

Proposal for 2011 Russell Ackoff Doctoral Student Fellowships for
Research on Human Decision Processes and Risk Management

**The Effect of Insurance Changes on the Demand for Health Care:
Evidence from Massachusetts**

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Project Title:

The Effect of Insurance Changes on the Demand for Health Care: Evidence from Massachusetts

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Project Description:

Risk-averse individuals are willing to pay for insurance to guarantee protection against potential future losses due to unexpected shocks. Medical expenses are one of the largest sources of uncertainty facing families and the type of unlikely and expensive wealth shocks that insurance is suited to address. In general, families' decisions regarding health services are based on a number of factors including cost, availability of services, and risk preferences. Insurance coverage is likely to be a key factor in decisions about what type of care to seek and at what stage of need; for instance, those with insurance may be more likely to seek primary care since they do not face a direct monetary cost for this service, while those without insurance may be more likely to put off care until it reaches an acute stage and therefore might be more likely to end up seeking emergency room (ER) care and/or being hospitalized.

In this project, I aim to analyze how health care demand decisions are impacted by changes in insurance. It is typically an empirical challenge to identify the causal effect of insurance on demand for health services, but the recent statewide individual insurance mandate (and other reform efforts) in Massachusetts offers an opportunity to evaluate the effects of a broad and plausibly exogenous change in insurance on patterns of demand for health services. Specifically, I propose to use the natural experiment in Massachusetts as an opportunity to study the utilization patterns of different types of care following an exogenous shock to population insurance levels. Does demand for different types of health services change when people gain health insurance (and thereby potentially have increased access to care and face lower prices)? In particular, what are the patterns of substitution in demand for hospital outpatient, ER, and non-hospital (physician office) care following reform in Massachusetts, as compared to similar states that did not experience reform?

As a first step towards understanding how patterns of insurance and utilization have changed following health care reform in Massachusetts, I have conducted preliminary analysis using hospital discharge, outpatient, and ER data from that state. In this initial analysis, I find evidence suggesting that the probability that a hospital visit

was an outpatient or ER visit decreased for individuals who gained insurance during or after reform in Massachusetts. This suggests that those who gained insurance are substituting away from hospital care, potentially towards care received in physicians' offices or local clinics. Though this preliminary evidence is suggestive, the existing data are limited in two major ways. First, I cannot measure use of non-hospital sources of care, which is critical to understanding whether people are indeed substituting away from hospital outpatient and ER care towards primary care; second, the data are limited to Massachusetts and therefore I cannot compare trends in that state to trends in other states that did not undergo reform. National-level data with state identifiers will allow me compare outcomes in Massachusetts to otherwise similar ("control") states that did not undergo reform, thereby isolating the effects of the reform on healthcare demand (in the usual "difference-in-differences" approach).

Thus, I propose to extend this analysis by obtaining data that allow me to:

1. Measure physician office in addition to hospital outpatient and ER use, and
2. Compare trends in Massachusetts to those in other states that did not undergo reform.

The data that I propose to use are from the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS), which are conducted annually by the U.S. Census Bureau and sponsored by the U.S. Department of Health and Human Services (DHHS)/Centers for Disease Control and Prevention (CDC)/National Center for Health Statistics (NCHS). The NAMCS is designed to provide information about the provision and use of ambulatory medical care services across the United States and is based on a sample of visits to non-federal employed office-based physicians who are primarily engaged in direct patient care. Much of the NAMCS data are publicly available, however certain variables are "restricted" (due to confidentiality concerns) and can only be accessed in person at NCHS Research Data Centers (RDC). Among these restricted variables are state identifiers, which will be crucial to identifying the effects of reform in Massachusetts. Use of the NHAMCS will allow me to compare hospital utilization in Massachusetts following reform to utilization in similar states that did not experience reform ("control states"). The National Hospital Ambulatory Medical Care Survey (NHAMCS) is designed to collect data on the utilization and provision of ambulatory care services in hospital emergency and outpatient departments. Findings are based on a national sample of visits to the emergency departments and outpatient departments of non-institutional general and short-stay hospitals. Like the NAMCS, state identifiers in the NHAMCS are considered "restricted" and are only available in-person at the NCHS RDC. Thus, to proceed with this project, it will be critical to gain access to the NCHS RDC. My funding request on the following page is based on the associated fees and travel costs.

Funding Request

I am requesting funding from the Ackoff Fellowship to obtain access to the data described above, which will be instrumental in progressing with this project. Specifically, crucial “restricted” variables (including state codes) are only available to researchers in-person at the National Center for Health Statistics Research Data Center (RDC), which is located in Hyattsville, Maryland. Therefore, in order to access the data needed for this project, I will need to travel to Hyattsville and pay the necessary fees to use the RDC services and data. I estimate that this project will require two trips to the RDC for data analysis purposes; each visit requires a two-day minimum at the RDC. Hence, I have structured the detailed budget below based on two two-day trips to use the RDC in Maryland. In addition, NCHS requires a one-time set-up fee, which is also included.