the cost of a single test (which includes behavior-modifying counseling). Conclusions: We find separate testing in existing VCT programs to be only marginally worthwhile. However, in scaled-up programs the benefit-cost ratio is over three. Dual testing is always more beneficial than separate testing. However, this advantage is reduced in scaled-up programs. VCT should be greatly expanded throughout Tanzania as future returns would be even higher for both separate and joint counseling and HIV testing. Copyright © 2009 John Wiley & Sons, Ltd.

# An instrumental variables evaluation of the effect of antidepressant use on employment among HIV-infected women using antiretroviral therapy in the United States: 1996-2004

• Health Economics---2010---Omar Galarraga, David Salkever, Judith A. Cook, Stephen J. Gange

Depression is a common condition among patients with HIV. This paper uses panel data for 1234 participants from the Women's Interagency HIV Study to estimate the effect of antidepressant use on the likelihood of being employed among women receiving highly active antiretroviral therapy (HAART) in the United States from 1996 to 2004. We show that naive regressions of antidepressant use on employment generally result in negative or non-significant coefficients, whereas the instrumental variables (IVs) approach shows a positive and significant effect of antidepressant use on the employment probability of women living with HIV. We use IVs to predict antidepressant use independently of outcomes, thus addressing potential biases (e.g. more depressed women are more likely to receive antidepressant treatment, but they are also more likely to be unemployed). The results are consistent for linear (random and fixed effects) as well as non-linear (bivariate probit) specifications. Among women receiving HAART, and controlling for individual and local area labor market characteristics, the use of antidepressants is associated with a 29-percentage-point higher probability of being employed. Improved efforts to test,

tients may improve not only clinical indicators but also labor market outcomes. Copyright © 2009 John Wiley & Sons, Ltd.

### Estimating health insurance impacts under unobserved heterogeneity: the case of Vietnam's health care fund for the poor

• Health Economics---2010---Adam Wagstaff

Vietnam's health care fund for the poor (HCFP) uses government revenues to finance health care for the poor, ethnic minorities living in selected mountainous provinces, and all households living in communes officially designated as highly disadvantaged. As of 2006, the program, which started in 2003, covered around 60% of those eligible. Those who were covered (about 20% of the population) were disproportionately poor, and around 80% of those covered were eligible. Estimates of the program's impact were obtained using a method that takes into account unobserved heterogeneity - including unobserved idiosyncratic returns - but requires minimal assumptions. The downside is that it provides an estimate only of the program's impact on those covered by it; it cannot therefore answer the question of how those currently uncovered will fare when they are eventually covered. The results suggest that HCFP has had no impact on use of services, but has substantially reduced out-of-pocket spending. Copyright © 2009 John Wiley & Sons, Ltd.

#### Selection and the effect of prenatal smoking

• Health Economics---2010---Angela R. Fertig

There is a debate about the extent to which the effect of prenatal smoking on infant health outcomes is causal. Poor outcomes could be attributable to mother characteristics, which are correlated with smoking. I examine the importance of selection on the effect of prenatal smoking by using three British cohorts where the mothers' knowledge about the harms of prenatal smoking varied substantially. I find that the effect of smoking on the probability of a low birth weight birth conditional on gestation is slightly more than

diagnose and treat depression among HIV-positive patrice as large in 2000 compared with 1958, implying that selection could explain as much as 50% of the current association between smoking and birth outcomes. Copyright © 2009 John Wiley & Sons, Ltd.

#### Smoking initiation in Germany: the role of intergenerational transmission

Economics---2010---Silja • Health Göhlmann, Christoph Schmidt, Harald Tauchmann,Silja Goehlmann

This paper analyzes the decision to start smoking using data from the German Socio-Economic Panel (GSOEP). Our focus is on the role that parental smoking behavior plays for children's smoking initiation. The data used are a combination of retrospective information on the age individuals started smoking and, by tracing back these individuals within the panel structure up to that point, information on characteristics at the age of smoking initiation. In contrast to the previous literature it is possible to control for the environment at the time of smoking onset that might have influenced the decision to start. Our preferred specification of a discrete time hazard model indicates that parental smoking significantly increases the offspring's hazard to start smoking. While this effect is most prominent for currently smoking parents, it is also found for parents who have given up smoking already. However, an ambiguous effect of the timing of parental smoking cessation is found, arguing against role-model effects being a key determinant for smoking initiation. Copyright © 2009 John Wiley & Sons, Ltd.

### Ordinal and cardinal measures of health inequality: an empirical comparison

• Health Economics---2010---David Madden

When measuring health inequality using ordinal data, analysts typically must choose between indices specifically based upon ordinal data and more standard indices using ordinal data, which has been transformed into cardinal data. This paper compares inequality rankings across a number of different approaches and finds considerable sensitivity to the choice between

ordinal- and cardinal-based indices. There is relatively little sensitivity to the ethical choices made by the analyst in terms of the weight attached to different parts of the distribution. Copyright © 2009 John Wiley & Sons, Ltd.

## Record rewards: the effects of targeted quality incentives on the recording of risk factors by primary care providers

Health Economics---2010---Matt Sutton, Ross Elder, Bruce Guthrie, Graham Watt

Financial incentives may increase performance on targeted activities and have unintended consequences for untargeted activities. An innovative pay-forperformance scheme was introduced for UK general practices in 2004. It incentivised particular quality indicators for targeted groups of patients. We estimate the intended and unintended consequences of this Quality and Outcomes Framework (QOF) using dynamic panel probit models estimated on individual patient records from 315 general practices over the period 2000|1-2005|6. We focus on annual rates of recording of blood pressure, smoking status, cholesterol, body mass index and alcohol consumption. The recording of each risk factor is designated as incentivised or unincentivised for each individual based on whether they have one of the diseases targeted by the QOF. The effect on incentivised factors was substantially larger on the targeted patient groups (+19.9 percentage points) than on the untargeted groups (+5.3 percentage points). There was no obvious evidence of effort diversion but there was evidence of substantial positive spillovers (+10.9 percentage points) onto unincentivised factors for the targeted groups. Moreover, provider responses were larger on those indicators for which more stringent standards were set and greater rewards offered. We conclude that the incentives induced providers to improve targeted quality and make investments in quality that extended beyond the scheme. We estimate that the average provider was paid £20 500 for recording 410 additional items of information on the risk factors targeted by the financial incentives. Allowance for the positive spillovers

reduces the estimated average reward from £50 to £25 per additional record. Copyright © 2009 John Wiley & Sons, Ltd.

### Physician's production of primary care in Ontario, Canada

• Health Economics---2010---Sisira Sarma,Rose Anne Devlin,William Hogg

This paper examines the factors affecting the number of patient visits per week reported by family physicians in Ontario. The way that a physician is paid is potentially endogenous to the number of patients seen per week, thus an instrumental variable method of estimation is employed to account for the endogeneity bias. Once account is taken of the endogeneity of remuneration as well as relevant physician and practice characteristics, the estimated elasticity of output with respect to hours worked is 0.74; 0.68 in group practices and 0.82 in solo practices. Physicians paid on a non-fee-for-service (NFFS) conduct 15-31% fewer patient visits per week in comparison to those paid under an FFS scheme. Certain patient populations in practices affect patient visits in important ways, as do a number of physician and practice characteristics. Copyright © 2009 John Wiley & Sons, Ltd.

### Investment in quality improvement: how to maximize the return

• Health Economics---2010---Afschin Gandjour

Today, one of the most pressing concerns of health-care policymakers in industrialized countries are deficits in the quality of health care. This paper presents a decision program that addresses the question in which disease areas and at what intensity to invest in quality improvement (QI) in order to maximize population health. The decision program considers both a budget constraint as well as time constraints of educators and health professionals to participate in educational activities. The calculations of the model are based on a single assumption which is that more intense quality efforts lead to larger QIs, but with diminishing returns. This assumption has been validated by previous studies.

All other relationships described by the model are deduced from this assumption. The model uses data from QI trials published in the literature. Thus, it is able to assess how the vast number of published QI strategies compare in terms of their value. Copyright © 2009 John Wiley & Sons, Ltd.

### Uncertainty and validation of health economic decision models

 Health Economics---2010---Lois G. Kim, Simon G. Thompson

Health economic decision models are based on specific assumptions relating to model structure and parameter estimation. Validation of these models is recommended as an indicator of reliability, but is not commonly reported. Furthermore, models derived from different data and employing different assumptions may produce a variety of results. A Markov model for evaluating the long-term cost-effectiveness of screening for abdominal aortic aneurysm is described. Internal, prospective and external validations are carried out using individual participant data from two randomised trials. Validation is assessed in terms of total numbers and timings of key events, and total costs and life-years. Since the initial model validates well only internally, two further models are developed that better fit the prospective and external validation data. All three models are then extrapolated to a life-time horizon, producing cost-effectiveness estimates ranging from £1600 to £4200 per life-year gained. Parameter uncertainty is now commonly addressed in health economic decision modelling. However, the derivation of models from different data sources adds another level of uncertainty. This extra uncertainty should be recognised in practical decision-making and, where possible, specifically investigated through independent model validation. Copyright © 2009 John Wiley & Sons, Ltd.

### Does social capital determine health? Evidence from eight transition countries

 Health Economics---2010---Béatrice d'Hombres,Lorenzo Rocco,M. Suhrcke,M. McKee

There is growing interest in the role of social relationships in explaining patterns of health. We contribute to this debate by investigating the impact of social capital on self-reported health for eight countries from the Commonwealth of Independent States. We rely on three indicators of social capital at the individual level (trust, participation in local organisations, social isolation) and employ alternative procedures to estimate consistently the impact of social capital on health. The three social capital indicators are choice variables and are hence, by definition, endogenously determined. We attempt to circumvent the endogeneity problems by using instrumental variable estimates. Our results show that the individual degree of trust is positively and significantly correlated with health, this being true with least squares estimators as well as when relying on instrumental variable estimators with (and without) community fixed effects. Similarly, social isolation is negatively and significantly associated with health, irrespective of the procedure of estimation. On the other hand, the effect of being a member of a Putnamesque organisation is more ambiguous and usually not significantly related to health. Copyright © 2009 John Wiley & Sons, Ltd.

## A game of two halves? Incentive incompatibility, starting point bias and the bidding game contingent valuation method

 Health Economics---2010---Paul McNamee, Laura Ternent, Adjima Gbangou, David Newlands

The bidding game (BG) method of contingent valuation is one way to increase the precision of willingness to pay (WTP) estimates relative to the single dichotomous choice approach. However, there is evidence that the method may lead to incentive incompatible responses and be associated with starting point bias. While previous studies in health using BGs test for starting point bias, none have also investigated incentive incompatibility. Using a sample of respondents resident in Burkina Faso, West Africa, this paper examines whether the BG method is associated with both incentive incompatibility and starting point bias. We find evidence for both effects. However, average WTP

values remained largely unaffected after accounting for both factors in multivariate analyses. The results suggest that the BG method is an acceptable technique in settings where prices for goods are flexible. Copyright © 2009 John Wiley & Sons, Ltd.

### Beneficiary price sensitivity in the Medicare prescription drug plan market

Health Economics---2010---Austin B. Frakt, Steven D. Pizer

The Medicare stand-alone prescription drug plan (PDP) came into existence in 2006 as part of the Medicare prescription drug benefit. It is the most popular plan type among Medicare drug plans and large numbers of plans are available to all beneficiaries. In this article we present the first analysis of beneficiary price sensitivity in the PDP market. Our estimate of elasticity of enrollment with respect to premium, larger in magnitude than has been found in the Medicare HMO market. This high degree of beneficiary price sensitivity for PDPs is consistent with relatively low product differentiation, low fixed costs of entry in the PDP market, and the fact that, in contrast to changing HMOs, beneficiaries can select a PDP without disrupting doctor-patient relationships. Published in 2009 by John Wiley & Sons, Ltd.

## Statistical implications of utility weighted and equally weighted HRQL measures: an empirical study

Health Economics---2010---Caitlyn T. Wilke, A.
 Simon Pickard, Surrey M. Walton, Joern Moock, Thomas Kohlmann, Todd A. Lee

The utility-based approach to health measurement, exemplified by EQ-5D and Health Utilities Index (HUI), has been challenged on a theoretical basis, but the statistical implications of such an approach have received little attention. To empirically investigate this issue, psychometric properties and statistical efficiency of the EQ-5D and HUI Mark 3 (HUI3) classifiers were compared when scored using preference weighted (WPS)

and equally weighted summary scores using two longitudinal datasets (n stroke =124; n rehabilitation =264). Test-retest reliability, construct validity, responsiveness, and relative efficiency (RE) ratios (with bootstrapped 95% confidence intervals) were examined. WPS had slightly lower test-retest reliability, particularly for EQ-5D (intraclass correlation coefficient=0.61 vs 0.72). For known-groups comparisons, WPS had greater inferential power for both EQ-5D and HUI3 (RE>1). No significant differences in sensitivity to change were observed for EQ-5D [0.71 (95% CI: 0.29,1.33)  $\leq$  RE  $\leq$  0.96(95%) CI: 0.69,1.32) & rsqb; or HUI3 [0.97 (95% CI: 0.89,1.03)  $\leq$  RE  $\leq$  1.23 (95% CI: 0.98,1.72)]. Implications of weighted scoring will depend on whether the weights are greater or less than equal weights where patients fall along the health state classifier continuum. Because utility weights can affect the statistical properties and significance of results, the summary score selected should be appropriate to the purpose of the study and population of interest. Copyright © 2009 John Wiley & Sons, Ltd.

#### Who pays attention in stated-choice surveys?

 Health Economics---2010---Semra Özdemir, Ateesha F. Mohamed, F. Reed Johnson, A. Brett Hauber

Responses of inattentive or inconsistent subjects in stated-choice (SC) surveys can lead to imprecise or biased estimates. Several SC studies have investigated inconsistency and most of these studies dropped subjects who were inconsistent. However, none of these studies reported who is more likely to fail consistency tests. We investigated the effect of the personal characteristics and task complexity on preference inconsistency in eight different SC surveys. We found that white, higher-income and better-educated female subjects were less likely to fail consistency tests. Understanding the characteristics of subjects who are inattentive to the choice task may help in designing and pre-testing instruments that work effectively for a wider range of subjects. Copyright © 2009 John Wiley & Sons, Ltd.