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Editorial

Introduction to the special section health plan payment in regulated competition[☆]

Public policy towards health insurance is guided by principles of regulated (or managed) competition in Australia, Belgium, Germany, Ireland, Israel, the Netherlands, Switzerland, and some countries in Asia and Latin America, as well as in key health insurance sectors in the United States, including the Medicare Advantage program for Medicare beneficiaries, state-level Marketplaces created as part of the Affordable Care Act (2010) and state Medicaid managed care programs. A shared challenge is to pay health plans in a way that induces market efficiency and – at the same time – protects public objectives like individual affordability of coverage.

While there is considerable heterogeneity in some aspects of the policies in regulated health insurance markets, there are also many commonalities. In all of these markets, individuals choose among private plans that compete on price (i.e. the premium) and/or quality (e.g. in terms of provider network). Common regulatory aspects include standardized coverage, premium-rate restrictions and open enrollment. On the one hand these regulatory instruments help make basic coverage affordable and accessible for all, but on the other hand they can exacerbate adverse selection, resulting in two types of inefficiencies. On the demand side, adverse selection leads to plan price distortions resulting in inefficient sorting of consumers across health plans. On the supply side, adverse selection creates incentives for plans to inefficiently distort benefits to attract profitable enrollees. There is an extensive theoretical and empirical literature in health economics on both issues, stemming originally from papers in the general literature in economics on market functioning with incomplete information.¹ The relative importance of these efficiency problems varies across countries and sectors. For example, in U.S. Medicare issues related to sorting of beneficiaries between traditional Medicare and Medicare Advantage plans has been the primary concern of research and policy, whereas in other settings (e.g., Israel, the Netherlands, and Medicaid managed care in the U.S.), inefficient plan design is more of the focus. Most markets of course involve some of both issues. In the U.S. Marketplaces for example, primary concerns are getting

the insured into the individual health insurance market (a sorting problem), and ensuring that plans offer adequate and balanced coverage (a plan design problem).

In the first paper of this special issue, “Measuring Efficiency of Health Plan Payment Systems in Managed Competition Health Insurance Markets,” Layton, Ellis, McGuire and Van Kleef provide a comprehensive review of the theoretical and empirical literature related to the two adverse selection problems. This review, along with the ten other papers, provide a variety of new insights regarding the two problems and their implications for evaluation and design of health plan payment. Below, we highlight some of the main findings.

Sorting of consumers into the health insurance market and across health plans

Six papers in this volume primarily deal with the sorting problem. Newhouse’s essay, “Risk Adjustment with an Outside Option” is about sorting into the health insurance market in the presence of an “outside option” which takes different forms in two prominent U.S. individual health insurance markets. For Medicare Advantage the “outside option” is traditional Medicare while for the Marketplaces the outside option is being uninsured. Newhouse points out that differences in risk adjustment methodology between Medicare Advantage and the Marketplaces have important implications for the ability of the payment system to correct for selection into the market. Newhouse shows that in Medicare, risk adjustment addresses sorting of risks between traditional Medicare and Medicare Advantage, whereas in the Marketplaces, the risk adjustment system addresses sorting within each Marketplace but not the more important sorting between insured/uninsured. Additional policy measures are needed to address this last form of sorting.

Layton’s “Imperfect Risk Adjustment, Risk Preferences, and Sorting in Competitive Health Insurance Markets,” no surprise, is about sorting. In sorting models with fixed plan characteristics, risk adjustment functions as a subsidy for the health plans “selected against.” Current risk adjustment models, however, do not fully correct for variation in medical spending, and as Layton points out, the effect of the subsidy on the incentives of the marginal enrollee is unclear. Even perverse results are possible, meaning that an improvement of the overall ability of a risk adjustment system to capture variation in medical spending may not improve incentives at the margin. When it comes to the improvement of

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¹ The roots of the sorting problem go back to Akerlof (1970) and reappear in the health economics literature with Cutler and Reber (1998) and Einav and Finkelstein (2011). Roots of the plan design problem go back to Rothschild and Stiglitz (1976) and reappear in Glazer and McGuire (2000). There are many other theoretical and empirical papers, some reviewed in Layton et al. (this issue).

risk adjustment models, an important take-away from Layton's analysis is that the search for new risk adjusters should focus on variables that explain "correlations between residual spending and consumer preferences" rather than "variation in residual spending" alone.

Glazer and McGuire, in "Paying Medicare Advantage Plans: To Level or Tilt the Playing Field" use the basic sorting model from [Einav and Finkelstein \(2011\)](#) to characterize Medicare's optimal policy with respect to subsidizing membership in Medicare Advantage plans, arguably Medicare's most important policy choice when it comes to "managing competition" in the Medicare program. The term "Level Playing Field" is what many policymakers claim is the desirable policy, i.e., to subsidize Medicare Advantage to the same degree as traditional Medicare and let the market play out determining who goes where. This easy answer is not the right one, as follows from basic considerations of the economics of individual health insurance markets, including selection, marginal versus average effects of Medicare Advantage plans on costs and market power of Medicare Advantage plans.

Marion, Yelowitz and Talbert, in "Medicaid Program Choice, Inertia and Adverse Selection", analyze sorting patterns in Kentucky's Medicaid managed care program. Like most other states, Kentucky relies on an auto-enrollment process assigning beneficiaries who do not actively choose a plan to a managed care organization based on a certain algorithm. This algorithm can be seen as one of the policy tools to balance objectives related to market stability, program costs and quality. The authors find that the Kentucky algorithm most heavily weighted cost considerations and market stability, and placed less weight on quality of the enrollee-plan match. The authors show that the presence of inertia contributed to the success of this cost-minimizing strategy: while all auto-assigned enrollees could switch to another plan, most of them didn't, even those assigned to the lowest-quality plans. In addition, the authors find that mobility across plans was dramatically higher among individuals in the top 10 percent of prior spending than among those in the complementary group. Moreover, these high-cost enrollees disproportionately sorted into the highest-quality plan, illustrating the importance of accurate risk adjustment.

Bardey and Buitrago, in "Supplemental Health Insurance in the Colombian Managed Care System: Adverse or Advantageous Selection?" provide a window into the Colombian health insurance system and the sorting of risk types into a supplemental private plan option that coexists with compulsory insurance. The authors test for the presence of "adverse selection" and "advantageous selection". Where the former refers to a negative correlation between unpriced risk and insurance uptake the latter refers to a positive correlation. After correcting for moral hazard effects, the authors find a positive correlation, suggesting that adverse selection predominates.

Pilny, Wubker and Ziebarth, in "Introducing Risk Adjustment and Free Health Plan Choice in Employer-Based Health Insurance: Evidence from Germany", analyze sorting patterns in Germany's Statutory Health Insurance. This scheme, which currently provides coverage to about 70 million individuals (i.e. 90% of the German population), evolved from Germany's traditional non-competitive financing system. Since the early 1990's, however, regulated competition has been gradually introduced. Two milestones in this reform are the introduction of risk adjustment in 1994 and free consumer choice of insurer (referred to as "sickness fund") in 1996. In a comprehensive empirical exercise the authors study the effects of these changes on sickness funds' cost and premiums, and on switching rates. They find that risk adjustment reduced variation in health plan premiums, but not fully. The results on sorting patterns indicate that switchers were mostly young and healthy, which

exacerbated risk segregation and led to an increase in risk adjustment transfers across sickness funds over time.

Predictable profits and losses and incentives regarding health plan design

Premium-rate restrictions increase predictable profits (on people in good health) and predictable losses (on those in poor health), which exacerbates health plans' incentives for inducing advantageous selection. In addition to marketing tools, a potential strategy to do so is via plan design. Ellis, Martins and Zhu, in "Demand Elasticities and Service Selection Incentives among Competing Private Health Plans", examine incentives for health plans to attract profitable enrollees (and to deter the unprofitable ones) through service-level distortion (SLD). The authors refine the SLD-incentives measure first developed by [Ellis and McGuire \(2007\)](#) and apply this measure to data from the U.S. employer-based health insurance sector. The authors confirm the conclusion of earlier studies that incentives for SLD are substantial. They also show, however, that their refinements to the SLD-incentives measure have a meaningful impact on the ranking of services according to the incentives for under/overprovision of these services. In a simulation of different health plan payment modalities, the authors find that, compared to flat capitation, specific forms of concurrent risk adjustment, prospective risk adjustment, and reinsurance reduce SLD-incentives by 47%, 43% and 32%, respectively.

Whereas the empirical literature measuring selection incentives is well-developed, evidence of how insurers actually modify plan features in response to these incentives has been scarce. Two papers in this special issue help fill the gap. Han and Lavetti, in "Does Part D Abet Advantageous Selection in Medicare Advantage?", describe how the introduction of Medicare Part D in 2006 provided MA plans with a "scalpel" for risk selection. Part D potentially is a powerful selection tool since MA plans are able to set generous cost-sharing rules for drugs taken by beneficiaries that tend to be profitable conditional on their risk score. In an earlier paper, [Lavetti and Simon \(2016\)](#) have shown that plans indeed engaged in such strategic formulary design. In the current paper, Han and Lavetti find that this strategic design led to an increase in MA market shares among profitable groups and a decrease of MA market shares among unprofitable groups, implying that Part D indeed forms a mechanism to encourage advantageous selection.

Decarolis and Guglielmo, in "Insurer's Response to Selection Risk: Evidence from Medicare Enrollment Reforms", investigate insurers' response to a change in Medicare enrollment policy. Medicare beneficiaries select their plan for next year during a window of time in the fall of the current year. Starting in 2012, however, a reform allowed enrollees to switch to "5-star" (i.e. highest-quality) plans at any point during the year. While intended to encourage enrollment in and reward high-quality plans, this reform exposes 5-star plan to a significant selection risk: enrollees could initially select cheap plans and then move to expensive 5-star plans with generous coverage only after being hit by a health shock. Decarolis and Guglielmo find that 5-star plans responded to this selection risk by lowering both premiums and generosity. As a result, these plans became more appealing for beneficiaries in good health, but less so for those in worse health, leading to the basic price/quality distortion first identified by [Rothschild and Stiglitz \(1976\)](#).

Implications for the evaluation and design of health plan payment systems

In terms of health plan payment, there are three main strategies to mitigate adverse selection: risk rating, risk adjustment and risk sharing. Relaxation of premium-rate restrictions can help to

bring premiums closer to predicted costs. When (further) risk rating is considered undesirable (e.g. for reasons of fairness), the other two strategies can compensate health plans for remaining gaps between premiums and predicted costs. Where risk adjustment compensates plans for predictable spending variation given a set of individual risk characteristics such as age, gender and (prior) diagnoses, risk sharing simply compensates plans for (a portion) of variation in realized spending (e.g. reinsurance). These three strategies can be combined in different ways depending on the policy setting. In their paper “Measuring Efficiency of Health Plan Payment Systems in Managed Competition Health Insurance Markets,” Layton, Ellis, McGuire and Van Kleef propose practical metrics for assessing *ex ante* how well a certain health plan payment policy is likely to succeed in addressing the problems of inefficient sorting and inefficient plan design. Readers familiar with the literature on health plan payment will know that an R-squared statistic from a risk-adjustment regression is by far the most widely used metric of payment systems, in spite of an absence of a clear link between the efficiency problems noted above and the statistical fit of a regression of health costs on risk adjusters. Layton, Ellis, McGuire and Van Kleef use the economics of health insurance markets to derive measures the authors claim are valid (i.e., based on economic theory), complete (i.e., can accommodate the many features of actual plan payment systems such as consumer premiums and reinsurance), and practical (i.e., can be computed with the data typically available for an *ex ante* evaluation of a plan payment model). The authors then illustrate the measures with an application to data used to calibrate payment models in the U.S. Market places.

While all papers in this volume consider risk adjustment as an important policy tool to address adverse selection it is important to note that risk adjustment itself can introduce certain inefficiencies as well. This is the topic of the last paper in this issue, “Plan Responses to Diagnosis-Based Payment: Evidence from Germany’s Morbidity-Based Risk Adjustment”, by Bauhoff, Fischer, Goepffarth and Wupperman. In 2009, the initial risk adjustment methodology in the German Statutory Health Insurance, as analyzed by Pilny, Wubker and Ziebarth (this issue), was replaced with morbidity-based risk adjustment. While the initial methodology adjusted for age, gender and disability status of enrollees, the new system also includes morbidity groups for 80 illnesses based on ICD-10 diagnosis codes from hospitals and office-based physicians. Though sickness funds in Germany are generally not allowed to own or operate health care facilities, there are several ways in which they can encourage physicians to adopt coding practices that are associated with (higher) risk adjusted payments. Bauhoff, Fischer, Goepffarth and Wupperman show that sickness funds were indeed successful in influencing physicians’ coding practices in a way that could lead to higher payments. These results underline one of the difficult tradeoffs involved in health plan payment design: on the one hand diagnosis-based risk adjustment help mitigating adverse selection, but on the other it introduces inefficiencies itself.

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Papers in this Special Section of the *Journal of Health Economics* (JHE) were submitted in response to a call for papers on “Health Plan Payment in Regulated Competition”. One paper, “Measuring Efficiency of Health Plan Payment Systems in Managed Competition Health Insurance Markets,” was invited. Other papers went through the regular review process of the *JHE*. Papers were edited by the two of us, with guidance from the regular *JHE* editors. We thank the *JHE* for the opportunity to publish this collection of papers and the anonymous (to the authors) reviewers who contributed their time to improve the papers. Special thanks are due to Michelle Hickman from the *JHE* Editorial Office who advised and assisted us capably throughout the process. We hope the papers in this special issue contribute to a better understanding of adverse selection in regulated health insurance markets and its implications for health plan payment systems.

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