Pay for Selection
Evidence of Supply-Side Moral Hazard in Capitation Programs

1. Introduction and Research Problem

In the past ten years, health care in the United State have been undergoing another wave of changes from fee-for-service payment systems to capitated systems. As of July 1st 2014, 77% of the Medicaid population are enrolled in some capitated managed care programs. By 2015, Medicaid programs in 39 states and the District of Columbia have outsourced their enrollees to comprehensive managed care organizations (MCOs) based on capitated contracts. As for Medicare, 31% or 17.6 million beneficiaries have enrolled in its capitated program, Medicare Advantage by 2016.

The main purpose of capitation programs is to fix the well recognized supply-side moral hazard problem in FFS: supplier-induced demand (Evans 1974, Clemens and Gottlieb 2014). That is, providers tend to over provide unnecessary expensive services to maximize their financial gains in FFS. To address this problem, capitation systems choose to reimburse providers a flat rate per patient per period, regardless of the amount of services provided. Moreover, capitation rates are set such that the gross profits of providing each service are equal. Therefore providers would have no financial incentive to under or over provide services in capitation.

However, recent years have witnessed increasing empirical evidence of the inefficiency in capitation programs. Particularly, the Centers for Medicare and Medicaid Services (CMS) recently released an audit report of Medicare Advantage program (MA), the largest capitated healthcare system in the U.S., in 2007, showing that MA under reimbursed 40 percent of the more than 20,000 medical conditions, while over reimbursed 35 out of the 37 health plans sampled in the audit. Most of the current literature attribute the inefficiency in capitation systems to patient selection problems caused by imperfect risk adjustment models (Brown et al. 2014). For example, Adida et al. (2016) showed that episode-based capitation would incentivize providers to select patients if the risk adjusted capitation rates do not take into account of providers’ risk preference. Therefore their argument is that the inefficiency of capitations is due to the difference in certainty equivalent gross profits of providing different services.
The purpose of this study is to analyze the key reasons for inefficiency in capitation programs. In that regard, we show that one of the key reasons for inefficiency is supply-side moral hazard. More specifically, we show that, under supply-side moral hazard, the operating expenses of treating each patient in capitations are endogenously determined by the risk adjustment formula used. Therefore, even if risk adjustment methods can provide unbiased estimates regarding the gross profits of providing each service, the net profit estimates from risk adjustment methods would still be biased due to the simultaneity problem. As such, no risk adjustment method can address the inefficiency problem in capitations if supply-side moral hazard is not eliminated.

2. Contributions and Key Findings

The first contribution of this paper is providing a theoretical framework to show that capitated payment alone can never eliminate supply-side moral hazard in healthcare delivery, and therefore is in general inefficient. Specifically, even if risk adjustments ensure that gross profits of providing each service in capitation programs are equal, the opportunity costs of providing different services can still differ, because providers would adjust their operating expenses accordingly. More precisely, we show that 1. medical services with low market demands and high unit operating expenses, such as surgeries, have high opportunity costs in capitation systems, and therefore tend to be under-provided; 2. medical services with high market demands and low unit operating expenses, such as primary care services, have low opportunity costs in capitation systems, and therefore tend to be over-provided. In other words, providers still have financial incentives to distort medical demands in capitation programs. This is a standard supply-side moral hazard problem, similar to that in FFS. The only difference is that providers in FFS would choose to induce more demands in the first kind of services and less demands in the second kind of services. Therefore, following the standard analysis of moral hazard problems, we show that any capitation programs which fail to contract on the provider actions are inefficient.

As a second contribution, we empirically show the existence of supply-side moral hazard problems in MA by a difference-in-difference (DID) design. To this end, we first empirically documented a
negative association between capitation rates and MA health plan risk scores. That is, we find that the more CMS (payer) paid to health plans (providers) in MA markets, the healthier these health plans’ enrollees were. This negative association can be explained by two competing factors. On one hand, MA health plans could use these additional payments to provide better services, and thus lower the risk scores of its enrollees (Quality effect). On the other hand, these additional payments gave MA health plans more tools to select healthier patients (Selection effect). As an example, Cooper and Trivedi (2012) found that some MA health plans used these payments to offer coverage for gym memberships, which was a feature mostly appealing to the healthier subgroup of Medicare beneficiaries. To identify the true cause of this negative association between CMS payments and health plan risk scores, we exploit a policy induced exogenous shock from the MA Quality Bonus Payment (QBP) Demonstration program. QBP introduced a pay-for-performance contract to some MA health plans starting from 2012, which tied the capitation rates of these health plans to their quality measures. By comparing the risk scores between health plans “treated” and “untreated” by this program, we are able to show that without pay-for-performance contracts such as QBP, higher payments in capitation systems can only lead to more selections. We use the term “Pay-for-Selection” to refer to this supply-side moral hazard problem in capitation programs.

References


