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Steps to reduce favorable risk selection in medicare advantage largely succeeded, boding well for health insurance exchanges

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Abstract

Managing competition among health plans that attract different risks has been a challenging policy problem. Within Medicare, the Medicare Advantage (MA) program historically attracted better risks than did Traditional Medicare (TM). This favorable selection resulted in Medicare's paying more for persons enrolled in MA than if they had been enrolled in TM. We studied whether policies Medicare implemented in the past decade to reduce favorable selection in the MA program succeeded, in particular improved matching of reimbursement with a beneficiary's expected cost and restricting when beneficiaries could switch from MA to TM. We found they did. Differences in predicted spending between those switching from TM to MA relative to those who remained in TM markedly narrowed, as did adjusted mortality rates. Because insurance exchanges will employ similar policies to combat selection, our results give reason for optimism about managing competition among health plans.

Favorable selection has been a persistent problem in Part C of Medicare, now called Medicare Advantage (MA).^{1–11} Favorable selection means beneficiaries who cost less than average, after adjusting for certain demographic and clinical characteristics ("risk adjustment"), disproportionately enrolled in MA, while those who cost more than average have disproportionately remained in Traditional Medicare (TM). It results in higher federal spending because MA payments are tied to risk-adjusted spending for the average TM beneficiary in an area. If the method of risk adjustment inadequately explains differences in costs between MA and TM enrollees, the government pays more for MA enrollees than if they had enrolled in TM.

The effectiveness of risk adjustment is also a critical issue in future health insurance exchanges in the commercial market and for Medicare premium support proposals. The less effective risk adjustment, the greater the incentive for competing insurers to select good risks, as they have historically done in individual and small group markets.¹² Indeed, the pervasiveness of risk selection and medical underwriting by insurers in individual and small group markets is a principal motivation for the Affordable Care Act's reforms in those markets. Assuming universal coverage, if some plans attract favorable risks after risk adjustment, other plans will necessarily have unfavorable risks and may withdraw from the market or raise premiums relative to benefits. Uneven allocation of risks across plans without effective risk adjustment could thus result in market instability, with individuals having to change plans, and potentially physicians and medications because a new plan's networks and formularies differ.

Medicare has taken several steps in recent years to reduce favorable selection in the MA program, and similar methods will be used in insurance exchanges. Determining how well these steps succeeded is thus important both for Medicare and the commercial market.

Selection and Risk Adjustment in the Medicare Advantage Program

Prior to 2000, the federal government risk adjusted payments to MA plans only for enrollee demographic characteristics, primarily age and gender, but this was insufficient to offset favorable selection into MA plans; the Congressional Budget Office estimated the government overpaid plans in the aggregate 8%.¹³ To reduce the overpayment, Congress in 1997 mandated that the risk adjustment mechanism account for MA enrollees' health status. In practice, this meant adjusting government payment using diagnostic information on claims forms. Thus, Medicare in 2000 began to use inpatient diagnoses to adjust payment; outpatient diagnostic information was considered unreliable.¹⁴ Using only inpatient diagnoses, however, created an incentive to hospitalize beneficiaries with conditions that could be treated more cheaply on an outpatient basis. To limit this incentive, the payment rate incorporating inpatient diagnostic information only received 10% weight; the remaining 90% continued as before ignoring diagnostic information.

In 2004 Medicare began a transition to a new risk adjustment system that accounted for both inpatient and outpatient diagnostic information, the CMS-HCC system.¹⁵ Payment rates determined by the new system were given 30% weight in 2004, 50% in 2005, 75% in 2006, and full weight in 2007. The new system greatly improved the ability to predict spending; specifically, it predicted 11% of variation in beneficiary spending compared with just 1% for the prior system.¹⁵ Much variation, of course, is not predictable statistically, but at least 20 to 25% is.¹⁶

To reduce selection further, Medicare also imposed a partial enrollment lock-in in 2006, meaning MA beneficiaries were no longer free to switch from MA to TM monthly. By contrast, employment-based insurance customarily imposes an annual lock-in, i.e., enrollees choose a plan for the upcoming year and remain in it for the entire year. The ability to opt out monthly facilitated favorable selection, because MA beneficiaries with a mid-year health shock could move almost immediately to TM with its wider selection of physicians and hospitals. Beginning in 2006 MA beneficiaries were locked into their plan for the second half of the year unless they moved from their plan's service area, and in 2007 for the last nine months of the year. Beneficiaries dually eligible for Medicare and Medicaid are exempt from the lock-in.

Both the improved risk adjustment and the lock-in should have reduced selection, but other changes in the MA program could also have affected selection. First, the average level of MA reimbursement steadily increased from 103% of TM in 2003, the beginning of our study period, to 113% in 2008, the end of our period, leading MA enrollment to rise from 13% of beneficiaries in 2003 to 22% in 2008.^{16–18} (MA enrollment has continued to increase, rising to 27% of beneficiaries by February 2012.¹⁹) The expansion may have changed the distribution of health risks across MA and TM. We describe below our method of adjusting for the effect of expansion on selection.

Second, Congress altered the nature of MA plan offerings. Initially, plans were almost entirely HMOs with restricted physician networks and active medical management. In 1997 Medicare authorized Private Fee-for-Service (PFFS) plans that were prohibited from using medical management. Initially enrollment in such plans was minimal, but starting in 2003 any physician who accepted PFFS patients was required to treat them for TM fees. Because of this rule and increased MA reimbursement, PFFS enrollment grew substantially. Because PFFS plans had no network restrictions in the 2003–2008 period we studied (networks were required as of 2011), they may well have attracted a different mix of risks than HMOs. Starting in 2003 MA plans also could offer a Preferred Provider Organization (PPO) option,

which could also have attracted a different risk mix. For this reason we analyze each plan type separately.

Finally, in 2006 Medicare introduced Part D, which made drug coverage available to TM beneficiaries and required MA plans to offer equivalent or better drug coverage. To keep a level playing field, Medicare increased its payment to an MA enrollee's plan by an amount actuarially equivalent to its subsidy to Part D plans in TM. Many MA plans had previously offered limited drug coverage, but with the additional subsidy drug coverage in MA was typically cheaper and more generous than in TM. Because of the equal subsidy to TM and MA, we believe Part D's effect on MA enrollment decisions was likely small, but our estimates include any effects on selection of Part D's introduction.

In this paper we assess whether there was greater risk equalization between MA and TM after this series of policy changes. In other words, we estimate whether favorable selection in the MA program fell.

Methods

We compared average risk scores, which are proportional to a group's predicted spending, for those who changed from MA to TM or vice-versa ("switchers") with those who remained in TM ("stayers") in a given year. If predicted spending is less for those switching to MA than for those remaining in TM, there is favorable selection -and conversely for those switching out of MA. Switchers include those enrolled in MA on January 1st of the current year if they were in TM the prior year and vice-versa. To compute risk scores we used a 20% random sample of TM claims from 2003–2008; the MA analog of TM claims is not publicly available. Because the diagnoses used in the CMS-HCC model are for the prior year, we show risk scores from 2004 to 2008.

In our analysis of risk scores we included beneficiaries age 65 years or older on January 1 of a given year and whose original reason for Medicare entitlement was turning 65. We excluded the institutionalized and beneficiaries eligible for Medicaid ("duals"), few of whom were in MA in the time period we studied other than in Special Needs Plans. We did not study Special Needs Plans because their reimbursement differed and because they began in 2004 and so had no prior history of selection. We used the 2007 version of the CMS-HCC model to calculate risk scores in each year. That model accounts for age, gender, and age-gender interactions, as well as the presence or absence of 70 conditions as recorded on claims from the past 12 months. For those switching into MA these scores predict spending relative to the average TM enrollee. For those switching out of MA we lacked diagnostic data for the prior year and so calculated risk scores from diagnoses on TM claims after the switch compared with those who were always in TM. For those switching out of MA we only included those enrolled in TM for 12 subsequent months or who died, so comparisons of switchers and stayers were unaffected by the period of claims available for HCC risk score determination. This effectively meant our sample for the analysis of risk scores was age 66 and over. We focused on the three largest types of MA plans: HMO, PFFS, and PPO. The study was approved by the Harvard Medical School Committee on Human Studies and the CMS Privacy Board.

Because enrollment went up sharply in the years we studied, switchers in the later years potentially came from a different population and so could have had a different clinical risk profile than those in the earlier years. To account for this possibility, we controlled for MA penetration in the county of residence in each year. Thus, for counties with a given level of MA penetration, we asked how the difference in risk scores between switchers and stayers

changed over time. If the new risk adjustment procedure and the lock-in were effective in addressing selection, this difference should have fallen.

In addition, our results show how varying penetration across counties affected risk scores, illuminating how enrollment expansion affected selection. The standard economic model of selection assumes that the worst risks are in TM, the best risks are in MA, and those switching from TM to MA are the best risks previously in TM.^{20–21} Quantitatively this model, which epidemiologists call the Will Rogers Effect, predicts that counties with a higher MA penetration will have higher average risk scores in both MA and TM.²² Because we do not observe risk scores in MA, we cannot test the MA prediction, but in each year we test the TM prediction that HCC risk scores are higher in counties with greater penetration among both TM stayers and among switchers to MA. We also estimated a county fixed effects model, which shows the effect of greater penetration within a given county over time on risk scores; this yielded similar results.²² Because beneficiaries who move could be forced to change plans and thus exhibit a different pattern of selection, we controlled for whether the beneficiary changed zip code of residence.

In addition to analyzing risk scores, we computed 2008 mortality rates for MA enrollees relative to TM enrollees, adjusted for age, gender, and Medicaid status. We also disaggregated these rates among MA enrollees by length of MA enrollment. We compared these results with similar calculations done by MedPAC using 1998 data.²⁴

Finally, we examined the within-year distribution of disenrollment from MA-HMO's. (PPO and PFFS disenrollment before 2006 was too small to yield meaningful pre- and post-lock-in comparisons.) If the lock-in deterred switching because of a mid-year health shock, the annual disenrollment rate should have fallen and this fall should have been concentrated in lock-in months.

Results

Enrollment in MA grew 77% from 2003–2008, and disenrollment rates fell in each type of MA plan (Exhibit 1). Less than half of those disenrolling from MA remained in TM for 12 months or died, implying that the majority of MA disenrollees re-enrolled in MA within a 12 month period.

In 2004, before the lock-in and at the start of the CMS-HCC risk adjustment phase-in, TM beneficiaries who switched to MA were better risks than those who stayed in TM, while those disenrolling from MA were similar (Exhibit 2). The average risk score at this time was around 1.1; thus, the -0.113 value for 2004 for TM enrollees switching to MA means those switching to MA were expected to cost 10% less than the average TM beneficiary the following year ($0.113/1.1=0.103$). By 2008 favorable selection remained but had dropped by a factor of three overall – although less for those switching into HMO plans. As another measure of the decrease, the 2003 difference in TM cost between those switching to MA for 2004 and those remaining in TM for 2004 was \$2,693, whereas the 2007 difference for those switching in 2008 – after the full implementation of CMS-HCC's and the lock-in – had fallen to \$1,093.²²

Whereas the results for those switching to MA indicated decreased selection, differences in risk scores for those switching out of HMO's and PPO's became increasingly positive (Exhibit 2). Thus, while the rate of disenrollment fell over time (Exhibit 1), those who did disenroll were sicker than the average beneficiary who stayed in TM.

TM stayers in counties with higher MA penetration in a given year had only slightly higher average risk scores than stayers in counties with less penetration, at most 0.01 higher for

each 10 percentage point increase in MA penetration (Exhibit 3). Risk scores among those switching to MA showed no consistent pattern with the MA penetration in their county. As penetration rose, scores among switchers rose marginally two of the five years but fell in three. These mixed results across years were found for each type of MA plan.²²

Adjusted mortality rates were lower among MA than TM beneficiaries in both 1998 and 2008, consistent with favorable selection, but moved toward equality over time (Exhibit 4). Specifically, mortality among those in MA in 2008 was 93% of those in TM, compared with 85% a decade earlier. For those in MA five years or more, it was 99% of the TM rate by 2008. New MA enrollees, however, continued to exhibit substantial selection on this measure, though less than in 1998; their adjusted mortality was 87% of the TM rate in 2008 compared with 79% earlier.

Annual disenrollment rates fell from 2003–2008 (Exhibit 1). This fall was concentrated in the months in which the lock-in was effective.²² In 2004 and 2005, before the lock-in, disenrollment during the months in which the lock-in would later apply was 5–7%, whereas in 2006 and later it was 3–4%.²²

Discussion

Several pieces of evidence suggest the steps Medicare took to address favorable selection in MA substantially reduced it. We focused on the improved risk adjustment to MA plan payments and the reduced ability to leave MA monthly.

To estimate how much these actions affected selection, we estimated how the difference in expected spending between those joining MA plans from TM and those remaining in TM changed over time. Smaller differences indicate less selection. The difference declined by a factor of three overall; in other words, favorable selection markedly declined, although not to zero. The decline occurred in all three major types of MA plans, but was less for HMO plans. Because this result holds constant MA penetration in the county, it is not attributable to the large increase in MA enrollment in these years.

The decline in favorable selection among those enrolling in MA was somewhat offset by increased favorable selection among those who disenrolled. Although fewer disenrolled, those who did were increasingly sick, implying that relatively better risks remained behind in MA. The net effect on selection is likely modest, however, because in 2006–2008 about five times as many persons switched into MA each year as switched out (Exhibit 1). Moreover, more than two-thirds of those who switched out switched back within a year, suggesting transient disenrollment to receive a medical procedure without being subject to MA utilization management or provider networks. Although such behavior is certainly consistent with selection, the ability to jump in and out of MA has now been further reduced; as of 2011 MA enrollees can only leave in the first six weeks of the year (unless moving from a plan's service area).

The Will Rogers Effect assumes that the worst risks start in TM and predicts that those switching to MA will be the best risks among those in TM. As a result, it predicts that increases in MA penetration will raise risk scores in both TM and MA. The data at best weakly support this hypothesis. Those remaining in TM in more highly penetrated counties do have higher risk scores and hence higher predicted spending than their counterparts in less penetrated counties, as the hypothesis predicts, but only by a small amount. Other factors equal, a county with a 10 percentage point higher penetration rate has less than 1% greater spending among those remaining in TM. Moreover, those switching to MA in more highly penetrated counties are as likely to be worse than average risks in TM as better,

contrary to the hypothesis. In short, switching appears to be a considerably more random process than the standard model of selection indicates.

Differences in mortality rates between TM and MA beneficiaries narrowed between 1998 and 2008 by a factor of two, indicating an increasingly similar mix of risks. Among MA enrollees of five years or more, rates were almost equal.

The proportion of disenrollment occurring in the lock-in months fell by about half, and annual disenrollment rates decreased for all MA plan types (HMO, PPO, and PFFS). Thus, the reduction in disenrollment during the lock-in months did not simply shift disenrollment forward in the year.

Methods similar to Medicare's will be used to combat selection in health insurance exchanges for the under 65, and the stakes are arguably higher there than in Medicare, because TM serves as a safety net plan for Medicare beneficiaries, i.e., a plan that is always there. There is no such plan in commercial markets. Whereas unfavorable selection against TM simply raises federal spending, unfavorable selection against a commercial plan could cause it to withdraw from the market. The process could repeat itself as a former plan's unfavorable risks redistribute themselves among remaining plans. Although risk adjustment among competing plans can never be perfect, our results give reason for optimism that selection in exchanges can be kept at manageable levels.

Our study has several limitations. We cannot determine how much favorable selection remains in MA because we could not calculate the amount of selection present in 2004. Nonetheless, the mortality analysis suggests selection has declined among all MA enrollees relative to all TM enrollees. Moreover, once in MA most enrollees tend to remain there; 97.5% of those in MA in 2007 remained in 2008 (Exhibit 1). Because MA mortality rates move toward TM rates the longer an enrollee remains, any initial selection may regress toward the mean.

We cannot determine how much of the decline in selection is attributable to improved risk adjustment, how much to the lock-in, and how much to Part D, but doing so is not critical because it is their combined effect that matters. And all of these techniques will have their analog in health insurance exchanges.

Our findings do not translate into a measure of federal overpayment to MA plans because selection is only one factor affecting federal cost. Throughout the 2003–2008 period a number of policies raised the cost of MA relative to TM, including Congressionally set reimbursement floors.¹¹ Although the Affordable Care Act changed the specifics of those policies, it left adjusted MA reimbursement above TM.

MA plans have incentives to code diagnoses more intensively than TM, because plan reimbursement rises with additional diagnoses whereas physician reimbursement in TM does not. This differential incentive should not affect our main results since all the individuals in our sample were in TM when their diagnoses were recorded. To the extent that MA disenrollees carry their diagnoses into TM, however, any such coding difference would cause MA disenrollees to appear sicker than beneficiaries already in TM, consistent with the increasing trend in risk scores among disenrollees (Exhibit 3). In other words, any bias from coding effects works against our finding of a decline in favorable selection. Although coding is more aggressive in some areas than in others, the geographic distribution of those switching to MA is relatively stable so geographic differences in coding practices do not affect our conclusions.^{22,25}

Using data from the Medicare Current Beneficiary Survey, others reached a different conclusion than ours, namely that favorable selection into MA plans actually increased in 2003–2007 compared with 1995–2002.²⁶ Indeed, they find the introduction of CMS-HCCs and the lock-in period actually cost Medicare money because plans were more adept at attracting the healthiest risks within CMS-HCCs than they were at attracting the healthiest within age-gender groups prior to CMS-HCC adjustment.

We, however, have a much larger sample and one additional year with which to measure effects on selection. Using the methods of the other study on our much larger sample, we reach the opposite conclusion.²² In particular, as the CMS-HCC system phased in from 2004–2007 it would have been increasingly in a plan's financial interest to select good risks within each CMS-HCC – and any learning by plans would simply reinforce such an effect. The data, however, are not consistent with this expectation because, controlling for risk score, they show no trend in prior spending in TM by those switching to MA over the period we study. Another demonstration of the inconsistency with the data is that in 2004, not controlling for risk score because the transition to the HCC system had just started, the average MA switcher spent \$2,693 less than the average TM stayer. In 2008, controlling for risk score because the transition to the CMS-HCC system was complete, that figure had fallen by more than a factor of four to \$585.²²

In sum, favorable selection in the MA program in the 1990s meant Medicare spent more on beneficiaries who enrolled in the MA program than if those enrollees had remained in TM. In the mid-2000's Medicare took a number of actions to mitigate selection, including introducing diagnosis-based risk adjustment, a lock-in period, and an expanded array of plan types. These actions were associated with reduced favorable selection. Health insurance exchanges among the under 65 will use similar measures to combat selection. Whether they will be as effective among the under 65 is an open but critical question. We are optimistic.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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