CHENLU SONG

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EDUCATION

Ph.D., Economics, Boston University, Boston MA, May 2021 (expected)
Dissertation Title: *Essays on Health Care Demand and Risk Adjustment*
Main advisor: Randall P. Ellis

M.A., Political Economy, Boston University, Boston MA, May 2016

B.Sc., Economics and Finance, The Hong Kong University of Science and Technology (HKUST), Hong Kong SAR, China, June 2013

FIELDS OF INTEREST

Health Economics, Applied Microeconomics

PUBLICATIONS AND SUBMITTED PAPERS

"Diagnostic Category Prevalence and the Transition to ICD-10-CM," (with Randall P Ellis, Bruno Martins, Heather Hsu, Jeffrey J Siracuse, Tzu-Chun Kuo, Arlene S Ash), *JAMA Network Open*, accepted in February 2020.

WORKING PAPERS

"What Saves More: Coinsurance or Copayment?," (Job Market Paper with Xiaoxi Zhao), November 2019.

"Diagnostic Items: A New Framework for Disease Surveillance, Prediction and Risk Adjustment" (with Randall P Ellis, Corrinne Andriola, Arlene S Ash, Victoria Fan, Summer Hawkins, Heather E Hsu, Brian C Jacobson, Tzu-Chun Kuo, Karen E Lasser, Bindu Kalesan, Jeffrey J Siracuse, Ying Liu, Allan Walkey), October 2019.

WORK IN PROGRESS

"High Speed Rail and Demographic Patterns: Evidence from China".

PRESENTATIONS

8th Conference of the American Society of Health Economics, Poster Session, Washington, DC, 2019

Risk Adjustment Network Annual Conference, Portland, ME, 2019 (presentation by coauthor)

FELLOWSHIPS AND AWARDS

Diversity Scholarship, ASHEcon, 2019
Teaching Fellow, Boston University, 2014 - 2019
Dean's Fellowship, Boston University, 2013
Scholarship for Continuing Students, HKUST, 2010 - 2013

WORK EXPERIENCE

Research Assistant for Randall P. Ellis, Boston University, 2018 – Present
Intern Analyst, Accenture, 2016
Research Assistant for Sujata Visaria, HKUST, 2012 - 2013

TEACHING EXPERIENCE

Teaching Fellow, Department of Economics, Boston University
- EC101 Introductory Microeconomic Analysis, Fall 2017
- EC102 Introductory Macroeconomic Analysis, Spring 2016, Spring 2017

Teaching Assistant, Department of Economics, Boston University
- EC391 International Trade, Fall 2014, Fall 2015
- EC392 International Macroeconomics, Fall 2015
- EC591 International Economics, Fall 2015
- EC201 Intermediate Microeconomic Analysis, Spring 2015
- EC551 The Economics of Labor Markets, Spring 2015
- EC521 Development Policy, Fall 2014

LANGUAGES

Native in Chinese Mandarin and Cantonese. Fluent in English.

COMPUTER SKILLS

STATA, SAS, MATLAB, LaTeX

CITIZENSHIP/VISA STATUS

Chinese/F1

REFERENCES

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October 2020

CHENLU SONG

What Saves More: Coinsurance or Copayments? (Job Market Paper with Xiaoxi Zhao)

We use large-scale health insurance claims data to separately estimate demand elasticities of disaggregated service types under different cost sharing designs. Individual monthly price levels are instrumented by a full set of interactions of plan indicators and month indicators, capturing within year variation in prices at the plan level. We assume that consumers are myopic and backward-looking when deciding how much health care to consume, and interpret our elasticity estimates as the short-run spot price elasticities. We find that consumer demand is more elastic when charged a fixed percent coinsurance rate instead of a fixed dollar copayment, suggesting that coinsurance is more effective for cost containment purposes.

Diagnostic Category Prevalence and the Transition to ICD-10-CM *(with Randall P Ellis, Heather E Hsu, Tzu-Chun Kuo, Bruno Martins, Jeffrey J Siracuse, Ying Liu, Arlene S Ash)*

We use regression discontinuity analysis on monthly time series data to assess changes in diagnostic category prevalence associated with the International Statistical Classification of Diseases, Tenth Revision (ICD-10) transition. IBM MarketScan commercial insurance claims from 2010–2017 are mapped into three widely used diagnostic classification systems: the World Health Organization's disease chapters (WHO); the Department of Health and Human Services Hierarchical Condition Categories (HHS-HCC); and the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System (CCS). This study covers over 20 million privately-insured enrollees under age 65. In all three classification systems, ICD-10 implementation was associated with statistically significant changes in monthly prevalence of any magnitude among 58–59% of diagnostic categories. Clinical review suggested that these patterns were largely due to the omission or addition of diagnoses from the affected diagnostic categories following the ICD-10 transition. Previously developed predictive models and diagnostic classification systems for payment and quality reporting should be used with caution until refined for ICD-10 data.

Diagnostic Items: A New Framework for Disease Surveillance, Prediction and Risk Adjustment *(with Randall P Ellis, Corrinne Andriola, Arlene S Ash, Victoria Fan, Summer Hawkins, Heather E Hsu, Brian C Jacobson, Tzu-Chun Kuo, Karen E Lasser, Bindu Kalesan, Jeffrey J Siracuse, Ying Liu, Allan Walkey)*

We create a new organizational framework of multiple dimensions based on Diagnostic Items (DXIs) that can be used for disease surveillance, prediction of spending, and estimation of risk-adjusted payments, taking full advantage of the fivefold increase in diagnostic details of ICD-10-CM. IBM MarketScan commercial insurance claims from 2016–2017 are first organized using the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System (CCS), and then clinically refined to create approximately 1,700 DXIs. We use linear regression with step-by-step iterative selection of variables to identify new predictors for risk adjustment and utilization prediction, and demonstrate that there is an improvement of 10% above models using only coarser diagnostic categories. These refinements meaningfully reduce potential profit to health plans from selecting enrollees whose expected payments exceed actual costs.