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**YUNAN JI (She/Her/Hers)**

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**HARVARD UNIVERSITY**

**Undergraduate Studies:**

B.A., Mathematics-Economics, Brown University, *magna cum laude* and with Honors, 2014

**Graduate Studies:**

Harvard University, 2016 to present

Ph.D. Candidate in Health Policy and Economics

Thesis Title: “Essays on Health Care Regulation”

Expected Completion Date: May 2022

**References:**

Professor Amy Finkelstein  
Department of Economics  
Massachusetts Institute of Technology  
617-253-4149, afink@mit.edu

Professor Liran Einav  
Department of Economics  
Stanford University  
650-723-3704, leinav@stanford.edu

Professor David M. Cutler  
Department of Economics  
Harvard University  
617-496-0053, dcutler@harvard.edu

Professor Timothy J. Layton  
Department of Health Care Policy  
Harvard Medical School  
617-432-4465, layton@hcp.med.harvard.edu

**Research and Teaching Fields:**

Primary Fields: Health Economics, Public Economics

Secondary Field: Industrial Organization

**Job Market Paper:**

“Can Competitive Bidding Work in Health Care? Evidence from Medicare Durable Medical Equipment”

Prices are a significant driver of high health care spending in the US, but how to reduce prices remains an open question. I examine one widely-touted solution – setting prices via competitive bidding – in the context of a Medicare payment reform. The reform gradually replaced administratively-set prices with prices from competitive bidding for durable medical equipment (DME) in 100 metropolitan statistical areas. Using detailed claim-level data, I estimate that the competitive bidding program reduced the prices of covered items by 45%. However, the program also generated an 11% reduction in quantity, which several pieces of evidence suggest is associated with inefficient supply shortages. One likely cause of the shortage is the auction design, which allows winning bidders to renege on supply commitment. Leveraging novel bid data, I estimate an equilibrium model of optimal bidding and find that the program generated prices that were on average 6% below the market clearing price, consistent with the observed supply shortages. I use the results to show that counterfactual auction designs could reach the desired market quantity while saving 43% in government spending relative to administratively-set prices. The analysis highlights the importance of auction design in achieving desirable outcomes, and suggests that a well-designed competitive bidding program could potentially generate large savings in health care.

*Media coverage: The Washington Post*

**Publications:**

“Voluntary Regulation: Evidence from Medicare Payment Reform.” (with Liran Einav, Amy Finkelstein, and Neale Mahoney)

**Quarterly Journal of Economics** Forthcoming

Government programs are often offered on an optional basis to market participants. We explore the economics of such voluntary regulation in the context of a Medicare payment reform, in which one medical provider receives a single, predetermined payment for a sequence of related healthcare services, instead of separate service-specific payments. This “bundled payment” program was originally implemented as a 5-year randomized trial, with mandatory participation by hospitals assigned to the new payment model; however, after two years, participation was made voluntary for half of these hospitals. Using detailed claim-level data, we document that voluntary participation is more likely for hospitals that can increase revenue without changing behavior (“selection on levels”) and for hospitals that had large changes in behavior when participation was mandatory (“selection on slopes”). To assess outcomes under counterfactual regimes, we estimate a stylized model of responsiveness to and selection into the program. We find that the current voluntary regime generates inefficient transfers to hospitals, and that alternative (feasible) designs could reduce these inefficient transfers and raise welfare. Our analysis highlights key design elements to consider under voluntary regulation.

“Randomized trial shows healthcare payment reform has equal-sized spillover effects on patients not targeted by reform.” (with Liran Einav, Amy Finkelstein, and Neale Mahoney)

**Proceedings of the National Academy of Sciences of the United States of America**

117.32 (2020):18939-18947

Changes in the way health insurers pay healthcare providers may not only directly affect the insurer’s patients but may also affect patients covered by other insurers. We provide evidence of such spillovers in the context of a nationwide Medicare bundled payment reform that was implemented in some areas of the country but not in others, via random assignment. We estimate that the payment reform—which targeted traditional Medicare patients—had effects of similar magnitude on the healthcare experience of nontargeted, privately insured Medicare Advantage patients. We discuss the implications of these findings for estimates of the impact of healthcare payment reforms and more generally for the design of healthcare policy.

“Health care spending, utilization, and quality 8 years into global payment.” (with Zirui Song, Dana Safran, and Michael Chernew)

**New England Journal of Medicine** 381.3 (2019): 252-263

We examine changes in spending, utilization, and quality through 8 years of a population-based global payment model – the Alternative Quality Contract (AQC) program in Massachusetts – using a difference-in-differences method that compares enrollees whose physician organizations entered the AQC with comparable privately insured enrollees in control states. We find the payment model to be associated with slower growth in spending and higher quality of care.

*Media coverage: Boston Globe, The Harvard Gazette, WBUR, Becker’s Hospital Review, Health Leaders Media, FierceHealthcare, Yahoo Finance*

“Mandatory Medicare bundled payment program for lower extremity joint replacement and discharge to institutional postacute care: interim analysis of the first year of a 5-year randomized trial.” (with Amy Finkelstein, Neale Mahoney, and Jonathan Skinner)

**Journal of the American Medical Association** 320.9 (2018): 892-900.

We analyze the first year of a 5-year bundled payment randomized controlled trial (Comprehensive Care for Joint Replacement) where 75 metropolitan statistical areas (MSAs) were assigned to treatment and 121 control MSAs were assigned to control. We find that the bundled payment program was associated with reduced utilization of institutional post-acute care.

*Media coverage: Bloomberg, The New York Times, Orthopedics Today*

Publication Prior to PhD:

“Punishment can support cooperation even when punishable.” (with Tingting Fu, Kenju Kamei, and Louis Putterman) **Economics Letters** 154 (2017): 84-87.

Selected Research Papers in Progress:

“The Value of Hospice Care: Evidence from Facility Openings.” (with Edward Kong)

Over 50% of Medicare decedents today use hospice, double the rate from fifteen years ago. We study the impact of hospice care on patient well-being and healthcare spending at the end of life. Between 1999 and 2017, the number of hospice facilities increased drastically from about 2000 to 4500. Leveraging variation in the availability of hospices generated by the opening of new facilities, we estimate the causal impact of hospice care. We focus on three sets of outcomes: health care spending, patient well-being, and spillover effects. We analyze changes in health care spending using detailed administrative data. We measure patient well-being through patient assessment data, which include detailed measures of physical and psychological well-being including pain, mood, and ability to carry out activities of daily living. Finally, since end-of-life care often involves informal care provided by one’s family, going on hospice could affect not only the spending and well-being of the patient but also those of their caretaker (who is often their spouse). We examine the spillover effect of one’s hospice use on the health care utilization and well-being of one’s spouse to gain a more complete understanding of the impact of hospice.

“Does Price Regulation Affect Innovation? Evidence from Durable Medical Equipment.”

I study how government price regulations affect the quantity and quality of health care products available in the market, exploiting a Medicare payment reform that effectively reduced the reimbursement price for certain durable medical equipment (DME) by 45% while leaving the price of other DME unchanged. Combining the FDA registry data on the universe of DME available in the US with Medicare claims data on DME utilization and patient outcomes, I examine the impact of this large price shock on the rate of new products entering the market and the characteristics of these products by comparing the affected products with those unaffected by the price cut.

“Treatment Choice and Outcomes for End Stage Renal Disease: Evidence from a Nationwide Randomized Evaluation.” (with Liran Einav, Amy Finkelstein, and Neale Mahoney)

Patients with End-Stage Renal Disease (ESRD) account for 7% of Medicare fee-for-service spending despite making up less than 1% of Medicare enrollment. For patients with ESRD, home dialysis is often associated with better outcomes and lower spending than facility-based dialysis. However, home dialysis rates in the US trail behind those of other developed nations. Minorities and low-income individuals are also significantly less likely to use home dialysis. We study the first year of a nationwide randomized controlled trial that provides financial incentives for dialysis facilities and clinicians to increase home dialysis. We evaluate the overall impact of the program on home dialysis rates and explore how the impact varies by patient and provider characteristics. We further combine the randomized trial with additional quasi-experimental evidence to provide causal estimates of home dialysis use on patient outcomes, which has important implications for the design of the Medicare ESRD program.

Teaching Experience:

Summer 2020	Math Camp for Incoming PhD Students, Harvard University, Instructor
Summer 2019	Math Camp for Incoming PhD Students, Harvard University, Instructor
Spring 2013	Introduction to Econometrics, Brown University, Teaching Assistant

**Other Employment and Affiliation:**

- 2021 – present Institute for Fiscal Studies, Research Fellow  
2021 – present Centre for Economic Performance, London School of Economics, Visiting Student  
2014 – 2016 National Bureau of Economic Research, Research Assistant

**Professional Activities:**

*Referee:* American Economic Review, American Economic Journal: Applied Economics, American Journal of Health Economics, Journal of Health Economics, Journal of Political Economy, Journal of Public Economics, New England Journal of Medicine, Quarterly Journal of Economics, RAND Journal of Economics, Review of Economic Studies

*Reviewer:* American Society of Health Economists Annual Conference

**Honors, Scholarships, and Grants:**

- 2021 – 2022 Co-Investigator, J-PAL North America Grant, with Liran Einav, Amy Finkelstein, and Neale Mahoney. \$99,000.  
2021 – 2022 Harvard University Dissertation Completion Fellowship  
2021 Harvard LEAP Grant, with Edward Kong. \$6,600.  
2020 Harvard Institute for Quantitative Social Science (IQSS) Research Grant \$3,000.  
2020 – 2021 Harvard Graduate Student Council Summer Research Grant. \$2,000.  
2017 – 2019 Co-Investigator, J-PAL North America Grant, with Amy Finkelstein, Neale Mahoney, and Jonathan Skinner. \$206,036.28  
2016 – 2018 Harvard Graduate School of Arts and Sciences Graduate Fellowship  
2014 Omicron Delta Epsilon  
2014 Samuel Lamport Prize for Outstanding Thesis in Economics  
2014 Solsbery Fellowship