

**NBER Innovation Policy Post-Doctoral Fellowship
Research Proposal
Adam Sacarny**

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As an Innovation Policy Post-Doctoral Research Fellow, I would be excited to continue the research agenda that I have already begun with my dissertation. My research has studied health care using methods that have traditionally been applied in other fields of economics. The key focus of my agenda is to understand the distribution and determinants of health care productivity – the ability to produce health care outcomes such as patient survival given a fixed amount of inputs like labor or capital. My research has shown that pathologies like slow technology adoption and productivity disparities are hardly unique to the health care sector. While the lessons from understanding productivity are important for any industry, I feel that they are especially valuable for health care policy at this time of systemic change in the health care delivery system. I look forward to extending the analyses of my dissertation and applying my research methods to new areas within the health care sector.

I am particularly interested in extending the work of my job market paper. In this research, I focus on the adoption of a revenue-generating practice that rewards hospitals for submitting detailed documentation about their heart failure patients to Medicare. Doctors must supply the hospital with this documentation, but they are not paid to provide it. Since the hospital has different incentives from its physicians, I view agency conflicts as the key frictions preventing hospitals from capturing the additional revenue. I exploit the fact that physicians practice at multiple hospitals to separate the contributions of doctors and hospitals to adoption. I show that about two-thirds of the dispersion in adoption across hospitals reflects disparities in how much documentation hospitals extract from their physicians. Consistent with organizational research in a variety of industries, my findings suggest that one reason hospitals fail to adopt technologies is their inability to motivate doctors to cooperate.

There are several avenues for extending this research that I will pursue. First, I would like to study how doctors and hospitals learn to submit detailed documentation. Learning models are central to economic studies of technology adoption, and I will investigate their application to the heart failure documentation setting. These analyses benefit from observing large numbers of patients treated by each doctor. I recently gained access to data that indicates the attending physician for nearly 100% of Medicare hospital patients. I am excited to study the evolution of documentation practices using such a rich sample.

Another direction I would like to explore uses this policy change to understand how payment incentives drive improved documentation. This extension would require exogenous variation in the hospital's return to providing the detailed information about heart failure. I have identified shifters in this return due to the rules that Medicare used

to construct its payment categories. These rules determined whether a hospital's payment for a patient should depend on the patient's severity of illness. Payment categories that passed certain thresholds were "severity-adjusted", while categories that fell below these thresholds were not. The result of this policy is a set of discontinuities in the return to detailed documentation. I plan to exploit this natural experiment using an instrumental variables regression discontinuity approach.

I also look forward to continuing joint research with Amitabh Chandra, Amy Finkelstein, and Chad Syverson on hospital treatment productivity, or the ability to generate patient survival with a given amount of resources. This research studies the role of heart attack treatment productivity in the size and growth of hospitals. We find that higher treatment productivity hospitals tend to have a greater market share and tend to grow over time. We view these findings as "signposts of competition", facts that are complementary to the large literature documenting them in other industries.

One concern with this work is that it reflects productivity in only one part of the hospital, even though hospitals are multi-product firms. As a post-doctoral researcher, I would address this criticism by analyzing productivity in treating other medical conditions like hip fractures and pneumonia. It is not immediately obvious whether productivity in treating different types of patients should be positively or negatively correlated. This extension will shed light on the extent to which hospitals specialize in treating particular conditions.

My plan to extend my research is motivated by the timeliness of the issues that I study. Currently, public insurance systems are being reformed to better align provider incentives with the interests of patients. For example, Medicare is now experimenting with new payment mechanisms that directly incentivize the adoption of lifesaving, evidence-based methods of caring for patients. These reforms are part of the Affordable Care Act and are likely to continue in the coming years. I am particularly excited to produce research that will inform how to design these policies to cost-effectively improve health outcomes.

In additional post-doctoral research I look forward to training my analysis of productivity on health insurance programs directly. As managed care organizations play increasingly central roles in Medicare and Medicaid, understanding the quality and cost-effectiveness of public insurers relative to their private alternatives is a crucial input to policy.

I am particularly interested in studying the outsourcing of Medicaid programs for people with disabilities. The effects of private managed care in these populations are understudied even though many people with disabilities are especially reliant on health care. Moreover, several states are expanding the role of managed care in their Medicaid programs to include long-term care, which has traditionally been provided by the public fee-for-service system. By addressing high cost components of health spending, such expansions offer the promise of large fiscal savings. However, it remains an open question whether these gains can be realized, and if so, whether they come at the expense of the health of beneficiaries.

I have already identified several natural experiments that switch individuals from public insurers to private managed care. In California, many disabled Medicaid recipients were moved from the public fee-for-service system to managed care organizations on the basis of their birth date, creating exogenous variation in exposure to managed care. In states that are moving to outsource their long-term care, some counties are implementing these policies before others, providing another source of exogenous variation in managed care exposure. I look forward to using my knowledge of medical claims data and econometric techniques to leverage these natural experiments to study the effects of outsourcing Medicaid.