Helena Roy

mail: helenar@stanford.edu
web: https://www.helenaroy.com

Education

PhD	Stanford	Economics (Behavior / Health / Innovation)		2019–25
MPhil	Nuffield College, Oxford	Economics	Distinction	2017–19
BA	Pembroke College, Cambridge	Economics	Double First (Rank 8/156)	2013–16

Research

(Selected) Work in Progress

Supply-Side Determinants of Variation in Cesarean Section Use: Evidence from Medicaid — w/ Helen Kissel (Stanford)
Birth Centers and Maternal and Infant Health — w/ Helen Kissel, Ambar La Forgia (Berkeley), Petra Persson (Stanford), Maya Rossin-Slater (Stanford)
Willingness-to-Pay for Physician-Patient Concordance by Gender and Race — w/ Helen Kissel
The Impact of Broadband Internet Subsidies on Educational Outcomes — w/ Sarah Eichmeyer (Bocconi)

Publications / Other Writing

with Emma Casey (Stanford) and Emma Rockall (Stanford) — 2024
Designing an AI Bond for Growth and Shared Prosperity in the UK — UK Day One

with Rohini Pande (Yale) — 2021
"If you compete with us, we shan't marry you" The (Mary Paley and) Alfred Marshall Lecture — European Economic Review

with Adam Rosenberg (Stanford) — 2020
Comment on: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research — OSTP

Grants & Fellowships

Stanford Institute for Research in the Social Sciences	Funding for survey experiments ($12,750)	2021-2023
Stanford DARE Fellowship	Two years of full graduate funding	2022-24
Spectrum PHS Pilot Grant	Funding for Medicaid data acquisition ($30,000)	2022-23
Stanford Causal Science Center Fellowship	One year of full graduate funding	2021-22
ESRC Doctoral Training Fellowship	Four years of full graduate funding (UK equivalent to NSF)	2017-2019

Seminars & Conferences

NBER Innovation Bootcamp — 2024
Allied Social Science Associations (ASSA), Federal Communications Commission (FCC), NBER Behavioral Public Bootcamp — 2022

Employment

Stanford	Teaching Assistant for ECON 102A: Introduction to Statistics	Sept.-Dec. 2024
QuantCo	Healthcare Evidence Strategy	June-Sept. 2022 + June-Sept.2023
Stanford	Research Assistant on Innovation + Health (Prof. Heidi Williams)	June 2020 - Aug. 2021
EPoD (Harvard)	Research Assistant (Prof. Rohini Pande) on Gender and Labor	2018-19
Deutsche Bank	Natural Resources / Healthcare M&A	Oct. 2012 - Mar. 2013

Extra-curricular and Volunteering

Board Trustee	Social Action for Health (UK)	2022-2024
Triathlete	Stanford University Triathlon Team	2022-2024
Diver	PADI Open Water, PADI Freediver	2019-Present
Mentor	Social Mobility Foundation (UK)	2013-2023

I am a PhD candidate in economics at Stanford University. My primary field is health economics, and my research interests are in behavior, information, and technology use within healthcare. Broadly, I am interested in how patients and physicians demand, access, and process information related to health decisions. Joining the NBER Digital Economics and AI Tutorial would be an excellent opportunity to engage with frontier research, and learn how other researchers are modelling the impacts of novel information technologies in different industries.

I am in my sixth year and will graduate in spring 2025. After graduation, I am doing a two-year postdoc with a digital health, economics, and policy group. My postdoc will focus on two primary projects. The first is a study of the increase in direct-to-consumer diagnostics, which have been made particularly prevalent through social media advertising and digital health technologies after the COVID-19 pandemic. I plan to begin by examining the specific case of ADHD, to shed light on some economics of interest.[1] Later, I plan to consider the impact of direct-to-consumer health monitoring and diagnostic tests, particularly the externalities such products might have on public health systems.

Increased demand for ADHD diagnoses has been observed in both the US and UK. Data from the NHS suggests that in 2018/2019, the number of patients on CNS stimulants or ADHD medications was 103,000; by 2023/2024 that had doubled, to 202,000 patients.[2] While this increase is large, it is minor compared to the increase in referrals, which rose fourfold in the same period.[3] This has put substantial pressure on the NHS. Waitlists for an assessment by a psychiatrist are as much as 2-3 years in some parts of the UK. A BBC investigation suggested that nearly 200,000 adults were on waiting lists for ADHD assessments.

Common hypotheses for the drivers of increased demand include: increases in triggers for anxiety, ADHD, and associated disorders (such as the COVID-19 pandemic), increasing discussion on ADHD symptoms and treatments via social media, and increased access to diagnosis and treatment for those with suspected ADHD via telehealth. All three of these channels can both bring new participants into the market (e.g. consumers who did not have ready access to physical appointments, but can attend an online one) and improve the welfare of those already in the market (e.g. consumers with a prescription who prefer the convenience of online management). For individuals with ADHD, medications can be life-changing. Anecdotal evidence suggests that incidence has increased among potentially marginalized groups—such as adult women—who did not conform to the typical perception of ADHD presentation.

In a market with perfectly informed consumers, these trends may therefore not be a cause for concern. The issue arises given healthcare is a market of asymmetric information (Arrow 1962). Advertising and social media content could persuade consumers that they have a condition when they do not, leading to demand for diagnosis.[4] This is particularly true of conditions requiring subjective assessment by a physician, such as ADHD, rather than a chemical test. Such assessment has been shown to be susceptible to bias from relative age in school year (Evans et al 2010), and can have spillover effects on other family members (Persson et al 2024). Physicians have spoken about facing increasing pressure from patients to diagnose. Tito Mukherjee, a psychiatrist who is the lead consultant for the Adult ADHD Service at the Cheshire and Wirral Partnership NHS

[1] Many similar dynamics are present in expanding markets for asymptomatic testing, such as hormone and fertility tests, H. pylori tests, and full-body MRI scans.
[2] NHS Business Services Authority, September 14, 2023, "Medicines Used in Mental Health - Central nervous system (CNS) stimulants and drugs used for ADHD". Available here.
[3] The BBC, 25 July, 2024, "Eight-year ADHD backlog at NHS clinics revealed". Available here.
[4] One of the few academic studies in this area analyzed the top 100 TikTok videos on ADHD for quality of medical information. Over half (52%) were classified as misleading, 27% as personal experience, and 21% as useful (Yeung et al 2022). Research on other clinical areas has found that fewer than a third of the most-advertised medications in the US have high therapeutic value (defined as an improvement over existing treatments) (Patel et al 2023).

Foundation Trust, said there was almost a sense that "you have ADHD until proven otherwise."[5] Many have pointed to a burgeoning genre of social media content revolving around ADHD as a catalyst.

Inappropriate treatment is costly and could be harmful. For those without ADHD, stimulants can have real consequences on physical and mental health, including appetite suppression, cardiovascular issues, and addiction. Information asymmetries driving unnecessary diagnoses and treatment is especially concerning in a public healthcare system, where capacity constraints are more salient. Finally, online assessment for ADHD could miss important conditions that create similar symptoms. Thyroid problems, low vitamin levels, and other issues, can all cause symptoms that mimic those of ADHD and other mental health conditions.

A notable consequence of the surge in referrals and diagnoses have been worldwide medication shortages. Insufficient supply for the increased demand reflected in part issues around scaling production. Such is the concern that the CDC recommended all physicians prescribe naloxone (an overdose reversal drug) to any patient potentially obtaining ADHD medications outside the legal market.[6] (Counterfeit drugs can include contaminants, and fentanyl is a real risk.) In September 2023, the NHS and Department of Health and Social Care (DHSC) in the UK issued a patient safety alert warning of ADHD medication shortages. Physicians were told not to start new patients on ADHD drugs until further notice.[7] Shortages are dangerous for anyone taking a stimulant with a diagnosis of ADHD—whether they have the condition or not— as a forced stop in medication can lead to withdrawal, and disruption in work and social life.

The second project is a large-scale prospective controlled trial of an AI-driven screening program for heart failure. Jointly with a team of cardiologists and primary care practitioners, I am designing and trialling the screening program, informed by the behavioral health literature. The novel device used offers a new opportunity to develop population screening for one of the most significant causes of mortality in the UK and US. We will assess primary care practitioners uptake and use of the device to provide insight into deploying AI in clinical settings.

During my PhD, I have been advised by Professors Heidi Williams, Liran Einav, and Maya Rossin-Slater. I have built a strong foundation for analyzing multiple large scale administrative datasets to understand the drivers of healthcare use and the impacts of technology policy. Much of my research focuses on understanding the causal contributions of supply-side factors in C-section use — the most common inpatient procedure in US — and other decisions related to maternal healthcare. Treatments in this clinical area are often under-researched. Better understanding of the drivers of treatment choices and outcomes using population health data offers an impactful avenue for improving decision-making for mothers and infants.

Outside of my research, I have taken a keen interest in AI policy. Jointly with Emma Rockall and Emma Casey (both Stanford University, I wrote a policy briefing on a AI bond for the UK, designed to account for the economics of innovation and productivity and conscious of the UK's specific economic context. We were awarded the Best Policy Proposal for Erik Brynjolfsson's "AI Awakening" seminar class, and published the briefing with UK Day One.

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[5] The BBC, October 3, 2024, "Why an ADHD diagnosis can be a mixed blessing". Available here. For more clinicians testimonies of working with telehealth companies, see: Time, November 1, 2022, "The Online Therapy Bubble Is Bursting". Available here.
[6] The New York Times, June 13, 2024, "A.D.H.D. Startup Executives Accused of $100 Million Fraud in Adderall Scheme". Available here.
[7] The Guardian, September 29, 2023, "Doctors in England told not to start new patients on ADHD drugs due to shortage". Available here.