

# Understanding Factors Associated With Increases in Medicare Advantage Enrollment, 2007-2018

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**T**he federally funded Medicare Advantage (MA) program has expanded at an unprecedented rate over the past 15 years, with total enrollment in MA plans more than quadrupling between 2005 and 2021.<sup>1,2</sup> The growth in MA market share is surprising because both of the most significant Medicare reforms in this time period—the 2003 Medicare Modernization Act (MMA) and the 2010 Affordable Care Act (ACA)—should have tilted the market away from MA and toward traditional Medicare (TM).<sup>3</sup> Yet, rather than losing enrollment, the MA market sector expanded dramatically.

Enrollment in MA plans was relatively low until after the operationalization of the MMA, when its rapid expansion began. MMA added the Part D drug benefit to the Medicare program, changed payment rules, and created private fee-for-service (PFFS) plans. Prior to MMA, prescription drug coverage was the key benefit offered by MA plans to entice enrollment.<sup>4</sup> Adding heavily subsidized drug coverage to TM meant that a benefit with high marginal utility to enrollees was no longer offered exclusively in MA. This should have led to reduced enrollment in MA. However, PFFS plans and plan payment increases would have had the opposite effect, increasing MA enrollment. Thus, the increase in MA enrollment beginning in 2007 was not unexpected but was also not preordained. From 2005 to 2009, enrollment grew from 5.6 million to 10.5 million, with the MA market share growing from 13% to 24%.

In contrast, the ACA, enacted in 2010, would have been expected to reduce MA enrollment. The ACA froze MA payment rates in 2011, then reduced them over 5 years beginning in 2012, with an average payment decline of 13% relative to TM.<sup>5</sup> Prior research has found a direct link between MA payment rates and MA enrollment<sup>6</sup>; the Medicare Trustees projected that the payment cuts would lead to a decline in MA enrollment from 25% in 2010 to 16% in 2017.<sup>4,5</sup>

The ACA did lead to reductions in the number of MA plans offered,<sup>7</sup> but not to reductions in enrollment, largely driven by the exit of PFFS plans from the market.<sup>4,7</sup> Instead, MA enrollment grew both in absolute terms and in market share, from 11.1 million in 2010 to 15.7 million in 2014 to 26.0 million in 2021, or from 25% to 30% to 42% market share.<sup>1</sup> Although the payment cuts were at least partially mitigated by the introduction of bonus payments to plans

## ABSTRACT

**OBJECTIVES:** Private managed care plans in the Medicare Advantage (MA) program have been gaining market share relative to traditional fee-for-service Medicare (TM), yet there are no obvious structural changes to Medicare that would explain this growth. Our goal is to explain the growth in MA market share during a period when it increased dramatically.

**STUDY DESIGN:** Data are drawn from a representative sample of the Medicare population from 2007 to 2018.

**METHODS:** We decomposed MA growth into changes in the values of explanatory variables that influence MA enrollment (eg, income and payment rate) and changes in preferences for MA vs TM (estimated coefficients) using a nonlinear version of the Blinder-Oaxaca decomposition to distinguish the sources of MA growth. We find that the relatively smooth growth in MA market share masks 2 distinct growth periods.

**RESULTS:** From 2007 to 2012, 73% of the increase was due to changes in the values of the explanatory variables, and only 27% was due to changes in coefficients. In contrast, from 2012 to 2018, changes in explanatory variables, particularly MA payment levels, would have led to a decline in MA market share if that effect had not been offset by changes in the coefficients.

**CONCLUSIONS:** Overall, we find that MA is becoming more appealing to more educated and nonminority beneficiaries than in the past, although minority and lower-income beneficiaries are still more likely to pick the program. Over time, if preferences continue to shift, the nature of the MA program will change as it moves more toward the middle of the Medicare distribution.

*Am J Manag Care.* 2023;29(4):e111-e116. doi:10.37765/ajmc.2023.89351

## TAKEAWAY POINTS

Medicare Advantage market share has grown rapidly over the past 15 years, but the key factors driving the growth are unknown. Using a Blinder-Oaxaca decomposition, we find that the 84% of the growth in Medicare Advantage from 2007 to 2018 is driven by changes in beneficiary preferences rather than by changes in individual or market factors. This suggests that the growth represents a permanent change in the Medicare program and is unlikely to be reversed by incremental policy changes.

- ▶ Increases in Part D premiums were a key factor in MA market share growth from 2007 to 2012.
- ▶ Growth in the later period (2012-2018) was largely associated with changes in preferences.
- ▶ MA payment decreases in the Affordable Care Act should have led to enrollment declines, but changes in beneficiaries' preferences overwhelmed the payment decreases.

with high star ratings and by holding payments for low enrollment counties at 115% of FFS,<sup>8</sup> rapid growth of MA enrollment was not an expected outcome from the ACA.

Although the reasons for the growth in MA market share are not clear, the advantages and disadvantages of MA plans are well studied and understood: MA plans offer expanded benefit packages, lower cost sharing for covered services, and lower overall financial risk while requiring narrower provider networks and more care management than TM.<sup>9-13</sup> MA enrollees tend to be younger and healthier than TM beneficiaries, based on self-assessed health, functional status, and cognitive functioning.<sup>13-16</sup> They are less likely to be below the federal poverty line but more likely to have incomes between 100% and 200% of poverty.<sup>13,17</sup> Disenrollees from the MA sector tend to be higher cost and sicker than beneficiaries continuously enrolled in TM,<sup>10,18-21</sup> although most beneficiaries who disenroll from an MA plan enroll in a different MA plan rather than TM<sup>22</sup> and enrollment tends to be sticky, with relatively high rates of enrollees remaining in the same plan.<sup>23</sup>

Enrollees tend to select MA plans that have lower premiums and higher benefits,<sup>4,24-26</sup> with lower out-of-pocket costs of particular importance.<sup>27</sup> Enrollment also is higher in plans with better star ratings and quality.<sup>28,29</sup> At the market level, higher enrollment is associated with higher plan payment rates<sup>6,30</sup> and higher levels of plan competition.<sup>31</sup>

Hypotheses about why MA enrollment is growing, including changes in beneficiary characteristics, beneficiary preferences, MA benefit designs, and prices of alternatives, such as supplementary insurance.<sup>3</sup> However, the relative impact of the different factors is unknown. Future projections of MA enrollment are based on past growth in MA that is not well understood. For example, the Congressional Budget Office predicts that 47% of Medicare beneficiaries will enroll in MA by 2029, based on past trends.<sup>1</sup> The purpose of this study is to understand the reasons for the growth in MA enrollment.

## METHODS

## Data Sources

Our main data source is the 2007-2018 Medicare Current Beneficiary Survey (MCBS), a representative rolling cohort survey of Medicare

beneficiaries. We selected 2007 as the first year because it follows a major structural change in Medicare in 2006, when prescription drug coverage offered by private plans became available. Our sample includes individuals who were enrolled in Medicare Parts A and B for all months of Medicare eligibility. Following the literature on Medicare health plan choice, we excluded individuals younger than 65 years (disabled), currently employed individuals, end-stage renal disease–entitled beneficiaries, full Medicaid (dual) enrollees (including Medicaid enrollees in other programs such

as Qualified Medicare Beneficiary [QMB]), and those who have a supplemental Medicare policy through their former employer because their choice sets are constrained. Our sample represents “active choosers”—individuals who have neither constrained choice sets nor third-party subsidies.

We supplemented the MCBS with CMS data on county-level MA payment rates, plan participation, and Part D premiums. We obtained data on Medigap premiums from the National Association of Insurance Commissioners (NAIC) Insurance Data Products. The CMS and NAIC data were combined with the MCBS at the county level, whereas the Part D premium data were combined at the region level. The unit of analysis is the individual, with the supplemental variables merged in based on county of residence.

## Variables

We included individual characteristics suggested by the prior literature as important predictors of MA choice. These include demographic characteristics at the individual level: age (continuous, in years), annual income (in thousands of dollars), education (dichotomized as college graduate yes/no), race (dichotomized as White yes/no), plus indicator variables for female, married, and living in an urban area. Race was defined as White yes/no because of a lack of variation in the underlying sample. Given the extensive literature on the effect of health on MA enrollment, we included measures of self-rated health (on a 1-5 scale from excellent to poor), an indicator for the beneficiary reporting a diagnosis of diabetes, and a count of other chronic illnesses from a list of approximately 20 possibilities, including asthma, arthritis, heart disease, and cancer. We selected diabetes as a stand-alone variable because of its high cost, its prevalence, and prior work showing a relationship between diabetes and MA enrollment.<sup>4</sup>

We also included measures of MA market structure: the number of MA contract options in the individual's county of residence, the mean Medigap premium, and the mean Part D premium (all variables in dollar terms were inflation adjusted to 2020 dollars). Finally, we included the mean MA payment rate to represent differences in MA benefits. The MA premium represents the benchmark payment for the county of residence.

**Statistical Model**

Our approach is based on a Blinder-Oaxaca regression decomposition, which partitions changes in an outcome of interest between 2 groups,<sup>32,33</sup> hereafter referred to as BO. The BO methodology has been used extensively to study gender differences in labor outcomes,<sup>34,35</sup> health disparities,<sup>36</sup> health care spending,<sup>37</sup> and obesity.<sup>38,39</sup>

We decomposed time series data on the difference in MA market share between the final year (2018) and the base year (2007).<sup>40</sup> In a linear model, that difference can be written as:

$$\hat{y}_{2018} - \hat{y}_{2007} = \bar{x}'_{2018} \beta_{2018} - \bar{x}'_{2007} \beta_{2007}$$

Equation (1) shows the change in MA market share between 2018 and 2007 evaluated at the mean values of the explanatory variables ( $\bar{x}$ ) and the relationship between the explanatory variables and market share ( $\beta$ ). Equation (1) can be rearranged as:

$$\hat{y}_{2018} - \hat{y}_{2007} = (\bar{x}'_{2018} - \bar{x}'_{2007}) \beta_{2018} + \bar{x}'_{2007} (\beta_{2018} - \beta_{2007})$$

Equation (2) decomposes the growth in MA market share into 2 parts: the first part represents the growth in market share due to changes in the explanatory variables, evaluated at the final-year coefficients. The second part shows the growth in market share due to changes in the coefficients, evaluated at the base-year values of the explanatory variables. Our statistical model is a probit model of the individual's choice between the MA sector and TM. We used the approach described by Powers et al, which applies weights from a first-order Taylor linearization of equation (2) to address the "path dependence problem."<sup>41,42</sup> We selected the form of equation (2) as shown because the second term allows us to calculate the change in MA market share due to changes in coefficients, holding the characteristics at their original values.

We hypothesized that the key factors behind MA market share growth could be different between 2007-2012 and 2012-2018. The earlier time period includes the addition of the Part D program, PFFS plans, and payment increases from the MMA, whereas the latter time period includes payment reductions from the ACA. To test this hypothesis, we looked at both the overall time span (2007-2018) and 2 subperiods: 2007-2012 and 2012-2018. The year 2012 was chosen as the dividing line both because it is the midpoint in the data and because it is the first year the ACA payment changes took effect.

**RESULTS**

The overall MA market share in the sample, which includes only "active choosers," increased from 31% in 2007 to 40% in 2012 to 49% in 2018 (Table 1). As MA enrollment increased, some demographics

**TABLE 1.** Descriptive Statistics, MA Only

Variable	2007		2012		2018	
	Mean	SD	Mean	SD	Mean	SD
MA enrollment	31.2%	0.46	40.0%	0.49	48.9%	0.50
Age in years	76.45	7.31	76.36	7.30	77.02	7.31
Female (%)	0.58	0.49	0.57	0.49	0.59	0.49
College graduate (%)	0.14	0.35	0.16	0.37	0.18	0.39
Married (%)	0.49	0.50	0.51	0.50	0.46	0.50
Race: White (%)	0.80	0.40	0.82	0.39	0.78	0.41
Living in urban area (%)	0.90	0.30	0.86	0.34	0.85	0.36
Annual income (\$)	31,442	130,305	32,601	31,375	39,664	46,380
Self-rated health [1 [excellent]-5 [poor]]	2.70	1.09	2.60	1.07	2.64	1.06
Diabetes (%)	0.25	0.43	0.30	0.46	0.37	0.48
Count of chronic illnesses	2.00	1.30	2.14	1.30	2.04	1.32
Number of MA contracts in county	12.31	5.19	14.86	8.53	9.92	4.86
MA payment rate in county, \$/month	1009.79	143.62	969.57	118.94	920.28	49.86
Mean FFS Part D premium in county, \$/month	43.52	3.03	61.33	3.82	55.76	6.47
Mean Medigap premium in county, \$/month	210.09	33.21	196.51	36.21	198.91	30.38
Sample size	1645		2068		3433	

FFS, fee-for-service; MA, Medicare Advantage.

also changed. The mean age of MA enrollees increased from 76.45 to 77.02 years. The proportion of MA enrollees with a college education increased from 14% in 2009 to 16% in 2012 to 18% in 2018; the proportion with diabetes increased as well (25% to 30% to 37%). Some characteristics moved in different directions between 2007 and 2012 vs 2012 and 2018. For example, the proportion of MA enrollees who were married first increased (49% to 51%) and then decreased (51% to 46%). Similarly, the proportion who were White increased (80% to 82%) and then decreased (82% to 78%).

The mean MA payment rate (inflation adjusted) declined over the entire period, reflecting the payment rate decreases legislated in the ACA. The mean number of contracts in a county increased from 12.3 in 2007 to 14.9 in 2012 but then declined to 9.9 in 2018. Similarly, the mean TM Part D premium increased from \$44 to \$61 per month and then decreased from \$61 to \$56.

Table 2 presents probit models for 2007, 2012, and 2018. The reported coefficients are marginal effects. Demographically, enrollment in a MA plan is negatively and significantly associated with income, age, college education, and White race. It is positively and significantly associated with living in an urban area. For health, it is negatively and significantly associated with self-rated health and the count of chronic illnesses. For the market variables, enrollment is positively and significantly associated with the number of MA contracts in a market and the MA payment rate in 2012. The Part D premium is first negatively associated with MA enrollment—contrary

**TABLE 2.** Probit for Probability of MA Enrollment by Year With Model Coefficients Showing Marginal Effects<sup>a</sup>

	Year		
	2007	2012	2018
Income	-0.000188 [-1.22]	-0.00243*** [-4.21]	-0.00201*** [-5.81]
Age	-0.00803** [-3.00]	-0.00788** [-3.14]	-0.00198 [-0.91]
Female	-0.0322 [-0.78]	-0.0297 [-0.76]	0.031 [-0.93]
College graduate	-0.216*** [-3.95]	-0.241*** [-4.76]	-0.136** [-3.26]
Married	0.0425 [-1.03]	0.205*** [-4.99]	0.133*** [-3.83]
Race: White	-0.130* [-2.51]	0.0339 [-0.68]	-0.137*** [-3.35]
Living in urban area	0.561*** [-9.84]	0.560*** [-10.85]	0.319*** [-7.09]
Self-rated health	-0.0507** [-2.75]	-0.0565** [-3.10]	-0.0287 [-1.81]
Diabetes	0.0641 [-1.42]	0.0305 [-0.73]	0.0801* [-2.37]
Count of chronic illnesses	-0.0358* [-2.29]	0.000757 [-0.05]	-0.0396** [-3.15]
Number of MA contracts in county	0.0286*** [-6.28]	0.0137*** [-4.91]	0.0365*** [-9.95]
MA payment rate	0.0000514 [-0.31]	0.000631** [-3.07]	0.000119 [-0.32]
Part D premium	-0.0811*** [-10.69]	0.00906 [-1.66]	0.0130*** [-4.9]
Medigap premium	-0.00225*** [-3.51]	-0.00320*** [-5.97]	-0.00087 [-1.68]
Sample size	5259	5175	6758

MA, Medicare Advantage.

\**P* < .05; \*\**P* < .01; \*\*\**P* < .001.

<sup>a</sup>Coefficients represent marginal effects, with SEs in parentheses.

to the hypothesized effect—but then is positively associated with MA enrollment.

**Table 3** shows the change in MA market share using the BO decomposition. Over the entire observation period (2007-2018), 86% of the change in the probability of MA enrollment was due to changes in the coefficients, and only 14% was due to changes in the characteristics (the values of the explanatory variables). However, the key drivers for market share growth differed in the early and later years.

Market share increased by 8.7 percentage points from 2007 to 2012, with most of the increase (73%) due to changes in characteristics. The key factor in the early period growth is the Part D premium, both in the level of (192%) and the enrollee response to Part D premiums (1772%). The second most important driver of increased market share was the MA payment rate, which also showed a significant change in coefficients.

In contrast, from 2012 to 2018, changes in characteristics would have led to a decline in MA market share if that effect had not been offset by changes in the coefficients associated with an increase in market share. The most important of the characteristics were the Part D premiums (-28%) and the number of MA contracts in a county (-52%). But these effects were overwhelmed by changes in coefficients of market factors (Medigap premiums, Part D premiums, MA contracts) and demographics, with age being a particularly important factor. The urban coefficient also changed from 0.56 to 0.32, indicating a decrease in the probability of enrollment by persons in urban areas or, said differently, an increase in the appeal of MA plans in nonurban areas.

## DISCUSSION

MA has been gaining market share for more than a decade, yet no obvious structural changes to Medicare would explain this growth. Many reasons have been hypothesized as causing the change, including changes in demographics, preferences, and prices of non-MA products such as Medigap. In this study, we disentangled the potential sources of the change in MA market share. Over the entire observation period (2007-2018), we found that changes in characteristics of beneficiaries, choices, and market areas are responsible for only 14% of the increase in MA market share; the bulk of the increase in MA market share is due to changes in the coefficients. Among demographics, there was an increased probability of enrollment based on the coefficients of age, marital status, and being in nonurban areas; the effects for age and nonurban areas were notably large. There was also a significant Medigap effect. But the biggest effect, by far, was the change in the coefficient of Part D premiums.

The changes in all the coefficients need to be interpreted carefully. For example, the BO coefficient on age is positive, indicating that the probability of joining an MA plan for an older person is increasing over time. This could be either because the  $\beta$  (preference weight) on the unobserved sector characteristics with which age is implicitly interacted is changing or that the plans have changed the values of unobserved sector characteristics that appeal to older persons. In either case, this indicates that the marginal utility of MA has increased for older persons.

We also find that relatively smooth increase in MA enrollment masks 2 different mechanisms driving growth. Growth in the early period (2007-2012) was largely associated with changes in characteristics. In the early years of Part D, some Part D plans had very low premiums to gain Part D market share. As the Part D premiums increased, this was a key factor in MA market share growth. In contrast, the later period (2012-2018) was largely associated with changes in coefficients. The policy changes in the ACA should have led to enrollment declines, but changes in the coefficients overwhelmed the payment decreases.

Taking all these results together, we can draw several conclusions. First, changes in market conditions and population characteristics are not the driving force behind MA growth. Instead, changes in beneficiary reactions to market, demographic, and health conditions are the driving force. Indeed, most demographics changed little over time, except for education levels.

We find that Part D premiums have been a key driver of MA market share increases. The first full year of Part D, 2007, is also the first year of our analysis. Thus, the first period of our analysis,

**TABLE 3.** Blinder-Oaxaca Decompositions<sup>a</sup>

	2007-2012		2012-2018		2007-2018	
	Characteristics	Coefficients	Characteristics	Coefficients	Characteristics	Coefficients
Overall percentage	73.25**	26.75	-80.85***	180.85***	13.59*	86.41***
Overall change	0.064**	0.023	-0.06	0.16	0.02*	0.16***
Income	-1.51***	-27.54**	-7.05***	5.25	-4.41***	-10.96***
Age	0.14***	-31.96	-0.24	164.24*	-0.11	84.92*
Female	0.07	0.27	0.00	12.84	0.06	6.84
College graduate	-2.96***	-0.18	-1.04***	7.06	-1.45***	2.21
Married	-0.28***	26.05*	-1.01***	-12.40	-0.64***	7.97*
Race: White	0.18	18.55*	0.91***	-51.31***	0.76***	-1.13
Living in urban area	-1.35***	-1.46	4.78***	-64.60***	2.10***	-33.0***
Self-rated health	2.73***	-9.48	0.01*	26.69	0.71*	11.14
Diabetes	0.50	-2.79	1.63**	5.22	1.60**	0.71
Count of chronic illnesses	0.16	33.98	1.26***	-31.86**	0.22***	-1.47
Number of MA contracts in county	4.81***	-117.39*	-51.48***	106.77***	-12.08***	15.45
MA payment rate	-10.16***	260.95*	-1.33	-175.58	-1.26	11.94
Mean FFS Part D premium	192.44*	1771.90***	-27.83***	88.21	26.56***	767.28***
Mean Medigap premium	7.05***	-31.65	0.55*	169.04***	1.65*	52.55*

FFS, fee-for-service; MA, Medicare Advantage.

\* $P < .05$ ; \*\* $P < .01$ ; \*\*\* $P < .001$ .

<sup>a</sup>Coefficients represent the percentage of the change associated with the characteristics and coefficients.

from 2007 to 2012, represents the “shakedown” period of Part D. The negative coefficient from 2007 indicates that higher Part D mean market premiums were associated with a lower probability of MA enrollment. In 2007, Part D was an entirely new product and neither Part D insurers, MA plans, nor Medicare enrollees had experience with Part D, so beneficiaries may have relied on brand names as a quality marker. Indeed, UnitedHealthcare’s AARP MedicareRx plan was the largest Part D plan in the first year, even though it was a relatively high-priced product.<sup>43</sup> In our model, the Part D premium coefficient quickly became positive and thereafter reflected a conventional economic relationship, given that Part D coverage in TM and MA are economic substitutes.

**Limitations**

Our analysis has several limitations. We selected the midpoint of the data (2012) as a discontinuity in the MA market share models. This was both because it was the midpoint of the data and because 2012 choices reflected changes in the November 2011 plan offerings that were happening along with the ACA payment reductions. Although 2012 is the logical midpoint because it is the first year in which choices reflect ACA payment reductions, it could be argued either that plans acted in anticipation of the change or that the effect of the payment cuts took time to have an impact. To test this, we used both 2011 and 2013 as alternative midpoints to test the robustness of our findings; the results are consistent with each of the 2 alternative midpoints. Our results also could reflect differences in locations that are correlated with unobserved MA plan characteristics but uncorrelated with mean MA county-level plan payment models. We

estimated the models with state fixed effects to address this possibility, and our findings were robust to that specification. Our model uses the benchmark payment rate for the county as the payment rate; although prior work has also used this approach,<sup>6,40</sup> it omits other variables that may vary at the county level. We tested other benefits, such as the number of plans in the market area with 0 premiums, but none were statistically significant or significantly changed the results. We also tested whether this was a “cohort” effect and simply reflects changes in preferences among newer beneficiaries, but we were not able to detect any cohort effects.

**CONCLUSIONS**

Although MA has grown rapidly over the past decade plus, future growth is harder to predict. Our findings suggest that MA growth will not depend on the continuation of current trends in demographic or market characteristics. Instead, the coefficients on those variables are changing and may continue to change, but there is no compelling reason to assume that will happen. Plans may run out of new innovations or coefficients may stabilize, leading to stagnant MA growth. Alternatively, the coefficients may continue to shift, leading to growth or decline in MA market penetration.

However, some notable simultaneous trends in the explanatory variables and their coefficients may suggest further growth. The proportion of beneficiaries with diabetes is increasing, as is the coefficient on diabetes. The proportion of beneficiaries living in urban areas is getting smaller and the coefficient on “living in urban area” is getting less positive. The mean age of the Medicare



population is increasing, and the age coefficient is becoming less negative. All of these subpopulations could be plausible sources of continued MA growth if the current trends continue. ■

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**Source of Funding:** Agency for Healthcare Research and Quality under grant number 5R01HS024281-02.

**Author Disclosures:** The authors report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

**Authorship Information:** Concept and design (AA, RF, EMvB-A, BD); acquisition of data (AA); analysis and interpretation of data (AA, RF, EMvB-A, BD); drafting of the manuscript (AA, EMvB-A); critical revision of the manuscript for important intellectual content (AA, RF, EMvB-A, BD); statistical analysis (AA, RF, EMvB-A, BD); provision of patients or study materials (AA); obtaining funding (AA, RF); administrative, technical, or logistic support (AA); and supervision (AA).

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