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The value of coverage in the medicare advantage insurance market☆

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ABSTRACT

This paper examines the impact of coverage on demand for health insurance in the Medicare Advantage (MA) insurance market. Estimating the effects of coverage on demand poses a challenge for researchers who must consider both the hundreds of benefits that affect out-of-pocket costs (OOPC) to consumers, but also the endogeneity of coverage. These problems are addressed in a discrete choice demand model by employing a unique measure of OOPC that considers a consumer's expected payments for a fixed bundle of health services and applying instrumental variable techniques to address potential endogeneity bias. The results of the demand model show that OOPC have a significant effect on consumer surplus and that not instrumenting for OOPC results in a significant underestimate of the value of coverage.

1. Introduction

Both the premium and the level of coverage are fundamental components of all health insurance plans. Consumers pay a fixed premium for a plan and, in return, insurers cover a portion of the medical expenses. Coverage is likely to have a significant effect on consumer surplus since many consumers purchase health insurance to protect against unexpected health events. In addition, from a theoretical perspective, it is widely understood that insurers compete by setting both the premium and insurance benefits.[1] However, few empirical studies focus on the effect of coverage on health insurance demand. This paper contributes to the literature by estimating the effects of both the premium and the level of coverage on the demand for health insurance.

Understanding the effect of coverage is important for several reasons. First, achieving the goal of many policymakers to provide insurance for the 46 million uninsured in the U.S. is likely to be costly, so it is important to assess the value of insurance benefits provided to consumers. Second, coverage may affect the overall cost of medical care for insurers and consumers by impacting the amount of health services consumed and it may also affect health outcomes. In particular, prior research has shown that when coverage is greater individuals consume more health services and that additional health inputs can lead to improved health outcomes.[2] Third, insurers may respond to competition by adjusting benefits rather than changing premiums. Therefore, measuring the impact of coverage on demand is an essential step in determining the full effect of competition on insurer profits and consumer surplus.

This paper focuses on the demand for Medicare Advantage (MA) insurance products. MA insurance is a private alternative to parts A and B of traditional Medicare that primarily covers individuals over the age of 65 and enrolls approximately 20% of the Medicare eligible population. In contrast to traditional Medicare, the MA program allows private insurers to compete on benefits and price. The level of coverage appears to be important to Medicare beneficiaries, with the Median beneficiary over 65 spending

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[1] The classic theoretical analysis of insurance competition by Rothschild and Stiglitz (1976) assumes that insurers choose both the premium and level of coverage. This assumption is also made in recent papers that explore the effects of competition in health insurance markets in alternative settings (e.g. Vaithianathan, 2006; Olivella and Vera-Hernandez, 2007).

[2] There are many studies that show that show the amount of health services consumed is associated with the level of coverage. Key evidence is found from the RAND Health Insurance Experiment (see Newhouse, 1993). Numerous academic studies have shown links between health care treatments and health outcomes. Although there is evidence that shows that having no insurance is associated with poorer health (see Weissman and Epstein, 1994), there is less direct evidence linking the level of insurance coverage with improved health outcomes.

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nearly 13% of their income on health care in 2003 compared to just 2.2% for the under 65 population. Around 10% of the Medicare eligible population over 65 spends more than 35% of their income on health care.[3] Out-of-pocket cost (OOPC), that includes the cost of deductibles, copayments, and coinsurance for hospital, physician, and prescription drugs, make up 55% of health care expenditures paid by Medicare beneficiaries.[4] While the level of coverage appears to be important for Medicare beneficiaries in general, it seems especially critical for enrollees in MA plans. Atherly and Thorpe (2005) report that the primary reasons Medicare beneficiaries select MA plans include lower costs and greater benefits. In addition, about 20% of MA enrollees are in zero premium plans, so coverage is a key dimension of competition for many insurers.

Prior studies examining the effect of coverage face two empirical problems. First, they typically include only a few plan benefits such as copayments or coinsurance for specific services that may affect consumer demand.[5] However, there are potentially hundreds of plan benefits that are important to consumers, but may be difficult to incorporate in a demand framework because of the number of benefits and nonlinearities in benefit packages (e.g. copays, coinsurance, deductibles, OOPC maximums, limits on coverage for specific services among others). Excluding benefit information may understate the impact that an insurer's choice of coverage has on consumer utility and may also cause omitted variable bias. A second problem is that coverage is a major choice variable of insurers who can change many benefits as easily as the premium on the plan, so the level of coverage is likely to be endogenous. The model presented in this paper addresses these two empirical issues.

The effect of coverage on demand is measured by estimating a differentiated product demand model for MA products. The demand model is a nested logit model similar to Berry (1994) where MA plans are included in a nest and the outside option is traditional Medicare. Consumer utility depends on the premium, the level of coverage, and other observed and unobserved plan characteristics. The whole range of benefits are captured using a unique estimate of expected OOPC which is the total amount a typical Medicare eligible individual might expect to pay in copays, coinsurance, and deductibles, holding the amount of medical services fixed across plans. The expected OOPC is a practical measure of coverage that is made publicly available by the Center for Medicare and Medicaid Services (CMS) so that Medicare beneficiaries can compare the benefits of various plans. This is the first paper to use this comprehensive measure of coverage in a demand analysis. In addition, I treat both the plan premiums and OOPC as endogenous variables chosen by the insurer and apply instrumental variable techniques as well as fixed effects to account for any potential bias.

This paper makes two primary contributions to the health insurance demand literature. First, it presents evidence that not instrumenting for OOPC may produce bias demand estimates that would underestimate the value of insurance coverage by more than 600%. This result has implications for studies that examine the effect of health insurance quality on enrollment decisions. If one views coverage as a measure of quality, the findings presented here suggest that not instrumenting for quality may result in an underestimate of the effect of quality on demand, which may partially explain why prior studies have found only small increases in the market share of highly rated plans.[6] The second contribution is that OOPC have a very large impact on consumer surplus in MA markets. The most conservative estimates of the value of coverage show that reducing OOPC by 50% would increase consumer surplus by more than 50%. This is greater than the impact of reducing all MA insurance premiums to zero.

Measuring the effect of OOPC on demand helps explain why Medicare eligible individuals purchase MA plans, but policymakers may also be interested in the overall surplus generated by the MA program relative to the cost of funding the program. This comparison has become increasingly relevant as there has been a substantial increase in payments to MA insurers relative to the cost of traditional Medicare. While the demand estimates imply that consumer surplus generated by the MA program is over $21.0 billion in 2007, in that same year MA insurers received about 12% more for covering similar beneficiaries in traditional Medicare resulting in the government paying roughly $9.2 billion more to MA insurers, resulting in a net surplus of $11.2 billion. Although all types of plans produce net surplus gains, there is a wide disparity in the payments to different plans and the net surplus generated per person across plans. I find that consumer surplus per enrollee in Private Fee-For-Service (PFFS) plans is greater than the surplus generated by Health Maintenance Organization (HMO) plans, but the additional cost to the government of funding the PFFS plans causes the net surplus per additional enrollee to be less than half the amount of the less costly HMO alternatives. The large disparity in net surplus generated per person suggests that policymakers should explore the opportunity cost of additional funding to the more highly paid plans.

The remainder of this paper is organized in the following sections: Section 2 reviews the recent changes in the Medicare Advantage market; Section 3 presents the data and variables; Section 4 describes the demand model; Section 5 shows the results; Section 6 presents the policy analysis; and the last section concludes.

2. An overview of changes in the medicare advantage market

Since the early 1970s Medicare beneficiaries have had the option of enrolling in private managed care insurance. The program, now called Medicare Advantage, provides Medicare eligible individuals the option to forgo the traditional fee-for-service Medicare plan and enroll in privately administered managed care alternatives. These private plans cover Medicare (Parts A and B) for a payment made from CMS. The MA program provides consumers with a greater variety of choices and allows private insurers to compete in offering insurance benefits to Medicare beneficiaries that are often greater than what is covered under traditional Medicare.

Medicare primarily covers individuals over the age of 65, but it also covers disabled individuals and those with end-stage renal disease. In counties where MA plans are offered, Medicare beneficiaries may either choose to enroll in an MA plan or remain in traditional Medicare. A vast majority of Medicare beneficiaries remain in traditional Medicare. All Medicare beneficiaries are automatically enrolled in Part A of the program which covers hospital

[3] Desmond et al. (2007) calculate these figures using information from the 2003 Current Population Survey.

[4] AARP Data Digest (2004).

[5] For instance, Town and Liu (2003) examine the impact of prescription drug insurance on the demand for MA products using an indicator of whether drug insurance is offered. Atherly et al. (2003) examine how a variety of plan characteristics affect demand for MA products. Hall (2007) re-examines the value of the prescription drug benefits and a variety of other benefits applying a similar methodology to Town and Liu. Lustig (2008) explores issues of adverse selection in MA markets including particular drug and medical service benefits. There is a long list of studies that examine the demand for health insurance in non-medicare sectors that also introduce benefit information in this manner or exclude benefit information entirely. Some recent examples include Town (2001) and Abraham et al. (2007).

[6] See Wedig and Tai-Seale (2002), Beaulieu (2002), Chernew et al. (2004), Jin and Sorensen (2006), and Dafny and Dranove (2008). Unlike several of these papers, my paper does not attempt to distinguish between market based learning about quality and information based learning from the public reporting of the OOPC measure.