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Do People Who Sign Up for Medicare Advantage Plans Have Lower Medicare Spending?

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People on Medicare can choose coverage from either traditional Medicare or Medicare Advantage plans, typically trading off broad access to providers for potentially lower premiums and out-of-pocket costs. Beneficiaries who choose Medicare Advantage may differ from those in traditional Medicare in both measurable and unmeasurable ways, which may influence their use of services and spending. Yet, Medicare payments to Medicare Advantage plans per enrollee are based on average spending among beneficiaries in traditional Medicare.

This analysis looks at whether beneficiaries who choose to enroll in Medicare Advantage plans have lower spending, on average – before they enroll in Medicare Advantage plans – than similar people who remain in traditional Medicare. We compare average traditional Medicare spending and use of services in 2015 among beneficiaries who switched to Medicare Advantage plans in 2016 with those who remained in traditional Medicare that year, after adjusting for health risk. We adjust Medicare spending values for health conditions and other factors, with a model similar to the CMS HCC Risk Adjustment Model that is used to adjust payments to Medicare Advantage plans (see Methods).

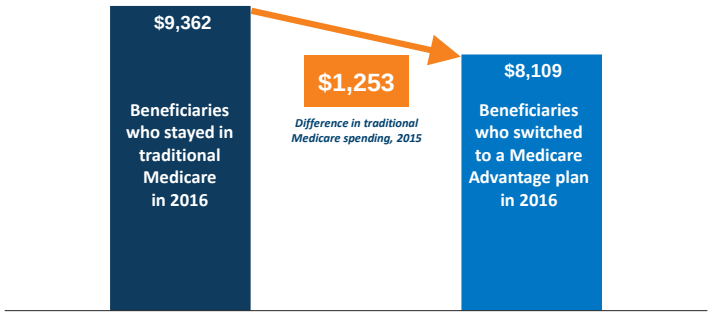
Key Findings

- People who switched from traditional Medicare to Medicare Advantage in 2016 spent $1,253 less in 2015, on average, than beneficiaries who remained in traditional Medicare, after adjusting for health risk (ES Figure).
- Even among traditional Medicare beneficiaries with specific health conditions, those who shifted to Medicare Advantage in 2016 had lower average spending in 2015, including people with diabetes ($1,072), asthma ($1,410), and breast or prostate cancer ($1,517).

ES Figure

Traditional Medicare spending was $1,253 lower for beneficiaries who switched to Medicare Advantage in 2016 than for those who did not switch

Average traditional Medicare spending (Parts A and B) in 2015, adjusted for health risk, by source of coverage in 2016:



Note: Differences were risk adjusted using a model similar to the CMS HCC Risk Adjustment Model.
Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

Even after risk adjustment, the results indicate that beneficiaries who choose Medicare Advantage have lower Medicare spending – before they enroll in Medicare Advantage plans – than similar beneficiaries who remain in traditional Medicare, suggesting that basing payments to plans on the spending of those in traditional Medicare may systematically overestimate expected costs of Medicare Advantage enrollees.

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Overview

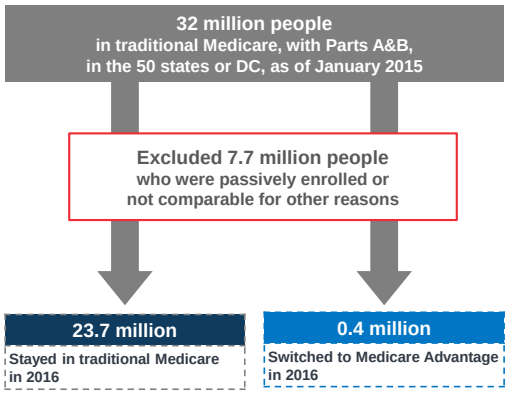
Medicare payments to Medicare HMOs and PPOs, known as Medicare Advantage plans, have always been based on Medicare spending by similar people in traditional Medicare, partly because Medicare has never had accurate, complete data on the use of services or health care spending for beneficiaries in Medicare Advantage plans.[1] The assumption has been that adjusting payments to plans for health status and other factors accounts for differences between beneficiaries in traditional Medicare and those in Medicare Advantage plans. Profits are assumed to be due to plans reducing spending by either managing fees (e.g., by having lower-cost hospitals in their network) or changing patterns of care (e.g., reducing hospital readmissions), rather than to favorable selection. Nonetheless, selection bias has been an ongoing concern and the subject of many studies over the years, with mixed evidence of favorable selection.[2,3,4,5,6] This question is important because it affects the accuracy of Medicare payments to plans on behalf of 20 million Medicare beneficiaries, and rising.

This is the first known analysis to examine whether beneficiaries who choose to enroll in Medicare Advantage plans have lower spending and use fewer services – before enrolling in Medicare Advantage – than similar people in traditional Medicare. If Medicare Advantage enrollees use fewer services and have lower Medicare spending before they enroll in Medicare Advantage plans, compared to similar beneficiaries in traditional Medicare, then basing payments to Medicare Advantage plans on the Medicare spending for similar beneficiaries in traditional Medicare would overestimate the expected costs of Medicare Advantage enrollees and overpay plans by billions of dollars over the next decade. Studies that have looked at differences in the use of services and Medicare spending for Medicare Advantage enrollees compared to beneficiaries in traditional Medicare that did not account for actual prior differences may have overestimated the extent to which plans are reducing enrollees' spending or use of services.

To address this question, we examine Medicare Part A and B spending and service use for traditional Medicare beneficiaries in 2015. We compare average Medicare spending and use of services for traditional Medicare beneficiaries who enrolled in Medicare Advantage plans versus those who remained in traditional Medicare in 2016, after adjusting spending values for health conditions and other relevant factors (Figure 1). We examine how the results differ across demographics, chronic conditions, and counties, and also examine how the results change when Part D spending is included. The analysis is based on a five percent sample of Medicare claims data and excludes beneficiaries who may not have been active choosers in 2016; more details about the analysis are included in the Methods.

Figure 1

Study Overview



Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

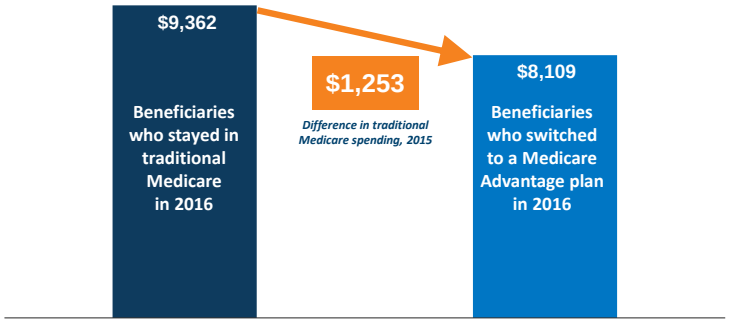
Differences in Medicare Spending

Among beneficiaries in traditional Medicare in 2015, those who enrolled in Medicare Advantage in 2016 had spending (for Part A and Part B) that was $1,253 lower (13% difference), on average, than beneficiaries who remained in traditional Medicare in 2016, after adjusting for health risk factors (Figure 2; Tables 1 and 2).[7]

Figure 2

Traditional Medicare spending was $1,253 lower for beneficiaries who switched to Medicare Advantage in 2016 than for those who did not switch

Average traditional Medicare spending (Parts A and B) in 2015, adjusted for health risk, by source of coverage in 2016:



Note: Differences were risk adjusted using a model similar to the CMS HCC Risk Adjustment Model.
Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

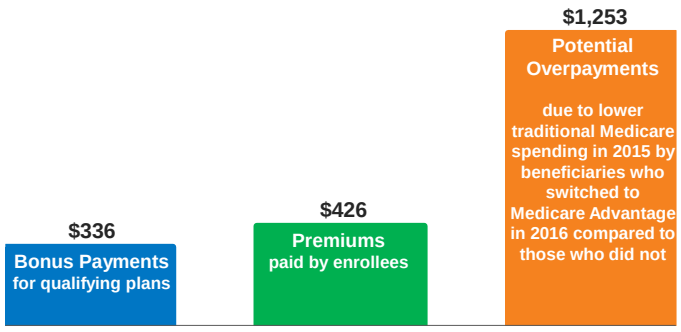
When Part D spending is included, the results changed only slightly. Traditional Medicare beneficiaries in 2015 who switched to Medicare Advantage in 2016 had total Medicare spending (including Part D) that was 15 percent lower than spending for beneficiaries who remained in traditional Medicare in 2016.

Comparison to Other Payments Received by Medicare Advantage Plans. To put the difference in Medicare spending in context, the $1,253 average difference in spending is nearly four-times larger than the average per capita quality-based bonus payment ($336) paid to Medicare Advantage prescription drugs plans that qualified for bonuses in 2015 (Figure 3). The average difference in spending is also more than twice as large as the average annual premium paid by Medicare Advantage enrollees in 2015, including enrollees in plans with no premium.

Figure 3

Potential overpayments per enrollee were almost 4 times larger than the average per enrollee quality-based bonus paid to Medicare Advantage plans in 2015

Average per capita payments received by Medicare Advantage plans:



Note: Bonus payments are average quality-based bonus payments per Medicare Advantage enrollee, among Medicare Advantage prescription drug plans qualifying for bonuses. Premiums are average annual premiums paid by enrollees. Excludes beneficiaries in Employer Group Waiver Plans and includes beneficiaries in Special Needs Plans.
Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016, and CMS Medicare Advantage Landscape and Enrollment files, 2015.

Differences in Medicare Spending, by Demographics

Traditional Medicare spending in 2015 was lower for beneficiaries who enrolled in Medicare Advantage plans in 2016 than for similar beneficiaries who remained in traditional Medicare that year, by age and gender, and among beneficiaries dually eligible for Medicare and Medicaid, after adjusting for health risk and other factors (Table 1).

- **Age:** The difference in average traditional Medicare spending in 2015 among beneficiaries who switched to Medicare Advantage in 2016, compared to those who remained in traditional Medicare, was evident for beneficiaries of all ages, and increased with age for beneficiaries over the age of 65, after risk adjustment. For example, among beneficiaries ages 65-69, average traditional Medicare spending in 2015 was $1,119 lower among beneficiaries who switched to a Medicare Advantage plan in 2016 than for similar beneficiaries who remained in traditional Medicare; among beneficiaries ages 85-89, the difference in spending was $1,314. This finding suggests that selection bias, and the associated potential overpayments, may increase with age.
- **Gender:** The average difference in spending between the two groups was similar among men and women ($1,271 and $1,247, respectively).
- **Dual eligibility for Medicaid:** Traditional Medicare spending in 2015 for Medicare beneficiaries with full Medicaid benefits (full dual eligible) who enrolled in Medicare Advantage in 2016 was $1,142 lower, on average, than spending for similar full dual eligibles who stayed in traditional Medicare in 2016, after adjusting for health and demographic factors. Similarly, partial dual eligibles who enrolled in Medicare Advantage in 2016 had traditional Medicare spending in 2015 that was $1,162 lower than spending for those who remained in traditional Medicare in 2016, after adjusting for risk factors. In other words, among dually eligible beneficiaries – a group of beneficiaries with relatively high Medicare spending – those who used more services and incurred higher Medicare spending in 2015 were more likely to remain in traditional Medicare in 2016 while dual eligibles with lower service use and spending were more likely to enroll in a Medicare Advantage plan in 2016.
- **Institutional status:** Among Medicare beneficiaries living in institutions, such as nursing homes, traditional Medicare spending in 2015 was $1,825 lower among those who enrolled in Medicare Advantage plans in 2016 than among similar institutional residents who stayed in traditional Medicare that year. If higher-cost nursing home residents are remaining in traditional Medicare while lower-cost residents are moving to Medicare Advantage plans, it could make it easier for Medicare Advantage plans serving the nursing home population to be profitable, which may explain the relatively recent increase in firms offering Special Needs Plans for this population (I-SNPs).[8]

Differences in Medicare Spending, by Chronic Conditions

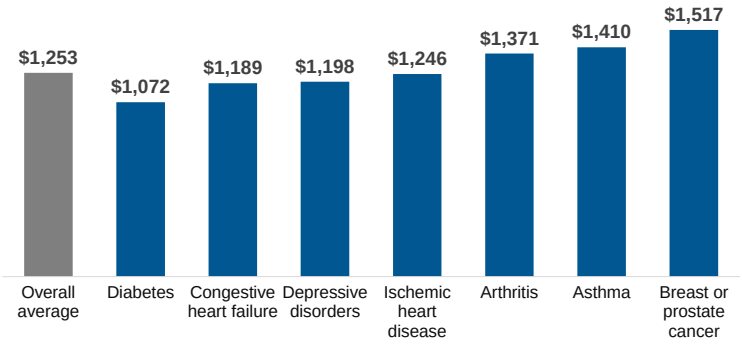
Even among beneficiaries with the same chronic conditions, those who enrolled in Medicare Advantage plans in 2016 consistently had lower Medicare spending in 2015 than similar beneficiaries who remained in traditional Medicare in 2016 (Table 1).

For example, among traditional Medicare beneficiaries with diabetes in 2015, those who enrolled in Medicare Advantage plans in 2016 had Medicare spending that was $1,072 lower in 2015, on average, than similar beneficiaries with diabetes who stayed in traditional Medicare in 2016, after adjusting for differences in health status (Figure 4). In other words, it would appear that lower-cost beneficiaries with diabetes are more inclined to enroll in Medicare Advantage than higher-cost diabetics. Likewise, traditional Medicare beneficiaries with asthma who enrolled in Medicare Advantage plans in 2016 had Medicare spending that was $1,410 lower in 2015, on average, than similar beneficiaries with asthma who remained in traditional Medicare in 2016, even after adjusting for health risk factors.

Figure 4

Beneficiaries with asthma who switched to Medicare Advantage had traditional Medicare spending that was $1,410 lower, on average, than similar beneficiaries who did not switch

Difference in Average Traditional Medicare Spending in 2015, Adjusted for Health Risk, For Select Chronic Conditions:



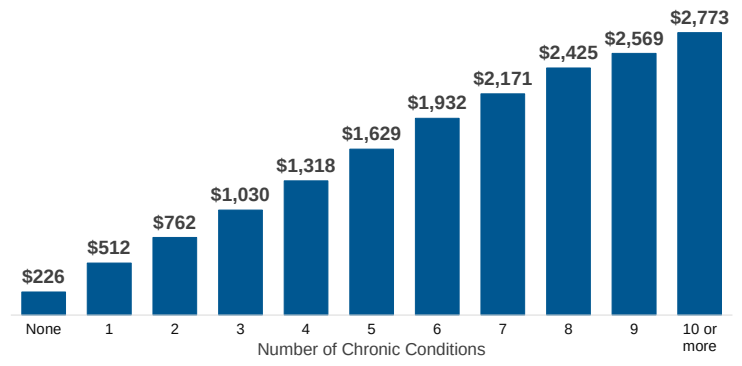
Note: All differences shown are risk adjusted using a model similar to the CMS HCC Risk Adjustment Model.
Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

The difference in average, adjusted 2015 traditional Medicare spending between beneficiaries who subsequently enrolled in Medicare Advantage versus those who remained in traditional Medicare increases with the number of chronic conditions, rising from $226 among those with no chronic conditions to $1,629 or more among beneficiaries with 5 or more chronic conditions (Figure 5). This finding suggests that potential overpayments may be largest for the Medicare Advantage plans that are serving the sickest beneficiaries.

Figure 5

Potential overpayments for Medicare Advantage enrollees increased with the number of chronic conditions

Difference in Average Traditional Medicare Spending in 2015, Adjusted for Health Risk, By Number of Chronic Conditions:



Note: All differences shown are risk adjusted using a model similar to the CMS HCC Risk Adjustment Model.
Source: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

Differences in Medicare Spending, by County

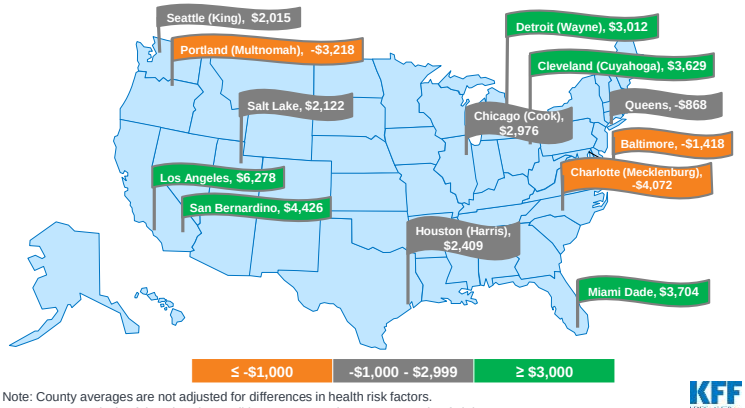
In this section, we looked at whether the observed differences in spending and service use persist across markets, and the extent to which differences may vary from one market to another. We compared average spending in 2015 among beneficiaries who switched to Medicare Advantage in 2016 versus those who remained in traditional Medicare, without adjusting for other factors. We were not able to replicate the analysis by county with the adjustment for risk factors, such as health conditions and demographics, due to sample size constraints. For this analysis, we looked at 20 relatively large markets that vary geographically, and vary by Medicare Advantage penetration and payment quartiles.

Among large, urban counties, the differences in spending between Medicare Advantage enrollees and beneficiaries in traditional Medicare varied greatly across the country (Figure 6; Table 3). In some counties, such as Los Angeles, CA, San Bernardino, CA, Wayne, MI (Detroit), and Cuyahoga, OH (Cleveland), beneficiaries who enrolled in Medicare Advantage plans in 2016 had significantly lower traditional Medicare spending in 2015 (≥$3,000 lower) than beneficiaries in the county who remained in traditional Medicare in 2016.

Figure 6

The average difference in traditional Medicare spending in 2015 for beneficiaries who switched to Medicare Advantage versus stayed in traditional Medicare in 2016 varied greatly across the country

Average difference in spending, by city (county):



Note: County averages are not adjusted for differences in health risk factors.
Source: KFF analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

In other counties, such as Allegheny, PA (Pittsburgh), Baltimore City, MD, Mecklenburg, NC (Charlotte), Erie, NY (Buffalo), and Multnomah, OR (Portland) beneficiaries who enrolled in Medicare Advantage plans in 2016 had higher prior year traditional Medicare spending (≤-$1,000) than beneficiaries in the county who remained in traditional Medicare in 2016. These differences across counties suggest that the selection bias into Medicare Advantage may vary across markets.

Discussion

This analysis examines whether beneficiaries who choose to enroll in Medicare Advantage plans have lower spending and use fewer services – before enrolling in Medicare Advantage – than similar people in traditional Medicare. The study found that beneficiaries who chose to enroll in a Medicare Advantage plan in 2016 had average expenditures in traditional Medicare (in 2015) that were $1,253 less, on average, than similar beneficiaries who remained in traditional Medicare. Similar differences in spending were found across all demographics and chronic conditions, even after adjusting for health risk factors. The results suggest that favorable self-selection into Medicare Advantage plans is occurring, even among traditional Medicare beneficiaries with similar health conditions. The findings raise questions as to why beneficiaries who are higher utilizers are less likely to go into Medicare Advantage and instead remain in traditional Medicare.

Other studies have examined services used by people while they were enrolled in Medicare Advantage plans, based on limited data, and have generally found that beneficiaries in Medicare Advantage plans use fewer services than those in traditional Medicare.[9,10,11] Notably, the authors of these studies almost universally attribute differences in service utilization to care management by the plans – rather than to pre-existing differences in care seeking behavior and use of health services. This study suggests that differences in health care use, and spending, are evident before beneficiaries decided to enroll in Medicare Advantage plans or remain in traditional Medicare, raising questions about the extent to which plans are actually lowering spending or managing care.

It is not clear whether the differences in spending observed in this study increase, decrease, or persist over time as beneficiaries age, which has implications for whether a similar difference in spending could be assumed for all Medicare Advantage enrollees.[12] Likewise, it is not clear how this difference in spending will change as the share of counties with the majority of beneficiaries in Medicare Advantage plans grows. This missing information could have important implications for Medicare spending. Potential overpayments could amount to billions in excess Medicare spending over a ten-year period if the observed differences in spending hold up as beneficiaries age and Medicare Advantage enrollment continues to rise. To illustrate, if the difference in average Medicare spending ($1,253) applied to just 10 percent of all Medicare Advantage enrollees in 2016, or 1.8 million enrollees, it would amount to more than $2 billion in excess spending in one year alone.

Policymakers could consider adjusting payments to reflect Medicare Advantage enrollees' prior use of health care services, which could lower total Medicare spending and in turn reduce Medicare Part B premiums and deductibles for all beneficiaries. With more than 20 million enrollees in Medicare Advantage plans and Medicare payments to plans projected to reach $250 billion in 2019, the stakes are high for making payments to plans as accurate as possible.[13,14]

Gretchen Jacobson and Tricia Neuman are with the Kaiser Family Foundation. Anthony Damico is an independent consultant.

This paper benefitted from the methodological expertise of Bianca Frogner at the University of Washington.

Methods

This analysis focuses on beneficiaries in traditional Medicare who were enrolled in both Medicare Part A and Medicare Part B in 2015, examining average adjusted 2015 Medicare Part A and B spending for these beneficiaries, based on their 2016 enrollment in Medicare Advantage plans or traditional Medicare. Beneficiaries who enrolled in Medicare Advantage plans at any point during the 2016 calendar year were categorized as Medicare Advantage enrollees.

To conduct this analysis, we excluded beneficiaries who: (1) became Medicare beneficiaries after 2013 or were not in traditional Medicare with both Part A and Part B in 2013, 2014, and 2015 (5.8 million people) because three years of claims data were required for each person to collect sufficient information about chronic conditions; (2) died prior to January 2016 (1.5 million people) because they would not have had the same opportunity to enroll in Medicare Advantage as other beneficiaries; (3) had end-stage renal disease in 2015 or 2016 (290 thousand people) because the vast majority were not eligible to enroll in a Medicare Advantage plan in 2016; (4) were unlikely to have actively selected (and instead may have been passively enrolled in) a Medicare Advantage plan, including beneficiaries who enrolled in Medicare-Medicaid Plans (MMPs) and employer group health plans (183 thousand people); (5) lived in Puerto Rico and other territories because some elements in the Medicare claims data are not as reliable or accurate for these beneficiaries; (6) enrolled in cost, Medical Savings Account (MSA), or PACE plans in 2016 (21 thousand people) because these plans are paid differently than Medicare Advantage plans; and (7) enrolled in a Special Needs Plan for people with specified chronic conditions (C-SNP; 13 thousand people) because the design of these plans may disproportionately attract healthier people with chronic conditions. When we relaxed the first inclusion requirement, for beneficiaries to be in traditional Medicare with both Part A and Part B in 2013, 2014, and 2015, and instead only required included beneficiaries to be in traditional Medicare with Part A and B in 2014 and 2015, the findings did not materially change, with the adjusted percent difference in spending remaining 13%. Similarly, when we included people in C-SNPs, the adjusted percent difference in spending did not change. In total, the primary analysis included 24 million beneficiaries who were in traditional Medicare in 2015.

The brief uses claims data from a five percent sample of Medicare beneficiaries from the Master Beneficiary Summary Files of CMS's Chronic Conditions Data Warehouse for 2013 through 2016. The analysis first examined the bivariate differences in spending and use of services by demographics, chronic conditions, and other factors. To control for differences in health status and other factors that could account for the difference in Medicare spending, a multivariate generalized linear log link model with a gamma distribution was developed that mimics as closely as possible the CMS-HCC Risk Adjustment Model, which is used to risk-adjust payments to Medicare Advantage plans. The model for this study includes the same structure of the demographic variables and interaction terms as the HCC Risk Adjustment Model. This study's model also includes the only available (although imperfect) variable to indicate whether someone who used a Part D covered drug was residing in a long-term care facility at any point during the year; this approach misses information about institutional residency status for the people who do not take drugs covered under Part D.

This study examined bivariate differences in traditional Medicare spending across counties, for those county residents who enrolled in Medicare Advantage compared to those who did not. The data used in the study did not include a sufficient number of people to adjust these county-level values for health risk factors. Future studies could examine whether the observed bivariate differences across counties hold, after adjusting for health risk factors.

The model used in this analysis does not include the HCCs in the Risk Adjustment Model that are not recorded as chronic conditions in the Chronic Conditions Data Warehouse, the majority of which are HCCs for acute or relatively rare conditions. The margins command, with values as observed, was used to generate the adjusted spending values. Alternative models for this analysis also included as covariates the per capita traditional Medicare spending for each county, beneficiaries' race/ethnicity as defined by the RTI race variable, and additional chronic conditions, with no meaningful change in the results. We also looked at the sensitivity of the findings to the inclusion criteria; when we included beneficiaries who were in traditional Medicare with Part A and B in 2014 and 2015 but either were not in traditional Medicare or did not have both Part A and Part B in 2013, the findings did not materially change, with the risk adjusted difference in spending rising from $1,253 to $1,298.

Endnotes

[1] Medicare Payment Advisory Commission, “Medicare Advantage encounter data,” Presentation to Commissioners, March 7, 2019. Available at: http://www.medpac.gov/docs/default-source/default-document-library/ma-encounter-data-march-2019.pdf

[2] Neuman, Patricia and Gretchen Jacobson. “Medicare Advantage Checkup” New England Journal of Medicine 2018; 379: 2163-2172 Available at: https://www.nejm.org/doi/full/10.1056/NEJMhpr1804089

[3] Medicare Payment Advisory Commission, “Improving risk adjustment in the Medicare program,” June 2014. Available at: http://www.medpac.gov/docs/default-source/reports/jun14_ch02.pdf

[4] Newhouse, Joseph P., J. Michael McWilliams, Mary Price, et al., “Do Medicare Advantage Plans Select Enrollees in Higher Margin Clinical Categories?” Journal of Health Economics. 2013 December; 32(6)

[5] Newhouse, Joseph P., Mary Price, J. Michael McWilliams, et al., “How Much Favorable Selection is Left In Medicare Advantage?” American Journal of Health Economics. 2015 1(1):1-26

[6] McWilliams, J. Michael, John Hsu, and Joseph P. Newhouse, “New Risk-Adjustment System Was Associated With Reduced Favorable Selection In Medicare Advantage,” 2011. Vol. 31, no. 12.

[7] We examined health care service utilization in 2015 among beneficiaries who switched to Medicare Advantage in 2016 vs. those who remained in traditional Medicare. As might be expected based on the finding of lower average spending, we found lower rates of utilization among those who switched to Medicare Advantage. The difference in percent of beneficiaries using services, was largest for Part B drugs, evaluation and management, imaging, tests, and physician visits, respectively. Among beneficiaries who used the specific services, the quantities used were not appreciably different. This analysis was conducted at the bivariate level.

[8] Kaiser Family Foundation, “Medicare Advantage 2019 Spotlight: First Look,” October 2019. Available at: https://www.kff.org/report-section/medicare-advantage-2019-spotlight-first-look-tables/

[9] Raetzman, Susan O., Anika L. Hines, Marguerite L. Barrett, and Zeynal Karaca, “Hospital Stays in Medicare Advantage Plans Versus the Traditional Fee-for-Service Program, 2013,” HCUP Statistical Brief #198. December 2015. Agency for Healthcare Research and Quality, Rockville, MD. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb198-Hospital-Stays-Medicare-Advantage-Versus-Traditional-Medicare.pdf.

[10] Landon, Bruce E., Alan M. Zaslavsky, Robert C. Saunders, et al., “Utilization of Services in Medicare Advantage versus Traditional Medicare since the Passage of the Medicare Modernization Act,” Health Affairs. 2012; 31(12): 2609-2617.

[11] Ayanian, John Z., Landon, Bruce E., Newhouse, Joseph P. et. al. “Analysis of Medicare Advantage HMOs Compared with Traditional Medicare Shows Lower Use of Many Services During 2003-09.” Health Affairs, 31, 12 (December 2012): 1-9.

[12] A recent study found that death rates were initially lower among beneficiaries who enrolled in Medicare Advantage than those who stayed in traditional Medicare but the rates began to converge over time, raising questions about the differences in case mix between traditional Medicare and Medicare Advantage, and how potential overpayments would change over time. See Newhouse, Joseph P., Mary Price, J. Michael McWilliams, et al., “Adjusted Mortality Rates Are Lower For Medicare Advantage Than Traditional Medicare, But The Rates Converge Over Time,” Health Affairs, 38, 4 (April 2019).

[13] Congressional Budget Office, “Medicare Baseline,” April 2018. Available at: https://www.cbo.gov/system/files?file=2018-06/51302-2018-04-medicare.pdf

[14] Kaiser Family Foundation, “A Dozen Facts About Medicare Advantage,” November 2018. Available at: https://www.kff.org/medicare/issue-brief/a-dozen-facts-about-medicare-advantage/

Table 1. Average Traditional Medicare Spending in 2015 for Beneficiaries who Switched to Medicare Advantage Or Stayed in Traditional Medicare in 2016, After Adjusting for Health Risk Factors					
Characteristics in 2015	People who stayed in TM in 2016		People who switched to MA in 2016		Difference in spending, 2015
	Number of people	Average Part A & B spending, 2015	Number of people	Average Part A & B spending, 2015	
Overall	23,714,780	$9,362	443,240	$8,109	$1,253
Age					
Under 35	314,880	$8,631	8,220	$7,476	$1,155
35-44	527,740	$8,778	15,020	$7,603	$1,175
45-54	1,030,820	$8,549	36,140	$7,405	$1,144
55-59	801,600	$8,362	31,180	$7,243	$1,119
60-64	904,460	$8,108	41,120	$7,023	$1,085
65-69	3,360,240	$8,365	79,480	$7,246	$1,119
70-74	5,598,560	$9,229	96,280	$7,994	$1,235
75-79	4,341,380	$9,592	63,060	$8,309	$1,284
80-84	3,175,960	$9,687	37,900	$8,391	$1,296
85-89	2,218,880	$9,819	21,260	$8,505	$1,314
90-94	1,089,460	$10,235	10,340	$8,865	$1,370
95 and older	350,800	$11,409	3,240	$9,883	$1,527
Dual eligibility					
Non-dual eligible	19,132,740	$9,779	281,300	$8,471	$1,309
Partial dual eligible	1,257,160	$8,536	61,580	$7,394	$1,142
Full dual eligible	3,324,880	$8,681	100,360	$7,520	$1,162
Original reason for eligibility					
Disabled	5,757,400	$9,234	190,840	$7,999	$1,236
Aged	17,957,380	$9,471	252,400	$8,204	$1,267
Gender					
Female	13,211,740	$9,320	240,420	$8,073	$1,247
Male	10,503,040	$9,500	202,820	$8,229	$1,271
Institutional status					
Community resident	13,363,540	$9,684	267,420	$8,388	$1,296
Institutional resident	1,205,040	$13,638	21,880	$11,813	$1,825
Unknown	9,146,200	$7,559	153,940	$6,548	$1,011
Chronic conditions					
Anemia	5,212,220	$11,148	86,360	$9,657	$1,492
Rheumatoid arthritis	7,987,660	$10,244	136,800	$8,873	$1,371
Asthma	2,077,200	$10,534	42,740	$9,125	$1,410
Atrial fibrillation	2,160,960	$10,096	24,240	$8,745	$1,351
Breast or prostate cancer	1,581,540	$12,274	18,920	$10,757	$1,517
COPD	2,767,340	$10,103	54,960	$8,751	$1,352
Congestive heart failure	3,199,460	$8,884	51,220	$7,695	$1,189
Depressive disorders	6,273,440	$9,985	139,940	$8,787	$1,198
Diabetes	6,592,380	$8,013	136,920	$6,941	$1,072
Epilepsy	594,560	$9,403	13,180	$8,145	$1,258
Hypothyroidism	3,865,660	$8,540	57,540	$7,398	$1,143
Ischemic heart disease	6,792,700	$9,314	107,780	$8,068	$1,246
Kidney disease	4,279,460	$9,414	73,760	$8,154	$1,260
Liver disease	790,800	$11,631	17,040	$10,074	$1,556
Mobility impairments	577,820	$12,766	11,120	$11,058	$1,708
Obesity	2,942,860	$9,687	69,620	$8,503	$1,184
Peripheral vascular disease	2,888,480	$9,219	47,420	$7,985	$1,234
Pressure ulcers	993,360	$12,827	16,060	$11,110	$1,716

Schizophrenia	452,120	$10,686	13,840	$9,256	$1,430
Stroke/TIA	907,500	$11,935	15,180	$10,338	$1,597
No. of chronic conditions					
0	4,513,760	$1,687	93,200	$1,461	$226
1	4,483,440	$3,823	82,120	$3,311	$512
2	4,105,140	$5,694	74,140	$4,932	$762
3	3,225,380	$7,701	59,420	$6,670	$1,030
4	2,357,580	$9,846	44,160	$8,529	$1,318
5	1,666,820	$12,173	29,760	$10,544	$1,629
6	1,164,460	$14,436	20,940	$12,504	$1,932
7	801,800	$16,222	14,660	$14,052	$2,171
8	544,880	$18,120	10,040	$15,696	$2,425
9	357,240	$19,197	6,080	$16,628	$2,569
10 or more	494,280	$20,725	8,720	$17,952	$2,773

NOTE: All values shown were risk adjusted using a model similar to the CMS HCC Risk Adjustment Model. Excludes beneficiaries in Puerto Rico and those who enrolled in cost, Medicare Medical Savings Account (MSA), PACE plans, Medicare-Medicaid Plans (MMPs) and employer group health plans. Excludes beneficiaries with end-stage renal disease. Excludes people who died before the end of 2015. Excludes people not enrolled in Medicare prior to 2013. TM is traditional Medicare. MA is Medicare Advantage. Only chronic conditions with at least 10,000 people switching to Medicare Advantage are shown in table.
SOURCE: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

Table 2. Results from Multivariate Regression of Traditional Medicare Spending in 2015 for Beneficiaries who Switched to Medicare Advantage Or Stayed in Traditional Medicare in 2016, Adjusting for Risk Factors Included in the CMS HCC-Risk Adjustment Model		
Coefficients	**Estimate**	**Std. Error**
Intercept	7.109633	0.009402
Switching	-0.143651	0.0142682
Gender: Male	referent category	
Female	-0.0110686	0.0117174
Age 0-34	-0.0712961	0.025248
35-44	-0.0163406	0.021451
45-54	-0.0408814	0.0170427
55-59	-0.06427	0.0179617
60-64	-0.0190008	0.017056
65-69	referent category	
70-74	0.0873604	0.0095115
75-79	0.1411297	0.0101946
80-84	0.1577402	0.0112485
85-89	0.1494632	0.0130799
90-94	0.1666209	0.018159
95+	0.3183193	0.0344025
Dual eligibility: Non-duals	referent category	
Partial duals	-0.1038725	0.0282699
Full duals	-0.1306216	0.0198355
Community residents	referent category	
Institutional residents	0.4165534	0.0333449
Missing residency status	-0.2392473	0.0071132
Original reason for entitlement: Aged	referent category	
Disabled	-0.0033169	0.0138178
Chronic conditions/HCC codes		
Acute MI	0.810567	0.0252134
Anemia	0.3412536	0.0120288
Asthma	0.1515625	0.0151335
Atrial fibrillation	0.1202888	0.0153342
Blindness	0.1981732	0.0244406
Brain injury	0.2645299	0.0313467
Breast or Prostate cancer	0.2771732	0.0132984
Cerebral palsy	-0.0489468	0.033602
Chronic kidney disease	0.154923	0.0152935
Colorectal cancer	0.4436472	0.0204056
Congestive heart failure	-0.0452462	0.05673
COPD	0.2339984	0.0398189
Cystic fibrosis	0.034797	0.0282677
Depressive disorders	0.0929828	0.0119425
Diabetes	-0.1646257	0.0151394
Endometrial cancer	0.4495853	0.0356021
Epilepsy	0.2226373	0.0456154
Hepatitis	0.1817627	0.0225243
Hip/Pelvic fracture	0.9409028	0.0247483
HIV/AIDS	0.0927405	0.0346999
Hypothyroidism	-0.1240166	0.0120557
Ischemic heart disease	-0.0107028	0.0119693
Leukemia	0.5217791	0.0189631
Liver disease	0.2347011	0.0150768
Lung cancer	0.6364471	0.0232583
Mobility impairments	0.3394306	0.0170233
Multiple sclerosis	0.4343622	0.0308529
Muscular dystrophy	0.7138206	0.0798967
Obesity	0.0173455	0.0123963
Peripheral vascular disease	-0.0216004	0.0124903
Personality disorders	0.1777524	0.02434
Pressure ulcers	0.485386	0.0206655
PTSD	0.0428833	0.0225038

Rheumatoid arthritis	0.1957197	0.0116852
Schizophrenia	0.1277205	0.0207238
Spina bifida	0.2069589	0.0493435
Spinal cord injuries	0.4995232	0.0333971
Stroke/TIA	0.2737327	0.0149603
No. of chronic conditions - 0	referent category	
1	0.8182002	0.0126207
2	1.21658	0.0228322
3	1.518567	0.0335242
4	1.764325	0.0443301
5	1.976463	0.0551261
6	2.146921	0.0659209
7	2.263623	0.0766949
8	2.374266	0.0874716
9	2.431992	0.0983541
10 or more	2.508572	0.1192487
Interaction terms		
Gender and age: 0-34 x female	0.1451276	0.0377312
35-44 x female	0.0114095	0.0303987
45-54 x female	0.0155029	0.0239679
55-59 x female	0.0030464	0.0253859
60-64 x female	-0.0209732	0.0240343
70-74 x female	-0.0346688	0.0130251
75-79 x female	-0.0609598	0.0138234
80-84 x female	-0.0728437	0.0150058
85-89 x female	-0.034932	0.0169001
90-94 x female	0.0064602	0.0223403
95+ x female	-0.0674294	0.0395159
Dual eligibility and institutional status: Full duals x institutional resident	-0.1198834	0.0491795
Full duals x missing residency	-0.0315702	0.0433176
Partial duals x institutional resident	0.5107559	0.2224101
Partial duals x missing residency	-0.5571722	0.0537358
Dual eligibility, institutional status, and original reason for entitlement:	-0.1183059	0.0765971
Non-duals x institutional resident x disabled		
Non-duals x missing residency x disabled	-0.2336562	0.0162378
Full duals x community resident x disabled	0.1227525	0.0263483
Full duals x institutional resident x disabled	-0.1656144	0.0392149
Full duals x missing residency x disabled	-0.3121091	0.0477308
Partial duals x community resident x disabled	0.059407	0.0349008
Partial duals x institutional resident x disabled	-0.522261	0.2330442
Partial duals x missing residency x disabled	0.1359108	0.0591859
Dual eligibility, institutional status, original reason for entitlement, and gender:		
Non-duals x institutional resident x aged x female	-0.0360198	0.0387172
Non-duals x institutional resident x disabled x female	0.0632813	0.0972535
Non-duals x missing residency x aged x female	0.1022933	0.009524
Non-duals x missing residency x disabled x female	0.2030838	0.0219463
Full duals x community resident x aged x female	0.0253688	0.0238392
Full duals x community resident x disabled x female	-0.0109653	0.0235554
Full duals x institutional resident x aged x female	-0.0780793	0.036145
Full duals x institutional resident x disabled x female	-0.0157271	0.0325536
Full duals x missing residency x aged x female	0.291827	0.0494258
Full duals x missing residency x disabled x female	0.1634248	0.0433238
Partial duals x community resident x aged x female	-0.0641133	0.0335277
Partial duals x community resident x disabled x female	-0.0105862	0.028095
Partial duals x institutional resident x aged x female	-0.37536	0.2447585
Partial duals x institutional resident x disabled x female	-0.0201749	0.123955
Partial duals x missing residency x aged x female	0.4419479	0.0623898
Partial duals x missing residency x disabled x female	0.3076511	0.0604882
Original reason for entitlement, CHF:	-0.1078823	0.0139239
Aged x CHF		
Original reason for entitlement, Disabled x pressure ulcers:	0.321468	0.0158037
Original reason for entitlement, Aged x pressure ulcers	0.485386	0.0206655
Original reason for entitlement, Aged x multiple sclerosis:	-0.235861	0.0597826
Aged x multiple sclerosis		

No Congestive heart failure x diabetes	-0.3146191	0.0121283
Congestive heart failure x No diabetes	0.1646257	0.0151394
No Congestive heart failure x (asthma or COPD or cystic fibrosis)	-0.039098	0.0152652
Congestive heart failure x No (asthma or COPD or cystic fibrosis)	-0.0093765	0.0194537
No Congestive heart failure x chronic kidney disease	-0.0777502	0.0128155
No Congestive heart failure x atrial fibrillation	0.0852685	0.0142362
Congestive heart failure x No atrial fibrillation	-0.1202888	0.0153342
Schizophrenia x congestive heart failure	0.1068341	0.0439697
No Schizophrenia x COPD	0.1029918	0.0169278
Schizophrenia x No COPD	0.1277205	0.0207238
Schizophrenia x COPD	0.3617188	0.0429217
Schizophrenia x epilepsy	-0.1311777	0.0462925

NOTE: One dollar was added to all spending values to remove zeros. Other regressions included additional chronic conditions, county-level average traditional Medicare spending, and beneficiaries' race/ethnicity with no meaningful change in results.
SOURCE: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

Table 3. Average Traditional Medicare Spending in 2015, Unadjusted for Health Risk Factors, for Beneficiaries who Switched to Medicare Advantage Or Stayed in Traditional Medicare in 2016, In Selected Counties

County (Largest city in the county)	People who stayed in TM in 2016		People who switched to MA in 2016		Difference in spending (unadjusted)	Percentage difference in spending, 2015
	Number of people	Average Part A & B spending, 2015	Number of people	Average Part A & B spending, 2015		
Allegheny, Pennsylvania (Pittsburgh)	45,820	$9,358	1,440	$11,464	($2,105)	-22%
Baltimore City, Maryland	51,900	$13,413	1,140	$14,831	($1,418)	-11%
Bexar, Texas (San Antonio)	87,360	$8,427	1,720	$7,957	$471	6%
Clark, Nevada (Las Vegas)	104,260	$9,323	3,180	$7,294	$2,029	22%
Cook, Illinois (Chicago)	339,340	$9,629	6,040	$6,653	$2,976	31%
Cuyahoga, Ohio (Cleveland)	80,740	$8,941	2,160	$5,312	$3,629	41%
Erie, New York (Buffalo)	43,720	$7,992	1,300	$9,489	($1,498)	-19%
Fulton, Georgia (Atlanta)	39,480	$7,930	1,660	$6,903	$1,027	13%
Harris, Texas (Houston)	157,860	$10,134	5,040	$7,725	$2,409	24%
King, Washington (Seattle)	113,020	$8,044	2,820	$6,029	$2,015	25%
Los Angeles, California	322,160	$11,719	5,300	$5,440	$6,278	54%
Marion, Indiana (Indianapolis)	65,580	$9,084	2,720	$9,597	($513)	-6%
Mecklenburg, North Carolina (Charlotte)	53,760	$7,835	1,560	$11,907	($4,072)	-52%
Miami Dade, Florida (Miami)	87,920	$12,523	4,940	$8,819	$3,704	30%
Milwaukee, Wisconsin	51,820	$9,217	2,320	$9,007	$210	2%
Multnomah, Oregon (Portland)	25,800	$9,216	1,080	$12,434	($3,218)	-35%
Queens, New York (New York City)	102,980	$11,460	3,880	$12,328	($868)	-8%
Salt Lake, Utah	41,720	$8,418	1,220	$6,296	$2,122	25%
San Bernardino, California	46,720	$9,576	1,440	$5,150	$4,426	46%
Wayne, Michigan (Detroit)	125,520	$11,272	1,600	$8,260	$3,012	27%

NOTE: Excludes beneficiaries in Puerto Rico and those who enrolled in cost, Medicare Medical Savings Account (MSA), PACE plans, Medicare-Medicaid Plans (MMPs) and employer group health plans. Excludes beneficiaries with end-stage renal disease. Excludes people who died before the end of 2015. Excludes people not enrolled in Medicare prior to 2013. TM is traditional Medicare. MA is Medicare Advantage.
SOURCE: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.

Table 4. Average Traditional Medicare Spending in 2015 for Beneficiaries who Switched to Medicare Advantage Or Stayed in Traditional Medicare in 2016, Unadjusted for Health Risk Factors						
Characteristics in 2015	People who stayed in TM in 2016		People who switched to MA in 2016		Difference in spending	Percentage difference in spending
	Number of people	Average Part A & B spending, 2015	Number of people	Average Part A & B spending, 2015		
Overall	**23,714,780**	**$8,859**	**443,240**	**$7,628**	**$1,231**	**14%**
Age						
Under 65	3,579,500	$8,431	131,680	$8,461	-$30	0%
65-69	3,360,240	$6,900	79,480	$6,084	$815	12%
70-74	5,598,560	$7,341	96,280	$5,915	$1,426	19%
75-79	4,341,380	$8,792	63,060	$7,469	$1,323	15%
80 and older	6,835,100	$11,327	72,740	$10,347	$980	9%
Dual eligibility						
Full dual eligible	3,324,880	$12,951	100,360	$12,310	$641	5%
Partial dual eligible	1,257,160	$9,220	61,580	$8,565	$654	7%
Non-dual eligible	19,132,740	$8,122	281,300	$5,788	$2,335	29%
Gender						
Female	13,211,740	$9,071	240,420	$8,185	$887	10%
Male	10,503,040	$8,588	202,820	$7,017	$1,572	18%
Chronic conditions						
Anemia	5,212,220	$20,958	86,360	$20,026	$932	4%
Rheumatoid Arthritis	7,987,660	$14,133	136,800	$12,960	$1,173	8%
Asthma	2,077,200	$22,438	42,740	$19,451	$2,986	13%
Atrial fibrillation	1,581,540	$15,181	18,920	$13,531	$1,650	11%
Breast or prostate cancer	2,160,960	$20,359	24,240	$20,502	-$143	-1%
COPD	3,199,460	$23,280	51,220	$22,306	$975	4%
Congestive heart failure	2,767,340	$21,551	54,960	$18,925	$2,626	12%
Depressive disorders	6,273,440	$15,846	139,940	$13,779	$2,067	13%
Diabetes	6,592,380	$12,749	136,920	$10,973	$1,776	14%
Epilepsy	4,279,460	$19,836	73,760	$18,556	$1,281	6%
Hypothyroidism	3,865,660	$13,668	57,540	$12,931	$737	5%
Ischemic heart disease	6,792,700	$15,853	107,780	$15,162	$691	4%
Kidney Disease	594,560	$20,993	13,180	$18,447	$2,547	12%
Liver disease	790,800	$21,789	17,040	$19,090	$2,699	12%
Mobility impairments	577,820	$32,279	11,120	$29,137	$3,142	10%
Obesity	2,942,860	$16,436	69,620	$14,545	$1,892	12%
Peripheral vascular disease	2,888,480	$19,606	47,420	$18,489	$1,118	6%
Pressure ulcers	452,120	$15,314	13,840	$15,335	-$21	0%
Schizophrenia	993,360	$31,390	16,060	$31,312	$78	0%
Stroke/TIA	907,500	$26,581	15,180	$25,888	$694	3%

NOTE: Values have not been adjusted for differences in health status and other risk factors. Excludes beneficiaries in Puerto Rico and those who enrolled in cost, Medicare Medical Savings Account (MSA), PACE plans, Medicare-Medicaid Plans (MMPs) and employer group health plans. Excludes beneficiaries with end-stage renal disease. Excludes people who died before the end of 2015. Excludes people not enrolled in Medicare prior to 2013. TM is traditional Medicare. MA is Medicare Advantage. Only chronic conditions with at least 10,000 people switching to Medicare Advantage are shown in table.
SOURCE: Kaiser Family Foundation analysis of the Chronic Conditions Data Warehouse 5% sample of claims, 2013-2016.