



ACKOFF FELLOWSHIP APPLICATION FORM

Deadline: March 3, 2013 (midnight)

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How did you learn about the Ackoff Fellowship: E-mail to Wharton doctoral list

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Faculty Department: Wharton Health Care Management and Economics

Project Title: Cost-shifting between public and private insurers

Amount of Request: \$4,000

Other sources of Support for your research:

Travel \$0

Grants \$4,000 (2012 funding; almost entirely disbursed; used to fund a different project; see final page for details)

Other (Specify) \$0

Cost-shifting between public and private insurers

It is often claimed that public insurance uses its market and fiat power to under-pay for services, whereas private insurance is forced to over-pay as a direct consequence--a phenomenon known as cost shifting (Morrisey 1996). As will be discussed, no reliable estimate of cost shifting exists. Knowing the true extent of cost-shifting would affect assessments of the welfare implications of public insurance, and would alter prominent estimates of the impact of creating a public insurance plan to compete with private plans (e.g. Schoen, Davis, and Collins 2008) and that failed proposal's replacement, the Multiple State Plan currently being implemented by the federal government.

Theoretically, in order for cost shifting to occur, firms must have market power (such that they are able to discriminate), and they must not have already been using this market power to its fullest extent (Frakt 2011). This latter condition implies that cost-shifting is primarily a concern for hospitals maximizing something other than pure profit. For instance, non-profits might maximize prestige as measured by revenues, or public welfare as measured by joint profit-quantity maximization. Rosenman, Li, and Friesner (2000) analyze the situation of prestige and find that such a utility function could either lead to cost-shifting or the exact opposite effect. This ambiguity is common in the theoretical literature across a variety of specifications; consequently empirical analysis is needed.

The health insurance market is a complex one, with public insurance coexisting and competing with private insurance, and agency and market power interactions between the three layers of the system: patients, providers (hospitals, for our purposes), and insurers. Crucially given our discussion of profit maximization above, 85% of hospitals are non-profit institutions (Ginsburg 2003).

Because moral hazard (Pauly 1968) decouples consumer decisions from consumer payment, insurers were at first powerless to prevent cost shifting. During the heyday of managed care, health insurers may have been able to counter hospital's market power through restrictive networks (Cutler 1998). Since managed care's ability to exclude hospitals from networks has declined since then, we might expect cost shifting to have increased again.

Frakt (2011) reviews the empirical findings on cost shifting, and concludes that, "Cost shifting can and has occurred, but usually at a relatively low rate." Yet these studies, even the study Frakt identifies as "the strongest" (Wu 2009), suffer from severe data limitations. In particular, Wu (along with Cutler 1998, Connor et al. 1998, Dafny 2009, Askery et al. 2008 and other leading studies) utilizes a proxy for net private payment per discharge calculated by assuming all non-Medicare revenues for a hospital are private revenues (e.g. ignoring Medicaid).

In addition, these studies have only a single data point for each hospital in a given year, whereas Medicare reimbursements vary over the entire service line, meaning these studies' design precludes observation of a whole host of interactions within firms. Finally, existing analyses have almost entirely relied on billings data; actual price received is a far more valuable measure (Friesner and Rosenman 2002 utilize price data for California in a limited time period, and find very different results depending on whether they use the amount billed or the price paid). These quality concerns are magnified in the setting of hospitals, because cost shifting for firms which high fixed costs (such as hospitals) is particularly subtle--data problems may pick up on other effects which are greater in magnitude; the signal may swamp the noise if a study is not

carefully conducted.

I propose utilizing the Ackoff Fellowship funds to purchase a dataset only made available this year, in order to investigate whether cross-subsidization between public and private insurers occurs, and how it may interact with adverse selection to worsen the problem of missing markets (Arrow 1963). This novel dataset has the potential to address the concerns with previous studies described above.

The dataset in question is the FAIR Health Standard Analytic File (SAF), made available for the first time this year as the result of a lawsuit settlement with the New York State Attorneys General. Specifically, private insurers representing 126 million covered lives (75% of the national market) report every single insured claim into the database semiannually, from 2002 to the present. Critically for the purposes of this study, all claims list the billed amount, and approximately half the insurers also report the actual amount paid to the health provider. In addition, the Hospital Service Area (HSA, developed to be the referral region of a single hospital) in which the care for a given claim was delivered is available for each claim.

Because we have all the information necessary to calculate a cost-to-charge ratio, we can examine competition between public and private firms. In short, we will compare the Medicare price with that of the private insurers for each hospital within each of the 3,436 HSAs nested within 306 Hospital Referral Region (HRR) markets, as a test of cross-subsidization. We will use two plausibly exogenous shocks to instrument public insurance entry: the 2003 Medicare Advantage program, which made public-private entry much more profitable differentially across regions, and the 2006 Massachusetts health reform, which expanded low-income public insurance substantially. We can additionally exploit year-by-year variation in Medicare reimbursement by service line to similar ends.

Our specification will take into account both insurer and provider market structure, the latter data coming from the American Hospital Association's annual survey (already obtained). We will also be able to control for patient volume, and thus for non-profit hospital utility functions of profit and quantity (Newhouse 1992) or of revenue (Rosenman, Li, and Friesner 2000).

Finally, in addition to the primary aim described in the preceding pages, the SAF allows us to study how the prices set by insurer-provider negotiation as well as private-public insurer interactions influence service utilization. Because we observe the same firms across multiple markets we can answer not only the question of the relationship between market structure and pricing power but second order questions such as whether an insurer with large national market power still has market power when operating some distance from its core region by utilizing spatial panel models (Anselin 1988).

Proposed budget

If funded, the entirety of the research funds will be used to purchase the FAIR Health Standard Analytic File. These data cost approximately \$20,000, but there is a substantial student discount which brings the cost to \$5,500. The Health Care Management Department has agreed to find funds to cover the remaining \$1,500 necessary to purchase the data.

Other sources of current funding

The Mack Center funded work on a project investigating insurer incentives to cover cost-effective care with a \$4,000 grant. Approximately \$2,900 of these funds have been spent, and the remainder allocated to necessities related to the completion of the study. A description of how these funds were spent and resulting output is attached.

Summary of other funded research output

My research in 2012 was funded via an innovation grant from the Mack Center. This study aims to examine the factors that lead insurers to cover or not cover interventions. Many anecdotal claims have been made about such coverage decisions, but no model has ever been presented and no empirics exist.

I developed an economic model which predicts innovation characteristics which drive insurer adoption patterns. To test the model, I obtained data on costs and effectiveness measures for 6,800 interventions. I used the Mack Center funds to train and pay medical students to categorize these interventions according to the aforementioned characteristics. Due to the large number of interventions and need for coding in triplicate to mitigate criticism when it is published, this has taken the majority of the funds. I then sampled 320 papers. For each paper, I created a summary question with suitable detail to ascertain whether an insurer covers the intervention as described in the paper. This question extraction was completed approximately two weeks ago.

The remaining step is to survey insurers as to their coverage of these interventions. Several professors with high-level contacts at large insurers have agreed to put these extracted questions to the insurers. The remainder of the funds will be used to conduct a survey of the census of U.S. health insurers, with a subset of the extracted questions.

This study will bring evidence to an little-considered aspect of insurer efficiency, potentially driving future reforms to alter insurer incentives. Because of this potential impact, and because its empirical findings will serve as a direct critique to a paper which has had an extremely high impact on policy and academic practice, regardless of the outcome of the study the results will be highly publishable.

In addition, interim results were presented in the following conference abstract and presentation:

Friedman AB. Paying for Health: Insurer incentives to achieve the goals of health reform.
University of Pennsylvania Medical Scientist Training Program Annual Conference.
August 2012.

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