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The Simple Economics Of Voluntary Versus Mandated Drug Benefits For Medicare

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ABSTRACT

There is intense interest in proposals to expand seniors' access to drug insurance. At the same time, there is debate on how best to accomplish this expansion. Advocates of optional drug coverage point to the benefits of free customer choice and the virtues of encouraging innovation in the private sector. Advocates of universally mandated benefits worry about adverse selection leading to collapse of voluntary coverage and about insurers' desire to avoid bad risks distorting the products available. In addition, they argue that voluntary purchase runs counter to their basic goal of health insurance – to offer all senior citizens full and equal access to needed medications.

This paper analyzes voluntary and mandated drug insurance from the perspective of economic theory. It offers a simple graphical analysis that is designed to bring out several features of the market for drug insurance in the presence of adverse selection and the constraint that insurers charge a single premium to all policy-holders. While the underlying theory is well-known, this particular form of presentation is new, to our knowledge, and highlights certain key issues in the design of a Medicare benefit for outpatient prescription drugs. First and most important, economic theory does not offer a clear prediction regarding whether voluntary or mandated benefits produce a superior outcome. That is an empirical question. However, the analysis does have certain implications for how each kind of insurance option should be implemented. In the case of voluntary benefits, policies that raise total enrollment, promote risk neutral enrollment, and lower the price of insurance mitigate the effects of adverse selection. In the case of mandated benefits, benefits should be designed to be as appealing as possible to the people with the least demand for drug insurance.

1.0 BACKGROUND AND INTRODUCTION

There is intense political interest in proposals to expand seniors' access to drug insurance. In June, 2000, the House of Representatives passed a bill (H.R. 4680) that would enable Medicare beneficiaries to choose among at least two subsidized drug plans under a new Part D of Medicare. As presidential candidates, both Vice President Gore and Governor Bush put forward drug benefit plans for seniors, and President Bush introduced one component of his plan, state block grants, to Congress during his first month in office. Congressional debate on drug benefits (and Medicare reform more broadly) continues, although the lack of consensus may make actual legislation impossible. In the last year, various states have also expanded pharmaceutical assistance programs for seniors and/or sought mechanisms to purchase medicines at a discount and pass the savings on to seniors.

This topic also received significant attention from major newspapers and television news programs. The public has seen images of senior citizens forgoing groceries to buy medicines, choosing to treat one condition or one spouse at the expense of another, missing doses, and cutting pills in half. A bus trip in which Maine seniors traveled to Canada to buy drugs at lower prices received national coverage.

There is certainly a group of senior citizens for whom the lack of drug insurance is a critical problem. Seniors' drug expenditures are high; in 1999, one fifth of seniors had drug expenditures in excess of \$1500, and this fraction will only rise (Gluck, 1999). Seniors' incomes are relatively low; the median income for families with householders over 65 was approximately \$22,000 in 1999, and 10 percent of seniors had family incomes below the poverty level (approximately \$8,000 for a single individual, \$10,000 for a couple) (Census Bureau, 1999). For the approximately one-third of

seniors who lack drug coverage at any point in time, drug costs may indeed impose a significant financial burden.

Moreover, seniors without drug insurance may pay a price in terms of their health. In 1996, Medicare beneficiaries without drug coverage filled an average of 16 prescriptions per year while their insured counterparts filled 21 (Poisal and Chulis, 2000). Unfilled prescriptions may translate into avoidable declines in health and also avoidable doctor visits and hospitalizations, which are covered by Medicare and paid for from public funds.

While the problem is critical for some, it is far from universal. For the two year period 1995-1996, 46.5 percent of seniors had steady drug coverage. Of these, 13.0 percent including many of the poorest seniors were covered by Medicaid and another 13.7 percent received their coverage through Medicare HMOs (Stuart et al., 2001). Most experts expect the percentage of seniors with drug coverage to decline, particularly the percentage receiving drug coverage from HMOs.

Public provision of drug insurance is difficult for the same reason many argue it is needed: drugs are expensive and drug costs are rising rapidly. Furthermore, it is difficult to design a public system that would assist the minority that lack drug insurance but would not displace private money, i.e. would not cause employers and Medicare HMOs to stop offering drug coverage or individuals to stop purchasing it with their own funds.

A wide variety of proposals exist both to expand drug insurance and also to make drugs more affordable via strategies such as bulk purchase, re-importing from abroad, and administered pricing. The current consensus is that in the long term this problem should be addressed at the national level although several recent proposals, including the President's, call for expanding state

programs as a temporary measure. The discussion below contrasts two of the major sets of federal proposals to extend insurance: voluntary purchase and mandatory benefits.

In voluntary purchase proposals, beneficiaries choose whether to purchase insurance, typically from a range of plans designed and offered by the private sector with some level of government regulation. Public subsidies might be offered. Advocates of this approach cite the benefits of free customer choice and the virtues of encouraging innovation in the private sector. In mandatory benefits proposals, virtually universal coverage is achieved, typically by expanding Medicare to include a highly subsidized drug benefit that parallels the current outpatient and inpatient coverage. Advocates argue that universal coverage is needed to avoid adverse selection and distortion of benefits as insurers attempt to avoid high cost members. They also argue that voluntary purchase runs counter to their basic goal - to offer all senior citizens equal full and equal access to prescription medications.

This paper analyzes these two groups of proposals from the perspective of economic theory. It offers a simple graphical analysis that is designed to bring out several features of the drug insurance market in the presence of adverse selection, defined as the tendency of individuals with the greatest demand for drug insurance also to be the individuals with the greatest expected utilization of drugs. Insurers are also assumed to charge a single premium to all policy-holders, a constraint that mirrors the pricing of group health insurance and one that is found in most proposals for subsidized public insurance coverage of prescription drugs. While the underlying theory is well-known, this particular form of presentation is new, to our knowledge, and highlights certain key issues in the design of a Medicare benefit for outpatient prescription drugs:

First and most important, while the constructs of economics often are used to support consumer choice and to oppose inflexible mandates, insurance with adverse selection and constrained prices represents a special case: *it is not clear a priori whether voluntary or mandated benefits produce a superior outcome*. That is an empirical question, depending on the shapes and locations of the supply and demand curves for coverage (of which, we say more below).

The reason for the lack of a clear prescription is that in the presence of adverse selection and constrained prices, the market for voluntary insurance will feature higher prices and lower rates of insurance than would be optimal. This distortion may or may not be greater than the distortion possibly associated with a mandate.

This argument has certain implications for how each kind of insurance option should be implemented. If benefits are chosen voluntarily, policies that raise total enrollment, promote risk neutral enrollment, and lower the price of insurance mitigate the effects of adverse selection. If coverage is mandated, benefits should be designed to be as appealing as possible to the people with the least demand for drug insurance (e.g., catastrophic policies may be desirable).

The remainder of this paper develops this argument in detail. We will note instances for which economic models suggest a clear policy preference. However, the paper is not a comprehensive analysis of policy options in the design of drug insurance or of how any particular option should be implemented. Instead, our purpose is to present and explore a fundamental challenge to the notion that voluntary drug benefits necessarily represent the superior approach. Mandatory benefits might be the superior approach under certain conditions.

2.0 THE SIMPLE ECONOMICS OF VOLUNTARY AND MANDATED INSURANCE

One of the most basic principles of economics is that, given certain assumptions, competitive markets maximize the collective welfare of consumers and producers and lead to the most efficient allocation of resources. As applied to drug insurance, that simple notion might be assumed to imply that voluntary benefits yield superior results.

But the assumption that voluntary benefits are *necessarily* superior is wrong, given certain likely or possible features of the market for Medicare drug insurance. In particular, suppose that a significant level of adverse selection exists, that is the individuals with the highest expected drug utilization are also the individuals most likely to purchase insurance at a given price. Also suppose that premiums are equal to the average cost of covered drugs for the group (as is required of Medigap policies for newly eligible beneficiaries). Under these conditions, the resulting market outcome features lower rates of insurance and higher insurance prices than would maximize welfare. The reason: in the presence of adverse selection, the producers' supply curve is downward sloping. To break even, insurers must price policies according to the average cost among the insured. This causes low-risk individuals to opt out, further driving up prices and exacerbating the problem.¹

These results can be understood better if we go back to basics and review the rudimentary economics of more conventional products, then introduce the complexities of drug insurance.

2.1 The Market for Widgets

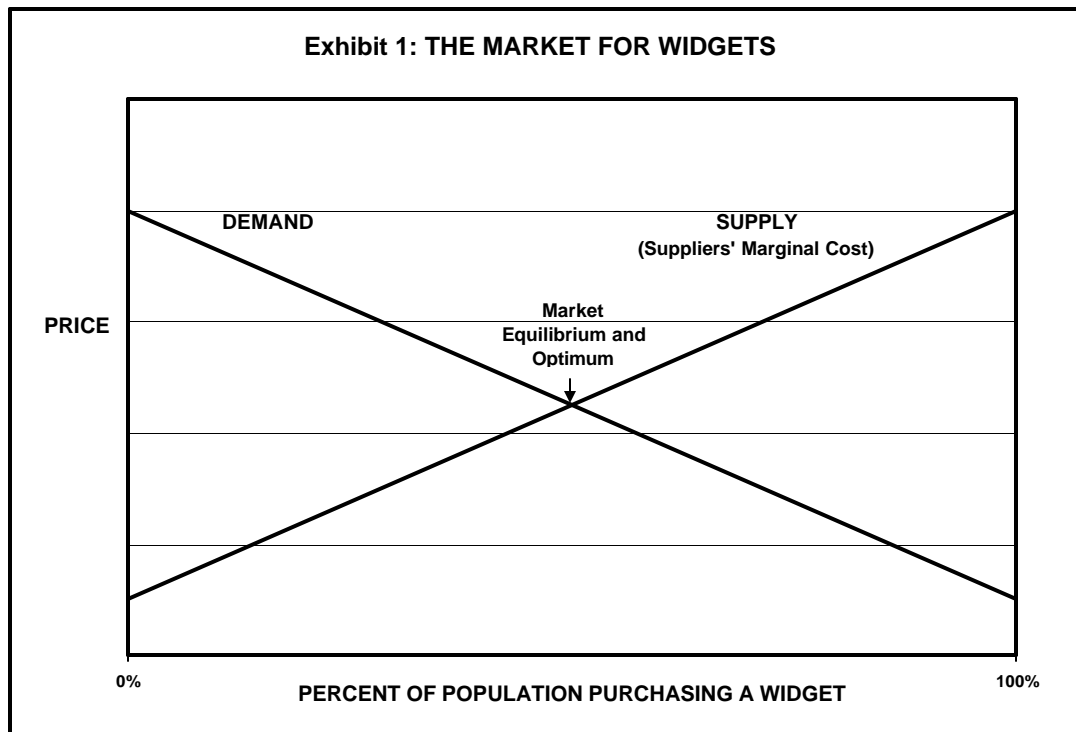
Consider the text book supply and demand diagram for widgets shown in Exhibit 1. For simplicity, assume that each person buys only one widget just as each person normally buys only one policy for drug insurance, one college education, or one copy of today's *New York Times*. To create the demand curve, potential buyers of widgets are arrayed according to their willingness to pay. A

¹ See Feldman and Dowd (2000) for a comprehensive discussion of economists' views about risk segmentation in health insurance markets.

given individual's demand for a widget will be influenced by the price of widgets, his income, and other factors. Demand slopes down, i.e. the lower the price of the widget, the more buyers.

The supply curve captures the marginal cost of supplying these consumers with widgets. These costs will be influenced by the costs of the resources needed for production. The supply curve is upward sloping to the extent that the resources needed to produce widgets become increasingly scarce as more of them are produced.

Market equilibrium exists where the supply and demand curves intersect. This equilibrium is optimal in the sense that every customer who values a widget above and beyond the cost of producing it receives one.

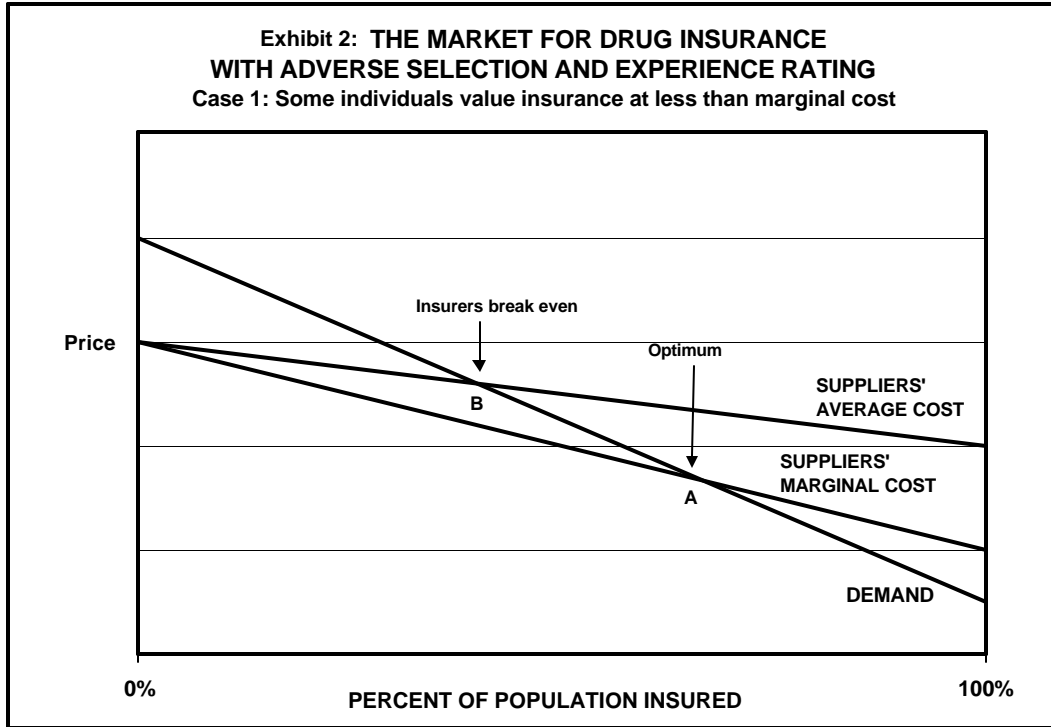


2.2 The Market for Drug Insurance in the Presence of Adverse Selection And Experience Rating

Consider now the market for drug insurance portrayed in Exhibit 2. Once again, buyers are arrayed according to their willingness to pay for insurance. In addition to price and income, buyers' willingness to pay will be affected by their expected utilization of drugs, that is, an individual who knows that he spends \$500 per month on medications for chronic high blood pressure and diabetes will be more likely to buy insurance at a given premium than another individual who currently has no routine drug expenses. Risk aversion also affects demand; some individuals dislike uncertainty and gladly would pay more than \$100 to avoid a one-in-ten risk of a \$1,000 liability. As was the case in the market for widgets, demand slopes downward in price/quantity space.

The fact that the people most likely to buy insurance are also the people with the highest expected utilization of drugs is called adverse selection, and it has an interesting impact on the marginal cost of supplying insurance.² In contrast to the textbook market for widgets, the marginal cost of supplying any fixed level of drug insurance benefits to more people *declines* as the number of buyers increases. The cost of insuring an individual, unlike the cost of providing a widget, varies depending on the identity of the individual purchaser, *and* those costs are systematically related to individuals' willingness to pay (i.e., the same individuals who are willing to pay more for drug insurance and thus buy it first tend to be those who are expensive to insure).

² To the best of the authors' knowledge, this paper's graphical presentation of the market for drug insurance in the presence of adverse selection is new. However, many of the ideas underlying it are an established part of health economics. For example, see Cutler and Zeckhauser (1998).

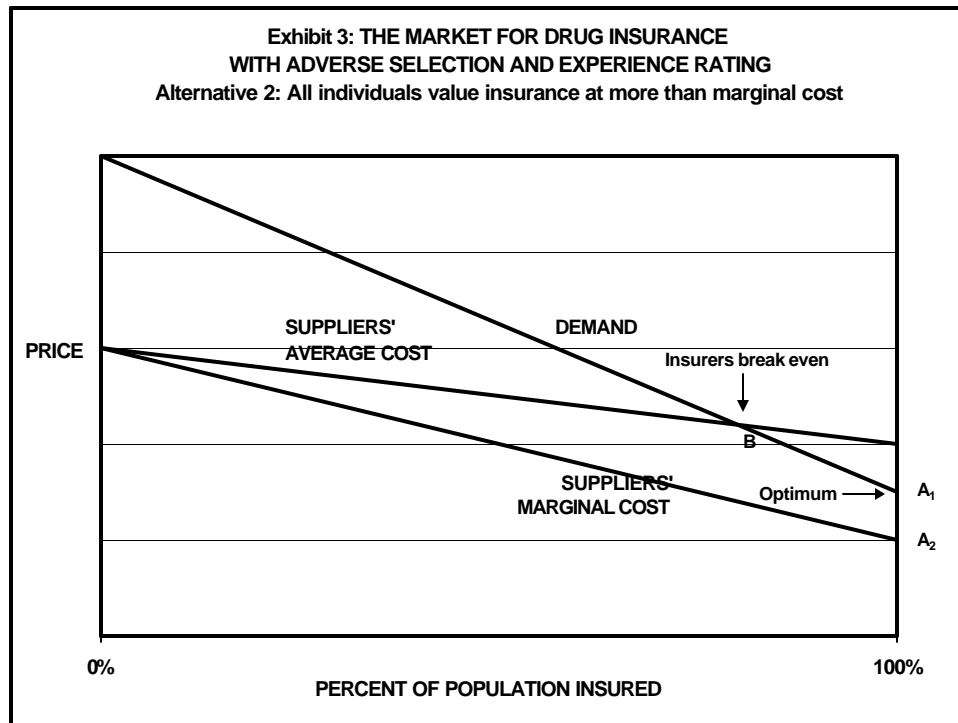


In the market depicted in Exhibit 2, it would be optimal for all individuals to the left of the point at which marginal cost crosses demand (point A) to have drug insurance; these are individuals whose valuation of drug insurance exceeds the marginal cost of provision. However, this point is not an equilibrium. Assuming there is group experience rating (i.e., drug insurance must be sold to all buyers at one price), insurers would lose money at this price because it reflects the cost of providing insurance to the buyer with the lowest expected utilization among those buying insurance. To break even, insurers must charge at least the average cost for the insured population. This average cost curve also will be downward sloping but will be above the marginal cost curve. In a regulated market without subsidies, one could achieve an equilibrium where the demand curve crosses the average cost curve. At this point (point B), insurers would break even.

Thus, in the market shown in Exhibit 2, the point at which insurers break even is not optimal. However, universal insurance is not optimal either. Note in Exhibit 2 that a significant fraction of

potential purchasers are located to the right of the optimum – that is, their valuation of the drug benefit is less than the marginal cost of providing it. The optimal level of coverage could be achieved with a price subsidy for consumers (thus raising the demand curve) or a subsidy to suppliers (thus lowering the average cost curve).

Exhibit 3 shows an alternate version of the same market. In this version, the marginal cost curve never crosses the demand curve. All buyers are sufficiently risk averse and insurance is sufficiently appealing (well-designed, efficiently administered) that every member of the population would buy drug insurance if it were priced at marginal cost. If this is the case, then universal benefits are optimal, and a mandate is superior to voluntary choice. Again, the government could achieve the optimal level of coverage with subsidies to consumers or suppliers of drug insurance.



Regardless of whether Exhibit 2 or 3 more accurately describes the market for drug insurance, it is still the case that the optimal level of insurance almost certainly cannot be achieved in an

unsubsidized market at a single price with insurers breaking even. In Exhibit 3, for example, the breakeven point (labeled B in the chart) again is to the left of the optimum (universal insurance, labeled A_1 and A_2 on the demand and marginal cost curves, respectively).

3.0 IMPLICATIONS

While this presentation has ignored many of the complexities of actual drug markets, it has several practical implications.

3.1 The Desirability of a Mandated Benefit is an Empirical Question

Critics of voluntary benefits often focus on market collapse. However, even if the market does not collapse, in an unsubsidized market with adverse selection and group experience rating, fewer individuals will purchase insurance and premiums will be higher than would be optimal. The source of this inefficiency is not voluntary purchase, *per se*, but adverse selection and group experience rating. Exhibit 2 shows a case where less than 100 percent coverage is optimal; Exhibit 3 is a case where 100 percent coverage (i.e., an insurance mandate) is optimal.

As a theoretical matter, it is not clear whether Exhibit 2 or Exhibit 3 is more accurate. If a significant fraction of the population is not especially risk averse regarding drug expenses and if drug insurance is not an especially attractive product (due perhaps to high administrative costs, few discounts, and either too much or too little utilization management), then Exhibit 2 may be an accurate representation of the market. The mandated outcome is not optimal in that there are some individuals whose valuation of insurance is less than the cost of providing it. On the other hand, if the vast majority of the population is risk averse and drug insurance is an appealing product, then Exhibit 3 is the better representation of the problem, and a mandated benefit will be optimal.

The desirability of a mandated benefit becomes an empirical question, the answer to which hinges on the shapes and locations of the supply and demand curves. On the demand side, we would like to know the relationship between the demand for drug insurance and, respectively, price, income, expected utilization, and risk aversion. On the supply side, we would like to know the degree of adverse selection, which drives the steepness of the marginal and average cost curves and the distance between them.

In fact, if insurance purchase is driven primarily by income and risk aversion, not expected utilization, then the marginal and average costs are relatively close and the market equilibrium with a voluntary benefit is likely to be close to the optimal point. If potential buyers of drug insurance can make accurate predictions about their drug costs and if these predictions drive the purchase decision, then adverse selection is a major factor and voluntary benefits will lead to far-from-optimal outcomes.

Note that the degree of adverse selection depends in part on the exact nature of the drug benefit. For example, if individuals are free to buy drug insurance at any time, they will be able to make more accurate comparisons of expected drug cost and price. That would exacerbate adverse selection, in comparison to a policy that allows individuals to purchase drug insurance only once (say, when they turn 65 and enroll in Medicare).³

Unfortunately, knowledge of these key magnitudes is limited. The available research data is far from perfect – policies of the type under discussion have not been tried for drug insurance – and the analytic issues associated with inferring the impact of the proposed policies from other data are extremely complex.

³ Note that ex-President Clinton’s prescription drug proposal contained just such a feature.

In addition, even if it were established that a mandate was necessary to achieve optimality, it is still not obvious how to finance the mandated benefit. It could not be financed by a purely private market, even a regulated private market, without some sort of subsidization. The benefit could be publicly financed *and* publicly managed. This, of course, would introduce a second set of issues, including who would design and manage the benefit, the process by which the insurer and the pharmaceutical companies would establish drug prices, how costs would be divided between beneficiaries and the general public, and how public dollars would be raised. These implementation and financing issues could introduce their own inefficiencies, possibly offsetting the benefits of an otherwise efficient mandatory design.

3.2 Policies to Reduce Distortions in Voluntary Benefits

If empirical analyses show that 100 percent coverage is not optimal, the inefficiency of adverse selection combined with group experience rating can be mitigated by policies that raise the total level of enrollment, promote risk-neutral enrollment, and keep premiums down. Subsidies to low-income buyers or to all buyers, possibly via favorable tax treatment, can raise total enrollment and break the link between the level of enrollment and selection. Subsidies may also be desirable for two other reasons. First, they extend access to individuals who might otherwise find drug insurance unaffordable, which some may favor on fairness grounds. Second, by raising levels of insurance, they may keep individuals from becoming dependent on Medicaid or other public programs as a result of catastrophic drug costs.

There are other policies that could keep premiums down and mitigate the effects of adverse selection on the drug insurance market, such as a publicly-supported high-risk pool or assigned-risk pool, and reinsurance that covers a substantial share of any individual's annual drug expenditure in

excess of a very high threshold. Such policies also soften insurers' incentives to engage in so-called cherry-picking, the practice of structuring policies to attract good risks and repel bad risks.

Finally, to promote risk-neutral enrollment, insurers might be offered some latitude for underwriting. For example, all beneficiaries might be given a six-month enrollment window with guaranteed issue, with insurers able to impose reasonable restrictions after that. (This is the existing policy for Medicare supplemental insurance.) To enhance fairness and to encourage early enrollment, insured individuals might be guaranteed the ability to renew their policies at community rates following initial enrollment.

In principle, another way both to achieve an optimal rate of insurance and to allow firms to break even is risk-adjusted premiums, i.e., premiums that are adjusted to reflect individual risks in the covered population. This option contrasts with group experience rating. Risk-adjusted premiums have more appeal when the premiums are paid by the government or an employer, less when they are paid by individuals – as would be the case with individually experience-rated premiums. Many consider it unfair if medically needy individuals pay more for insurance than their healthy counterparts.⁴ If experience rating is objectionable on fairness grounds, income transfers can be arranged between low-risk and high-risk enrollees to offset the higher premiums of high-risk individuals.

3.3 Policies to Reduce Distortions in Mandatory Benefits

As explained above, 100 percent coverage is optimal if all individuals value the benefit at more than the marginal cost of providing it. In some of those cases, a mandate may be necessary to achieve 100 percent coverage. When a mandate is necessary, it should be designed to have maximal appeal,

⁴ Note that differential prices actually may not seem so unfair if individuals exercise some control over either their health or their medical expenditures – for example, through their eating, drinking, smoking, and exercise habits, or through their choice of physician and practice style.

relative to costs, to the people with the lowest demand for drug coverage. This argues for a catastrophic (high-deductible, uncapped) benefit, as this minimizes administrative costs by avoiding small claims and protects fully against large risks. Such a benefit could be inexpensive relative to other policies under discussion, but might not be politically popular if the majority of individuals never expect to exceed the deductible and receive covered services. In fact, most proposals under active consideration assume that benefits will have low-deductibles, often capped, that promise covered services to a much larger fraction of the beneficiary population.

4.0 CONCLUSION

This paper has presented an economic analysis of the market for drug insurance. Contrary to what some might assume, it is not clear a priori that a voluntary benefit is superior to a mandatory one. That is, letting individuals decide whether or not to purchase drug insurance in an unsubsidized market is not necessarily superior to mandating a universal drug benefit. In fact, if the individuals with the highest expected drug utilization are also the individuals most eager to buy drug insurance at any given price (i.e., adverse selection) and if all buyers are charged the same price (i.e., group experience rating), then outcomes in the market for voluntary coverage will not be optimal while outcomes given mandatory coverage might be. However, achieving mandatory coverage requires public funding, government involvement, and the resolution of many issues more complex than those addressed here.

The analysis presented here also points to specific policies likely to improve welfare in either case. If benefits are voluntary, helpful policies include efforts to raise total enrollment, promote risk-neutral enrollment, and lower the price of insurance. If a universal benefit is mandated, it should be designed to appeal to the segments of the population with the lowest demand for insurance.

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