Black, Hispanic, and Asian American/Pacific Islander MA Beneficiaries Receive More Primary Care and Less Potentially Avoidable Care Than Similar Beneficiaries in Traditional Medicare

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Executive Summary

Black, Hispanic, and Asian American/Pacific Islander (AA/PI) Medicare Advantage (MA) enrollees received higher rates of most health screening and primary care services and lower rates of most inpatient potentially avoidable services studied, compared to similar beneficiaries enrolled in traditional fee-for-service (FFS) Medicare. Hispanic MA beneficiaries received cardiovascular and breast cancer screenings at rates 9% and 12% higher, respectively, than Hispanic FFS beneficiaries; while Black and AA/PI MA beneficiaries received these screenings at 4% to 6% higher rates than FFS beneficiaries. Colonoscopy rates were higher for Hispanic MA beneficiaries (+7%) and AA/PI beneficiaries (+4%) but equivalent for Black MA beneficiaries compared to FFS beneficiaries. Among primary care services, the difference was greatest for Black and Hispanic beneficiaries and smallest for AA/PI beneficiaries.

MA beneficiaries generally had lower rates of health services considered potentially avoidable than FFS beneficiaries, including for hospital readmissions (38% to 43% lower), potentially avoidable hospitalizations (6% to 12% lower), and nonemergent emergency department visits (6% to 10% lower). This study revealed some areas for potential improvement by MA plans: the rate of potentially avoidable hospitalizations for AA/PI MA beneficiaries was 6% above FFS, and Black MA beneficiaries had the same rate of nonemergent emergency department visits as FFS beneficiaries.

Introduction

Medicare beneficiaries have a choice between enrolling in Medicare Advantage (MA) or in fee-for-service (FFS) Medicare, often with supplemental coverage. This analysis compares MA and FFS Medicare beneficiaries with similar demographic characteristics and health conditions to understand the potential impact of MA enrollment on certain healthcare services for Black, Hispanic, and Asian American/Pacific Islander (AA/PI) Medicare beneficiaries; and considers implications for health outcomes and beneficiary experiences with Medicare coverage.

Past Research

Past studies have evaluated differences in healthcare and outcomes between Medicare beneficiaries by race and ethnicity. These studies often compare gaps between racial and ethnic groups within MA; for example, comparing the share of Black and White MA beneficiaries who received breast cancer screenings. Some studies compare these gaps between MA beneficiaries to gaps between beneficiaries in different racial or ethnic groups in FFS Medicare.[1]

Fewer studies compare gaps directly between MA and FFS beneficiaries in the same racial and ethnic groups. Often this is due to limited access to data that would allow researchers to directly compare MA and FFS beneficiaries, while also controlling for differences in health and demographics. Past studies have used samples of claims data from providers or health plans. Other studies use data sources that include all Medicare beneficiaries, like MEDPAR or MBSF, but that do not include complete healthcare utilization data. Direct comparisons of MA and FFS have been limited by incompleteness in the MA encounter data; however, the encounter data continues to become more complete for services included in this study.[2]
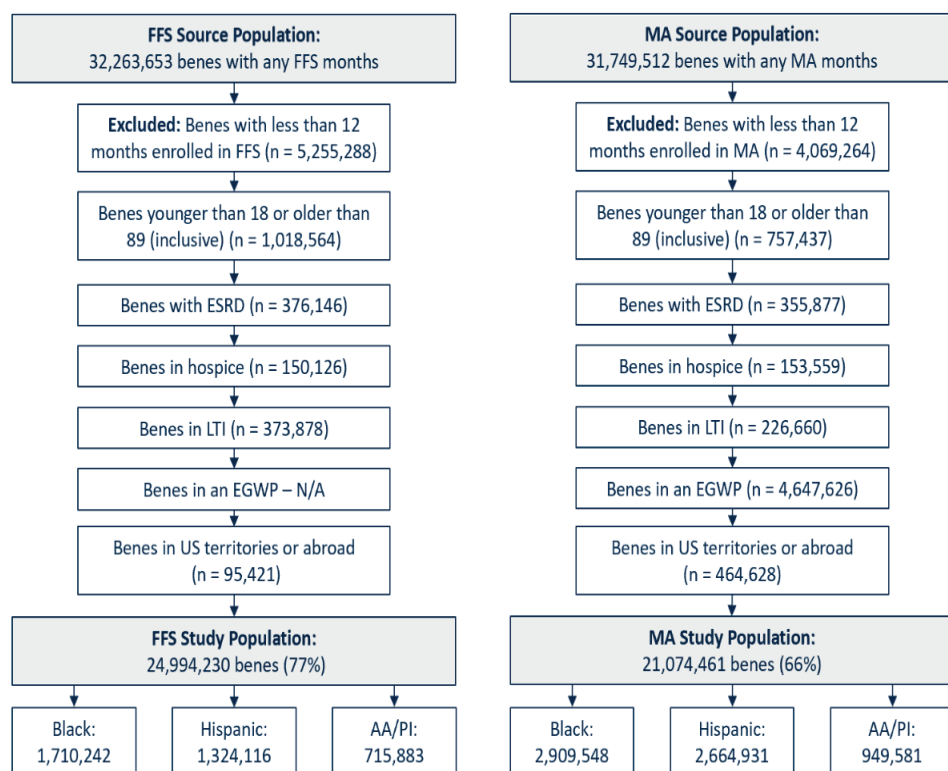
Study Data and Methods

Data and Beneficiary Population

BRG used 100% MA encounter and FFS claims data accessed through a data use agreement with the Centers for Medicare & Medicaid Services (CMS) for calendar year 2022. CMS data used in this study contains beneficiary-level demographic information and claims-level records for all MA and FFS beneficiaries. A complete list of data sources is in Appendix 2.

BRG applied a standard set of exclusions to the MA and FFS populations, excluding Medicare beneficiaries with less than twelve months enrollment in MA or FFS, beneficiaries younger than 18 or older than 89, beneficiaries with end-stage renal disease (ESRD) or considered long-term institutionalized, beneficiaries with hospice claims during the year, and MA beneficiaries in an employer-group waiver plan. Beneficiaries living in US territories or abroad were also excluded. Figure 1 includes counts of excluded beneficiaries and final study population counts.

Figure 1. Exclusions Applied to FFS and MA Source Populations

FFS Source Population: 32,263,653 benes with any FFS months			**MA Source Population:** 31,749,512 benes with any MA months		
Excluded: Benes with less than 12 months enrolled in FFS (n = 5,255,288)			**Excluded:** Benes with less than 12 months enrolled in MA (n = 4,069,264)		
Benes younger than 18 or older than 89 (inclusive) (n = 1,018,564)			Benes younger than 18 or older than 89 (inclusive) (n = 757,437)		
Benes with ESRD (n = 376,146)			Benes with ESRD (n = 355,877)		
Benes in hospice (n = 150,126)			Benes in hospice (n = 153,559)		
Benes in LTI (n = 373,878)			Benes in LTI (n = 226,660)		
Benes in an EGWP – N/A			Benes in an EGWP (n = 4,647,626)		
Benes in US territories or abroad (n = 95,421)			Benes in US territories or abroad (n = 464,628)		
FFS Study Population: 24,994,230 benes (77%)			**MA Study Population:** 21,074,461 benes (66%)		
Black: 1,710,242	Hispanic: 1,324,116	AA/PI: 715,883	Black: 2,909,548	Hispanic: 2,664,931	AA/PI: 949,581

To understand whether MA plan type affects utilization, BRG segmented each race/ethnicity group by MA plan type enrollment. MA beneficiaries were segmented by enrollment in a health maintenance organization (HMO), preferred provider organization (PPO: local and regional), and special needs plan (SNP: chronic, institutional, dual, and Medicare-Medicaid plans (MMPs)). Race/ethnicity groups were defined using the Medicare beneficiary race code that is modified using an algorithm produced by RTI.

Limitations of RTI Race Variable

This study uses a common variable to segment beneficiaries by race/ethnicity, included in CMS's beneficiary-level data and able to be linked to claims and encounter data. However, numerous studies have found flaws in the accuracy of the race variable, especially compared to self-reported data. Beneficiaries identified as non-Black minority groups by the Research Triangle Institute (RTI) race variable often self-report as White. The variable also fails to identify some beneficiaries as their self-reported non-White race. For example, the US Department of Health and Human Services, Office of Inspector General found that 28% of beneficiaries identified as Hispanic and 17% of beneficiaries identified as AA/PI self-reported as a different race. Finally, merging AA and PI into a single variable fails to capture meaningful differences between these populations. The RTI race variable is widely used in research given its availability in Medicare administrative data, but efforts should be made to improve its accuracy and validity.

Samples for Analysis

MA beneficiaries were segmented by plan type and matched to FFS beneficiaries using propensity score matching (PSM).[3] In addition to exact match on race/ethnicity, other matching characteristics include CMS Conditions Data Warehouse (CCW) chronic condition count (0–1, 2–3, 4–5, 6+) and individual chronic conditions (cancer, cardiac, endocrine and renal, mental health, musculoskeletal, neurological, and respiratory) based on CMS's CCW Chronic Condition Flags, dual eligibility, sex, age, length of continuous enrollment (one to three years), and level of urbanity in county of residence. Separate PSM was performed for each race/ethnicity and plan type group. Post-match covariate balance was assessed using standardized mean difference (SMD). SMDs for all covariates were less than 0.1. PSM can limit the impact of confounding variables and selection bias on the estimated treatment effect and has been used in past studies of FFS and MA beneficiaries. Appendix 3 includes descriptive statistics for covariates and SMDs, and Figure 2 includes total beneficiary counts before and after matching. The beneficiary count in each MA plan type is equal to the matched FFS beneficiary group.

Figure 2. Medicare Beneficiaries in Study Population by Race/Ethnicity, MA Plan Type, 2022 (millions)
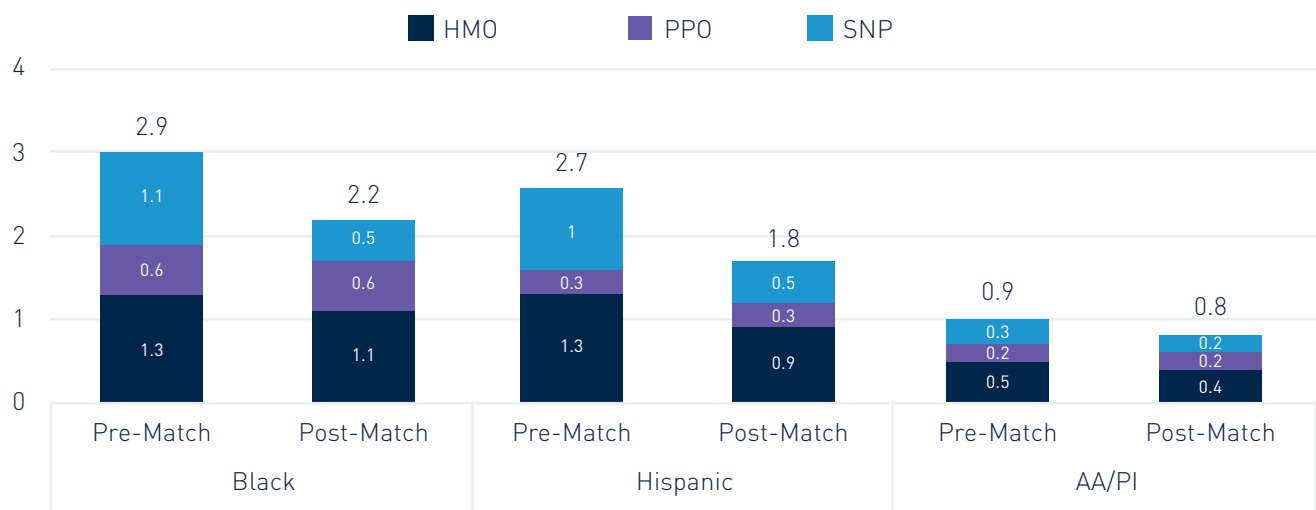
Utilization Metrics

BRG analyzed healthcare services utilization metrics that are widely used and the directionality of the measure is clear. For example, a higher share of beneficiaries with health screenings is positive, and a lower share of beneficiaries with potentially avoidable care is positive. We list utilization measures analyzed in Table 1 with more detailed specifications in Appendix 4.

Table 1. Utilization Metrics	
Category	**Utilization Metrics**
Screening	Recommended beneficiaries per 1,000 with colonoscopy screening
	Recommended beneficiaries per 1,000 with breast cancer screening
	Beneficiaries per 1,000 with cardiovascular screening
Primary Care	Beneficiaries per 1,000 with an Annual Wellness Visit or Initial Preventive Physical Exam ("Welcome to Medicare" visit)
	Beneficiaries per 1,000 with a primary care visit
	% of primary care visits out of total visits
	Beneficiaries per 1,000 with an inpatient hospitalization who had a primary care visit within 7 and 30 days of discharge
Potentially Avoidable Care	Beneficiaries per 1,000 with 30-day hospital readmission
	Beneficiaries per 1,000 with Potentially Avoidable Hospitalization
	Beneficiaries per 1,000 with a non-emergent visit to the emergency department

Primary care and screening measures may be positively influenced by enrollment in an MA plan that can make services more accessible to beneficiaries through telehealth, transportation benefits, or reduced cost sharing. On the other hand, utilization management techniques employed by MA plans may hinder access to care. Potentially avoidable healthcare services may also benefit from MA care coordination and outpatient follow-up. All results presented are statistically significant at the p<0.05 level unless otherwise noted.

Study Results

Screenings

In each of the three race/ethnicity groups included in this study, MA beneficiaries received health screenings at a higher rate than FFS beneficiaries. The biggest difference was for cardiovascular screening, the smallest for colonoscopies.

Cardiovascular screenings help to identify risk factors for heart disease and stroke and include blood tests for cholesterol, lipid, and triglyceride levels. Hispanic MA beneficiaries received cardiovascular screenings at 715 per thousand, 9% higher than among FFS beneficiaries, while 675 Black MA beneficiaries per thousand and 764 AA/PI MA beneficiaries per thousand received cardiovascular screenings, 6% and 5% higher than FFS beneficiaries, respectively (Figure 3).

Women aged 50 to 74[4] at average risk for breast cancer are recommended for mammograms every two years to screen for breast cancer. A higher rate of MA beneficiaries per thousand in each race/ethnicity group received these screenings. Hispanic MA beneficiaries had a breast cancer screening at 447 per thousand, 12% higher than FFS beneficiaries, while 497 Black beneficiaries per thousand and 433 AA/PI MA beneficiaries per thousand had screenings, 5% and 4% higher than the respective FFS beneficiaries (Figure 3).

The share of recommended beneficiaries aged 50 to 75[5] who received a colonoscopy to screen for colorectal cancer was similar between MA and FFS, and the difference was not statistically significant for Black beneficiaries. Hispanic MA beneficiaries received a colonoscopy at 59 per thousand, 7% higher than FFS beneficiaries, while 66 AA/PI MA beneficiaries received a screening (4% higher).

Figure 3. Rate of MA Beneficiaries with Health Screenings Higher than FFS in Each Race/Ethnicity Cohort
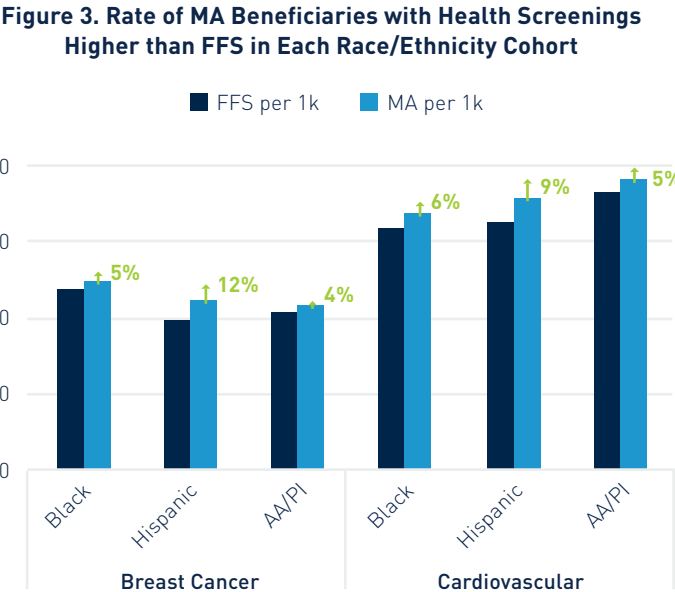
Primary Care

Medicare covers a "Welcome to Medicare" visit (initial preventive physical exam or IPPE) within twelve months of Part B eligibility and an Annual Wellness Visit (AWV) in subsequent years. These may be used similarly to a routine physical examination, which is not covered by Medicare, but also include review of medical and social health history as well as personalized care plans. Black, Hispanic, and AA/PI beneficiaries in MA plans receive AWV/IPPEs at higher rates than their FFS counterparts: 19% higher for Black MA beneficiaries, 21% higher for Hispanic MA beneficiaries, and 9% higher for AA/PI MA beneficiaries (Figure 4).

Primary care providers typically bill a set of evaluation and management (E&M) codes. The share of Black, Hispanic, and AA/PI MA beneficiaries with an E&M visit during the year was slightly higher than FFS beneficiaries. Hispanic MA beneficiaries had the largest difference with a rate of E&M visits 4% higher than Hispanic FFS beneficiaries. The differences for Black and AA/PI MA beneficiaries were smaller, at 2% and 1%, respectively (Figure 4).

In addition, a higher share of MA beneficiaries' total healthcare visits were with primary care providers (PCPs) rather than specialists. The share of visits with PCPs out of total visits with any provider was higher for Black, Hispanic, and AA/PI MA beneficiaries: visits with PCPs were 6 to 7 points higher among MA beneficiaries compared to FFS beneficiaries (Figure 5).

Finally, MA beneficiaries saw a provider for primary care services within seven and thirty days of discharge from the hospital at a higher rate than FFS beneficiaries. Black and Hispanic MA beneficiaries had an E&M visit within seven days of hospitalization at rates 41% and 35% higher than FFS beneficiaries, respectively, and 15% and 13% higher for E&M visits within thirty days of hospitalization. The differences were smaller for AA/PI MA beneficiaries who were more likely to have an E&M visit within seven days (29% higher than FFS beneficiaries) and within thirty days (9% higher) (Chart 5).
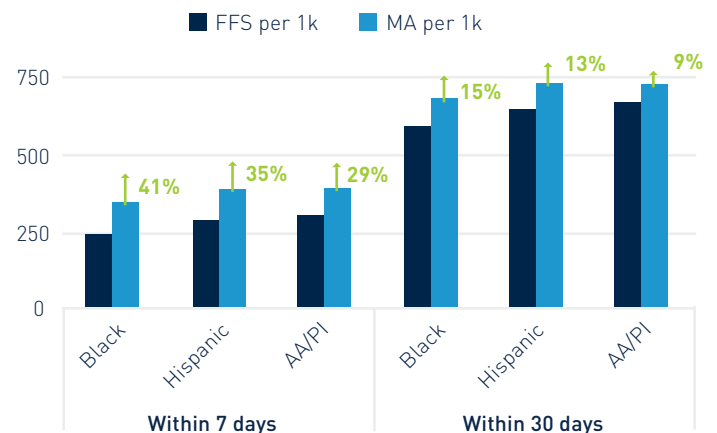
Figure 4. Rate of MA Beneficiaries with Primary Care Visits Higher than FFS
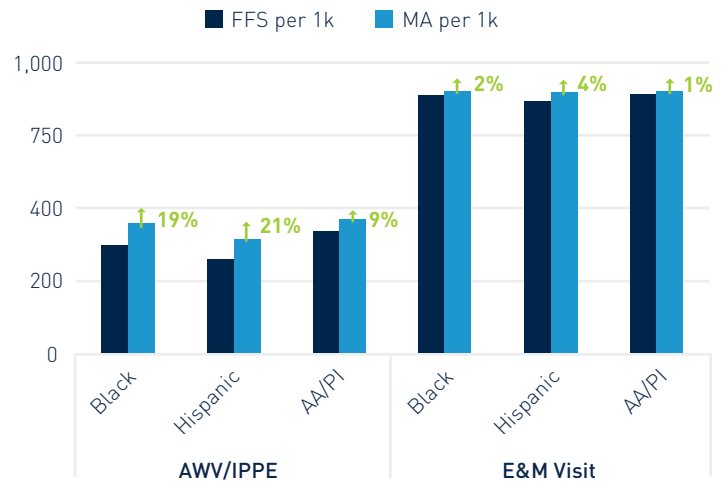
Figure 5. Share of PCP Visits Out of Total Visits Higher for MA Beneficiaries
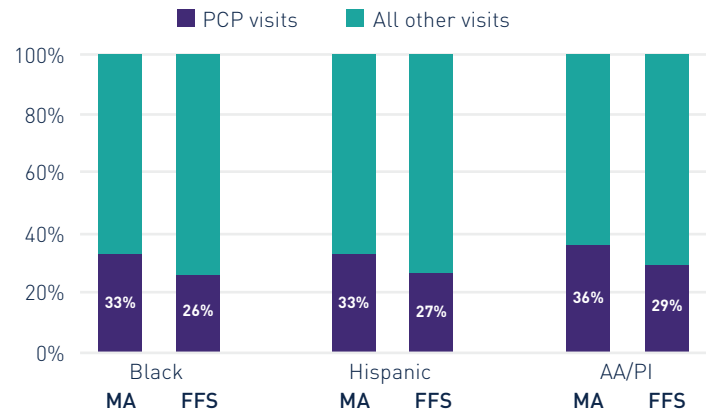
Figure 6. Rate of MA Beneficiaries with E&M Visit after Hospitalization Higher than FFS

Potentially Avoidable Care

MA beneficiaries across all three race/ethnicity groups had lower rates of readmission to the hospital within thirty days of an inpatient discharge compared to their FFS counterparts. The rates of Black and Hispanic MA beneficiaries with a readmission were 43% below FFS; the rate of AA/PI MA beneficiaries with a readmission was 38% below FFS.

Black and Hispanic MA beneficiaries also had lower rates of potentially avoidable hospitalizations (PAH) than FFS beneficiaries, though by a smaller margin than readmissions. These hospitalizations could have been avoided because the condition could have been treated outside the hospital or prevented. The rates of Black MA and Hispanic MA beneficiaries with a PAH were 6% and 12% below FFS beneficiaries, respectively. On the other hand, AA/PI MA beneficiaries had PAHs at a 6% higher rate than FFS.

Last, the rate of Hispanic and AA/PI MA beneficiaries with a nonemergent emergency department (ED) visit was lower than FFS beneficiaries. These are visits to the ED for conditions that generally do not require immediate medical care. AA/PI MA beneficiaries saw the biggest difference in nonemergent ED visits with a rate 10% below FFS beneficiaries. Nonemergent ED visits among Hispanic MA beneficiaries were 6% below FFS. The difference was not statistically significant for Black beneficiaries.

Figure 7. Rate of MA Beneficiaries with Potentially Avoidable Care Lower than FFS
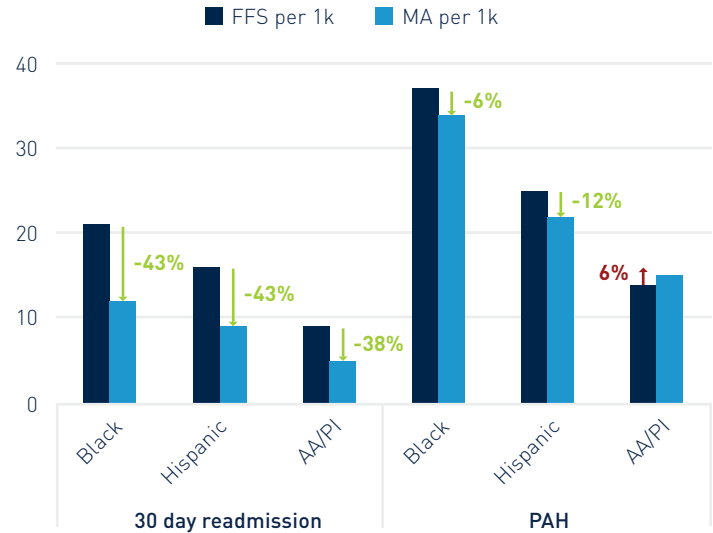
Figure 8. Rate of MA Beneficiaries with Nonemergent ED Visit Lower than FFS
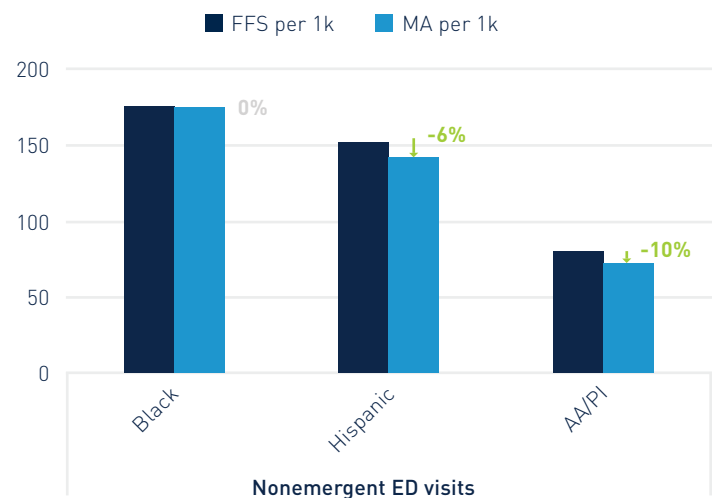
Plan Type Differences

Black, Hispanic, and AA/PI MA beneficiaries were segmented by MA plan enrollment type, including HMO, PPO, and SNP, to assess whether plan type was associated with differences in utilization metrics as compared to FFS groups.

Black, Hispanic, and AA/PI MA beneficiaries in SNPs had the greatest difference in rates of health screenings relative to FFS beneficiaries. Particularly, SNP beneficiaries received breast cancer screening rates at 14% to 22% higher than FFS beneficiaries, compared to 1% to 11% higher for HMO beneficiaries (Table 2).

Table 2. SNP Beneficiaries Had Highest Rates of Screening Compared to FFS Beneficiaries among Plan Types		Percentage Difference in Screening Rate between MA and FFS		
Race/Ethnicity	Plan Type	Breast Cancer	Cardiovascular	Colonoscopy
Black	HMO	3%	6%	-2%
	PPO	3%	3%	2%
	SNP	14%	7%	7%
Hispanic	HMO	11%	9%	4%
	PPO	6%	6%	5%
	SNP	22%	11%	16%
AA/PI	HMO	1%	4%	5%
	PPO	–	6%	–
	SNP	18%	4%	13%

Similarly, beneficiaries in SNPs had the greatest difference relative to FFS in receiving primary care services. The difference between Black and AA/PI SNP beneficiaries who had an E&M visit compared to FFS beneficiaries was double the difference for HMO and PPO beneficiaries compared to FFS. An even greater difference was observed for SNP beneficiaries with an AWV/IPPE, likely due to SNP model of care requirements. Among plan types, SNP beneficiaries also had the highest rates of E&M visits within seven and thirty days after hospitalization compared to their FFS counterparts (Table 3).

Table 3. SNP Beneficiaries Had Highest Rates of Primary Care Compared to FFS Beneficiaries among Plan Types		Percentage Difference in Rate of Primary Care Use between MA and FFS			
Race/Ethnicity	Plan Type	E&M Visit	AWV/IPPE	Hospital Follow-Up (30 Days)	Hospital Follow-Up (7 Days)
Black	HMO	1%	11%	13%	39%
	PPO	1%	15%	13%	33%
	SNP	4%	50%	20%	51%
Hispanic	HMO	4%	12%	11%	32%
	PPO	3%	19%	11%	29%
	SNP	4%	40%	16%	43%
AA/PI	HMO	0%	–	5%	17%
	PPO	1%	12%	9%	27%
	SNP	2%	27%	14%	44%

Unlike other primary care measures, SNP beneficiaries had the smallest difference compared to FFS beneficiaries for the share of total visits that were for primary care services. Although Black, Hispanic, and AA/PI MA beneficiaries had a higher share of primary care visits out of total visits, the difference with FFS counterparts was the smallest for SNP beneficiaries (4%, 4%, and 2%, respectively, compared to 6% to 9% for other plan types). This could reflect more specialty care services to treat acute and chronic conditions.

PPO beneficiaries had the lowest thirty-day inpatient readmission rate compared to FFS out of the plan types—nearly 50% lower for all race/ethnicities. Results for PAHs were mixed across plan types and race/ethnicity groups without a clear trend by MA plan type.

Black, Hispanic, and AA/PI HMO and PPO beneficiaries had a lower rate of nonemergent ED visits than their FFS counterparts, while Black SNP beneficiaries had a higher rate. The difference between MA and FFS was not statistically significant for Hispanic PPO beneficiaries (Table 4).

Table 4. MA Beneficiaries Had Lower 30-Day Readmission Rates But Mixed on PAH and Nonemergent ED Visits		Percentage Difference in Potentially Avoidable Care between MA and FFS		
Race/Ethnicity	Plan Type	30-Day Readmits	PAH	Nonemergent ED Visits
Black	HMO	-39%	-8%	-3%
	PPO	-47%	-11%	-2%
	SNP	-46%	–	5%
Hispanic	HMO	-40%	-14%	-10%
	PPO	-47%	-5%	–
	SNP	-44%	-14%	-5%
AA/PI	HMO	-36%	–	-9%
	PPO	-47%	11%	-12%
	SNP	-35%	12%	-8%

Discussion

Higher rates of preventive screening and primary care services among Black, Hispanic, and AA/PI MA beneficiaries when compared to FFS beneficiaries with similar clinical and demographic profiles may be driven by specific features of MA care coordination, including primary care outreach, care transition planning, and beneficiary-focused models of care. SNP beneficiaries were more likely to see the greatest difference in obtaining care over matched FFS beneficiaries, possibly related to CMS's requirement for SNPs to create models of care for beneficiaries.

Lower rates of potentially avoidable hospital care and ED visits among Black, Hispanic, and AA/PI MA beneficiaries as compared to FFS beneficiaries could also be associated with higher rates of primary care services and more care planning provided by MA plans. When compared to FFS, MA plans appear to have more success lowering readmission rates than potentially avoidable hospitalizations. This could be due to higher rates of primary care follow-up visits after hospital stays. MA plans may consider strategies that reduce the share of beneficiaries with nonemergent ED visits compared to FFS and whether these strategies also may be applicable to reducing potentially avoidable hospitalizations.

Limitations

Although this study relied on 100% MA encounter and FFS claims data, differences between MA and FFS and submission of data may introduce limitations.

- MA plans and FFS providers may differ in diagnostic coding patterns, which may hinder the accuracy of matching MA and FFS beneficiaries on clinical profiles. MA plans have an incentive to thoroughly identify beneficiary diagnoses, while FFS providers may not. Utilization metrics were chosen to mitigate the impact of these differences; however, differences in coding patterns could affect the matching procedure itself.

- The race variable used in this study is less accurate than using self-reported race and ethnicity data, particularly for Hispanic and AA/PI beneficiaries. The race code is assigned by the Social Security Administration and modified by an algorithm developed by RTI.[6]

- Differing quality and completeness of MA and FFS data may introduce limitations. Certain variables in the MA encounter data are less complete; for example, the attending physician National Provider Identifier (NPI) variable is more frequently missing in MA encounter data than in FFS data. To compare PCP visit share between MA and FFS (which uses attending NPI to determine taxonomy), we assume that this incompleteness is distributed equally among PCP and non-PCP provider types.

While PSM provides a convenient method to control for confounding variables and selection bias in observational data, it is limited to balancing measured covariates between treatment and control groups. Thus, the study's ability to limit bias in the estimated treatment effect relies on the assumption that there were no unmeasured or unobserved covariates (or that those unobserved covariates would be controlled for by proxy variables included in the matching procedure).

Appendix 1. Abbreviations

Abbreviation	Definition
AA/PI	Asian American/Pacific Islander
CCW	Chronic Conditions Warehouse
CMS	Centers for Medicare & Medicaid Services
ED	Emergency department
EGWP	Employer Group Waiver Plans
ESRD	End-stage renal disease
FFS	Fee for service
HMO	Health maintenance organization
MA	Medicare Advantage
MBSF	Master Beneficiary Summary File
MEDPAR	Medicare Provider Analysis and Review
MMP	Medicare-Medicaid Plan
NPI	National Provider Identifier
PPO	Preferred provider organization
PSM	Propensity score matching
RTI	Research Triangle Institute
SMD	Standardized mean difference
SNP	Special needs plan

Appendix 2. Data Sources

Data Source	Description
Medicare Beneficiary Survey File (MBSF)	The CMS MBSF includes beneficiary enrollment information, including monthly enrollment for Medicare Parts A, B, C, and D; and eligibility and demographic information.
Medicare Claims and Encounter files	100% inpatient, carrier, and outpatient claims and encounters for FFS beneficiaries and MA beneficiaries, respectively.
Long-Term-Care Minimum Data Set (MDS)	Health-status screening and assessment tool used for all residents of long-term-care nursing facilities.

Appendix 3. Matching Covariates and Standardized Mean Differences

Black Beneficiaries									
HMO				**PPO**			**SNP**		
Covariate		MA	FFS	SMD	MA	FFS	SMD	MA	FFS	SMD
No.		1,124,399	1,124,399	NA	578,255	578,255	NA	508,198	508,198	NA
Age (Mean)		69.7	70.1	-0.04	69.2	69.1	0.01	61.3	61.2	0.01
Sex (% Female)		58.30%	59.16%	0.02	57.09%	57.59%	0.01	58.11%	57.98%	0.00
Dual		20.71%	21.35%	0.02	18.24%	18.89%	0.02	90.47%	90.47%	0.00
# Chronic Conditions	0-1 CC	13.21%	12.30%	-0.02	13.65%	12.62%	-0.03	21.25%	20.23%	-0.03
	2-3 CC	22.21%	22.24%	0.00	21.83%	21.84%	0.00	23.09%	22.87%	-0.01
	4-5 CC	28.51%	28.88%	0.01	28.16%	28.50%	0.01	23.00%	23.40%	0.01
	6+ CC	36.07%	36.58%	0.01	36.36%	37.04%	0.01	32.66%	33.50%	0.02
Chronic Condition Type	Cancer	12.90%	13.32%	0.01	12.87%	12.95%	0.00	8.75%	8.59%	-0.01
	Cardiac	26.23%	26.79%	0.01	25.93%	26.47%	0.01	24.57%	25.34%	0.02
	Endocrine and Renal	55.54%	56.03%	0.01	54.20%	54.78%	0.01	48.59%	51.20%	0.05
	Mental Health	20.36%	19.76%	-0.02	20.32%	20.97%	0.02	28.93%	29.63%	0.02
	Musculoskeletal	41.24%	42.39%	0.02	43.14%	44.29%	0.02	38.65%	37.99%	-0.01
	Neurologic	4.87%	5.05%	0.01	4.72%	4.66%	0.00	7.11%	7.45%	0.01
	Respiratory	22.44%	22.13%	-0.01	23.17%	24.11%	0.02	27.36%	27.19%	0.00
Years of Continuous Enrollment	1 Year	11.47%	12.01%		18.04%	19.71%		12.26%	13.02%	
	2 Years	12.56%	9.42%	-0.03	17.31%	12.75%	-0.02	13.49%	9.74%	-0.03
	3 Years	75.97%	78.58%		64.65%	67.54%		74.25%	77.24%	
% of County Considered Urban	Urban 0-25%	4.01%	3.81%	-0.01	9.52%	9.86%	0.01	6.50%	6.74%	0.01
	Urban 25-50%	5.00%	4.91%	0.00	9.38%	9.19%	-0.01	7.15%	7.37%	0.01
	Urban 50-75%	8.00%	7.91%	0.00	13.35%	13.11%	-0.01	10.86%	10.83%	0.00
	Urban 75-100%	82.99%	83.37%	0.01	67.76%	67.84%	0.00	75.49%	75.05%	-0.01

Hispanic Beneficiaries									
HMO				**PPO**			**SNP**		
Covariate		MA	FFS	SMD	MA	FFS	SMD	MA	FFS	SMD
No.		914,741	914,741	NA	334,310	334,310	NA	532,871	532,871	NA
Age (Mean)		70.4	70.6	-0.02	69.7	69.6	0.00	67.5	67	0.04
Sex (% Female)		54.32%	55.38%	0.02	53.46%	53.64%	0.00	58.39%	57.59%	-0.02
Dual		29.40%	30.82%	0.03	19.96%	19.65%	-0.01	84.51%	84.49%	0.00
# Chronic Conditions	0-1 CC	18.92%	18.10%	-0.02	13.98%	13.60%	-0.01	15.70%	15.39%	-0.01
	2-3 CC	24.07%	23.78%	-0.01	23.16%	23.01%	0.00	22.53%	22.07%	-0.01
	4-5 CC	26.51%	26.94%	0.01	28.42%	28.38%	0.00	25.58%	25.70%	0.00
	6+ CC	30.50%	31.18%	0.01	34.44%	35.02%	0.01	36.20%	36.84%	0.01

Category	Subcategory	MA	FFS	SMD	MA	FFS	SMD	MA	FFS	SMD
Chronic Condition Type	Cancer	8.84%	9.06%	0.01	8.68%	8.75%	0.00	7.86%	7.50%	-0.01
	Cardiac	22.78%	23.31%	0.01	24.27%	24.37%	0.00	24.99%	25.50%	0.01
	Endocrine and Renal	52.97%	53.56%	0.01	56.57%	56.78%	0.00	58.19%	61.33%	0.06
	Mental Health	21.88%	21.99%	0.00	24.74%	25.35%	0.01	30.68%	30.66%	0.00
	Musculoskeletal	38.77%	39.75%	0.02	43.39%	44.19%	0.02	42.50%	41.12%	-0.03
	Neurologic	4.95%	5.00%	0.00	4.25%	4.13%	-0.01	6.49%	6.78%	0.01
	Respiratory	17.27%	17.46%	0.00	21.12%	21.50%	0.01	22.68%	21.96%	-0.02
Years of Continuous Enrollment	1 Year	11.49%	12.26%		18.77%	18.99%		12.36%	12.60%	
	2 Years	11.26%	9.83%	0.00	16.37%	13.52%	-0.03	11.77%	9.97%	-0.02
	3 Years	77.25%	77.91%		64.86%	67.49%		75.87%	77.44%	
% of County Considered Urban	Urban 0-25%	1.09%	1.03%	0.00	3.73%	3.64%	0.00	1.53%	1.60%	0.01
	Urban 25-50%	1.89%	1.85%	0.00	5.82%	6.17%	0.02	2.41%	2.33%	0.00
	Urban 50-75%	5.41%	5.34%	0.00	11.81%	11.79%	0.00	6.53%	6.58%	0.00
	Urban 75-100%	91.61%	91.78%	0.01	78.64%	78.39%	-0.01	89.53%	89.49%	0.00

AA/PI Beneficiaries										
		HMO			PPO			SNP		
Covariate		MA	FFS	SMD	MA	FFS	SMD	MA	FFS	SMD
No.		446,540	446,540	NA	167,061	167,061	NA	224,805	224,805	NA
Age (Mean)		72	72	0.00	71.5	71.4	0.01	72	72.3	-0.03
Sex (% Female)		56.7%	56.9%	0.00	54.85%	54.41%	-0.01	58.75%	58.69%	0.00
Dual		18.7%	18.9%	0.00	10.47%	10.41%	0.00	94.51%	94.51%	0.00
# Chronic Conditions	0-1 CC	17.3%	17.2%	0.00	13.25%	13.13%	0.00	10.45%	10.53%	0.00
	2-3 CC	27.3%	27.2%	0.00	26.06%	26.10%	0.00	21.84%	21.42%	-0.01
	4-5 CC	29.1%	29.3%	0.00	30.58%	30.55%	0.00	29.59%	28.89%	-0.02
	6+ CC	26.3%	26.3%	0.00	30.11%	30.23%	0.00	38.12%	39.16%	0.02
Chronic Condition Type	Cancer	7.8%	7.8%	0.00	8.18%	8.19%	0.00	7.22%	7.03%	-0.01
	Cardiac	19.6%	19.6%	0.00	20.87%	20.83%	0.00	25.74%	26.28%	0.01
	Endocrine and Renal	50.6%	50.9%	0.01	53.60%	53.43%	0.00	58.93%	60.26%	0.03
	Mental Health	12.7%	12.3%	-0.01	11.83%	11.80%	0.00	20.13%	20.52%	0.01
	Musculoskeletal	36.1%	36.0%	0.00	37.32%	37.54%	0.00	47.00%	46.67%	-0.01
	Neurologic	3.3%	3.3%	0.00	3.66%	3.56%	0.00	5.67%	5.64%	0.00
	Respiratory	13.8%	13.4%	-0.01	15.03%	14.91%	0.00	19.38%	19.76%	0.01
Years of Continuous Enrollment	1 Year	11.5%	12.7%		17.98%	18.16%		11.27%	11.58%	
	2 Years	11.6%	10.6%	0.01	15.49%	14.34%	-0.01	11.77%	9.45%	-0.02
	3 Years	76.9%	77.1%		66.53%	67.50%		76.95%	78.97%	
% of County Considered Urban	Urban 0-25%	0.3%	0.3%	-0.01	1.00%	0.91%	-0.01	0.36%	0.29%	-0.01
	Urban 25-50%	1.0%	0.8%	-0.01	2.84%	2.64%	-0.01	1.22%	0.99%	-0.02
	Urban 50-75%	2.3%	2.2%	-0.01	5.84%	5.81%	0.00	2.41%	2.12%	-0.02
	Urban 75-100%	96.5%	96.1%	0.01	90.32%	90.64%	0.01	96.00%	96.60%	0.03

Appendix 4. Utilization Specifications

Category	Utilization Metrics	Specification
Screening	% of Recommended Beneficiaries with Colonoscopy Screening	– HCPCS Codes: G0105, G0121, S0285 – Or 44388-89, 44391-92, 44394, 44401, 44403-04, 44406, 45378, 45380-82, 45384-85, 45388, 45390-91, 88304, 88305 > Modifier or BCS code indicating preventive screening – Benes between 50-75 years old
	% of Recommended Beneficiaries with Breast Cancer Screening	– HCPCS Codes: 77063, 77067 – Or 77061, 77062, 77065, 77066, G0279 > Modifier or BCS code indicating preventive screening Female benes between 50-74
	% of All Beneficiaries with Cardiovascular Screening	HCPCS Codes: 80061, 82465, 83718, 84478
Primary Care	% of Beneficiaries with an Annual Wellness Visit or Initial Preventive Physical Exam ("Welcome to Medicare" visit)	HCPCS Codes: G0402, G0438, G0439, G0468
	% of Beneficiaries with a Primary Care Visit	HCPCS Codes: 99201-05, 99211-15 (carrier file); G0466, G0467 (OP file, FQHC facility type)
	% of Primary Care Visits out of Total Visits	Provider taxonomy codes: general practice, family medicine, internal medicine, OBGYN, geriatric medicine Excludes claims with null/missing NPI in denominator
	% of Beneficiaries with an Inpatient Hospitalization who Had a Primary Care Visit within 7 and 30 Days of Discharge	HCPCS Codes appearing 7 or 30 days from discharge: 99201-05, 99211-15 (carrier file); G0466, G0467 (OP file, FQHC facility type) Excludes IP visits with a readmission within 7 or 30 days from discharge
Potentially Avoidable Care	% of Beneficiaries with 30-day Hospital Readmission	Identifies IP stays with another IP stay 30 days from discharge
	% of Beneficiaries with a Potentially Avoidable Hospitalization	Identify IP stays with primary or secondary diagnosis code in CMS/RTI community "potentially avoidable" ICD-10 list
	% of Beneficiaries with a Non-Emergent Visit to the Emergency Department	Uses the NYU Emergency Room Algorithm Identifies primary diagnosis for an ED visit, uses NYU ICD-10 list to determine if the ED visit was emergent or non-emergent

Endnotes

1 Nancy Ochieng et al., *Disparities in Health Measures By Race and Ethnicity Among Beneficiaries in Medicare Advantage: A Review of the Literature,* KFF (December 13, 2023).

2 MedPAC, *Report to the Congress: Medicare and the Health Care Delivery System,* chapter 3, "Assessing data sources for measuring health care utilization by Medicare Advantage enrollees: Encounter data and other sources" (June 2024).

3 BRG used greedy matching without replacement to form matched pairs of MA and FFS beneficiaries.

4 As of 2024, the United States Preventive Services Task Force (USPSTF) updated recommendations for breast cancer screening to women aged 40 to 74. This measure uses specifications that applied in 2022, the year of the study, of age 50 to 74.

5 Age 50–75 is the USPSTF recommendation with an "A" rating. Screening in adults age 45–49 carries a "B" recommendation from the USPSTF; rates among this age group were not evaluated in this study.

6 US Department of Health and Human Services, Office of Inspector General, "Inaccuracies in Medicare's Race and Ethnicity Data Hinder the Ability To Assess Health Disparities" (June 2022).