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Ms. Brett Maranjian
National Bureau of Economic Research
1050 Massachusetts Ave
Cambridge, MA 02138

Dear Ms. Maranjian,

I am writing to apply for the NBER Health Economics Boot Camp to be held December 3-5, 2019 in Cambridge, MA. I learned about this opportunity from my advisor David Cutler.

I am a fifth year PhD candidate in the Economics track of Harvard's Ph.D. program in Health Policy. My current research interests are in understanding how care is rationed within public health care systems, and in assessing the welfare effects of public vs private provision in health care. I have ongoing projects in both these areas using UK administrative data.

I understand that you plan to give priority to individuals in years 2-4 of their graduate programs. However, I would be be very grateful if I could still be considered by the selection committee. I was disappointed not to be able to attend last year because I was on a research trip outside the US and I was delighted to see there is another opportunity to apply this year!

Attending this event would be an invaluable opportunity to interact with and learn from leading academics in the field of health economics at a pivotal stage of my graduate training. I am excited to hear the speakers' opinion on the most pressing questions and fruitful avenues for research in health economics. I hope that my current research on a non-US system will bring a novel perspective to the event, and I'm interested in connecting with other graduate students with a view to collaborating in the future.

I hope you will find my level of economics preparation to be more than adequate for participation. I have done the three semester Econometrics sequence in the Economics department at Harvard, as well as Public Economics I and II, Health Economics and Industrial Organization (all at grade A). I also took a graduate level machine learning sequence in Harvard's computer science department.

Find enclosed my curriculum vitae and a short rationale for attending the boot-camp. I would be grateful if you could share these with the selection committee. Professor David Cutler will be writing separately with a letter of recommendation. Please note that since I am currently based in Cambridge, MA, I would not require any funding for travel or accommodation to attend the event. Please do contact me by e-mail or telephone if you require any further information.

Yours sincerely,



Samantha Burn

encl: Curriculum vitae, Statement of Purpose

Samantha Burn

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RESEARCH INTERESTS

Health Economics, Public Economics, Industrial Organization

EDUCATION

Harvard University — 2015-
Ph.D. Health Policy (Economics track)

Oxford University, Nuffield College — 2008-2010
M.Phil. Economics (*Distinction*)

Oxford University, New College — 2005-2008
B.A. Philosophy, Politics and Economics (*First class honours*)

EMPLOYMENT

Teaching Fellow — 2017-
Harvard University Economics Department and *Harvard Kennedy School*

Visiting Research Fellow — 2016-
Imperial College Business School, London, UK

Visiting Researcher — 2016
Institute for Fiscal Studies, London, UK

Health Economist — 2014-2016
World Bank Group, Washington DC, US

Consultant — 2014-2015
Bates White Economic Consulting, Washington DC, US

Research Fellow in Health Economics — 2012-2014
University of Birmingham, UK

Senior Economist/Overseas Development Institute Fellow — 2010-2012
National Bureau of Statistics, Republic of South Sudan

Assistant Economist — 2009
Department for Work and Pensions, UK

WORK IN PROGRESS

Universal coverage with financial constraints: How public health care systems ration care
Competition and outsourcing in the English National Health Service
Open surgery: The effect of score-cards on patient allocation and physician performance

HONORS AND AWARDS

Harvard Graduate School of Arts and Sciences Merit Fellowship	2019-2010
Kennedy Memorial Trust Summer Scholarship	2018
Harvard Summer Pre-Dissertation fellowship	2016
Harvard Graduate School of Arts and Sciences Fellowship	2015-2017

	Economic and Social Research Council Scholarship	2008-2010
	Nuffield College Scholarship, University of Oxford	2008-2010
	New College Scholarship, University of Oxford	2005-2008
TEACHING	Economics of Health Care Policy, Harvard (Joseph Newhouse)	2018
	Graduate Microeconomic Theory, Harvard (Christopher Avery)	2018, 2019
PRESENTATIONS	American Society of Health Economists 8th Annual Conference	2019
	Harvard Department of Health Care Policy Health Economics Seminar	
	Harvard Health Policy seminar, Harvard Health Economics Seminar	2018
	International Health Economics Association conference	2017
	International Health Economics Association conference	2015

ADDITIONAL INFORMATION

Nationality: British
Computing: Proficient in STATA, MATLAB LaTeX; intermediate Python, R
Languages: Native English, professional level French
Memberships and affiliations: International Health Economics Association, American Society of Health Economists, Institute for Quantitative Social Science (IQSS)
Relevant courses: Graduate microeconomics, econometrics, health economics, public economics, industrial organization, machine learning

REFERENCES

Professor David Cutler
Otto Eckstein Professor of
Applied Economics, Harvard University

Professor Carol Propper
Professor of Economics
Imperial College Business School, UK

Teaching reference:
Professor Joseph Newhouse
Professor of Health Policy
Harvard University

Statement of Purpose for Health Economics Boot Camp

Samantha Burn*

1 Motivation

I'm a fifth year economist in the Health Policy PhD program at Harvard, advised by David Cutler and Carol Propper. I'm interested in the intersection of industrial organization, public finance and health care. My current research projects investigate the efficiency of rationing in public health care, and the welfare effects of outsourcing health care provision to the private sector.

I want to attend the health economics boot camp to help me reach the research frontier in health economics, and to connect with other graduate students and professors interested in similar problems. Reaching the research frontier involves asking important questions, identifying data and empirical settings to shed light on these questions, and using the right methods to draw conclusions about behavior and welfare. It's an exciting time to be studying health economics for at least two reasons. First, there is increasing integration of really high quality empirical work with public finance techniques to draw inferences about welfare (for example, the recent papers on take-up and targeting in public programs by Lieber and Lockwood [2019] and Finkelstein et al. [2019]). Second, there is more and more novel data available that allows us to ask new and interesting questions about provider behavior and private and other non-Medicare payers (e.g. electronic medical records, private claims, Medicaid Max data).

2 Current research

My current research aims to understand how care is allocated within the English National Health Service. I'm particularly interested in the interplay between public insurance and the private sector. Below I outline two of my ongoing projects.

2.1 Private entry and competition in the English National Health Service

Publicly-funded services are often delivered by both public and private providers. Because quality is imperfectly observable, there is concern that for-profit providers may increase profits by reducing quality or cream-skimming less costly individuals, harming public incumbents [Hart et al., 1997, Besley and Malcomson, 2018]. In this paper, I investigate the impacts of an English National Health Service reform that allowed private hospitals to compete with public incumbents for patients at a fixed price. The reform both increased overall volume of elective surgery and shifted a substantial fraction of it to the private sector. For example, by 2016/17, a third of NHS-funded hip replacements were carried out by the private sector [NHS Digital, 2018].

To estimate the causal effects of the policy, I use a difference-in-difference design comparing markets with high and low entry. I predict private entry based on the pre-reform locations of hospitals. I use administrative data on all publicly-funded hospital admissions. I find that private entry reduces readmission rate and wait time and increases quality of life gains from surgery. Private hospitals cream-skim by servicing less complex patients. Nevertheless, private competition appears to induce improvement in quality of public incumbents. Interestingly, quality also improves for procedures that are not affected by private entry. I provide some suggestive evidence that the observed improvements are driven by lower crowding at public hospitals.

In the final part of the paper, I attempt to assess the implications for aggregate patient welfare of the policy change using a simple model of patient utility. I compare the outsourcing policy with a hypothetical alternate policy that expands capacity optimally within the public sector. As middle- and high-income areas benefit more from the outsourcing policy relative to public expansion, the welfare comparison is dependent on social welfare weights.

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2.2 Universal coverage with financial constraints: How public health systems ration care

In the English National Health Service (NHS), most services are free at the point of use. The system has historically been capacity constrained, and care is rationed through wait-times and selective referral [Robertson et al., 2017]. There is little evidence on whether rationing is efficient i.e. whether available resources are allocated to patients with the highest expected returns. This project sheds light on NHS rationing by focusing on access to secondary care.

I first document substantial across-doctor heterogeneity in propensity of primary care doctors to refer patients to secondary care, adapting the approach of Abaluck et al. [2016]. I find that doctors have substantially different thresholds for referral for surgery, and that given the same referral propensity, they refer different patients. Referral behavior does not appear to maximize health gains. Likelihood of referral is lower when local wait-times are higher. I rationalize this with a simple model of doctor behavior in which a doctor acts as an agent for her patients, but also partially internalizes the effect her referral has on other patients through increased wait-times. This model reflects the tension inherent in a doctor's dual roles as agent for her patient and steward of health-system resources.

I then exploit changes in the NHS funding formula across space and time to estimate the marginal returns to health-care spending. Increased funding increases probability of referral for surgery, and marginal patients referred are likely to have lower severity and lower potential gains from treatment. We also investigate potential substitution away from referrals for private-pay procedures. Finally, we evaluate how much referral decisions deviate from the socially optimal trade-off between referring additional patients with positive marginal benefits and increasing wait-times.

I use the Clinical Practice Research Datalink (CPRD), a dataset containing all primary care electronic medical records for a 7% representative sample of all patients and primary care practices in the United Kingdom. This dataset is linked to the universe of inpatient admissions (Hospital Episode Statistics) and the Patient-Reported Outcome Measures (PROMs) datasets.

References

Jason Abaluck, Leila Agha, Chris Kabrhel, Ali Raja, and Arjun Venkatesh. The determinants of productivity in medical testing: Intensity and allocation of care. *American Economic Review*, 106(12):3730–64, December 2016. doi: 10.1257/aer.20140260. URL `http://www.aeaweb.org/articles?id=10.1257/aer.20140260`.

Timothy Besley and James M. Malcomson. Competition in public service provision: The role of not-for-profit providers. *Journal of Public Economics*, 162:158 – 172, 2018. ISSN 0047-2727. doi: https://doi.org/10.1016/j.jpubeco.2018.04.004. URL `http://www.sciencedirect.com/science/article/pii/S0047272718300598`. In Honor of Sir Tony Atkinson (1944-2017).

Amy Finkelstein, Nathaniel Hendren, and Mark Shepard. Subsidizing health insurance for low-income adults: Evidence from massachusetts. *American Economic Review*, 109(4):1530–67, April 2019. doi: 10.1257/aer.20171455. URL `http://www.aeaweb.org/articles?id=10.1257/aer.20171455`.

Oliver Hart, Andrei Shleifer, and Robert W. Vishny. The proper scope of government: Theory and an application to prisons*. *The Quarterly Journal of Economics*, 112(4):1127–1161, 1997. doi: 10.1162/003355300555448. URL `http://dx.doi.org/10.1162/003355300555448`.

Ethan M. J. Lieber and Lee M. Lockwood. Targeting with in-kind transfers: Evidence from medicaid home care. *American Economic Review*, 109(4):1461–85, April 2019. doi: 10.1257/aer.20180325. URL `http://www.aeaweb.org/articles?id=10.1257/aer.20180325`.

NHS Digital. Hospital Episode Statistics, 2018.

Ruth Robertson, Lillie Wenzel, James Thompson, and Anna Charles. Understanding NHS financial pressures how are they affecting patient care? Technical report, King's Fund, 2017.