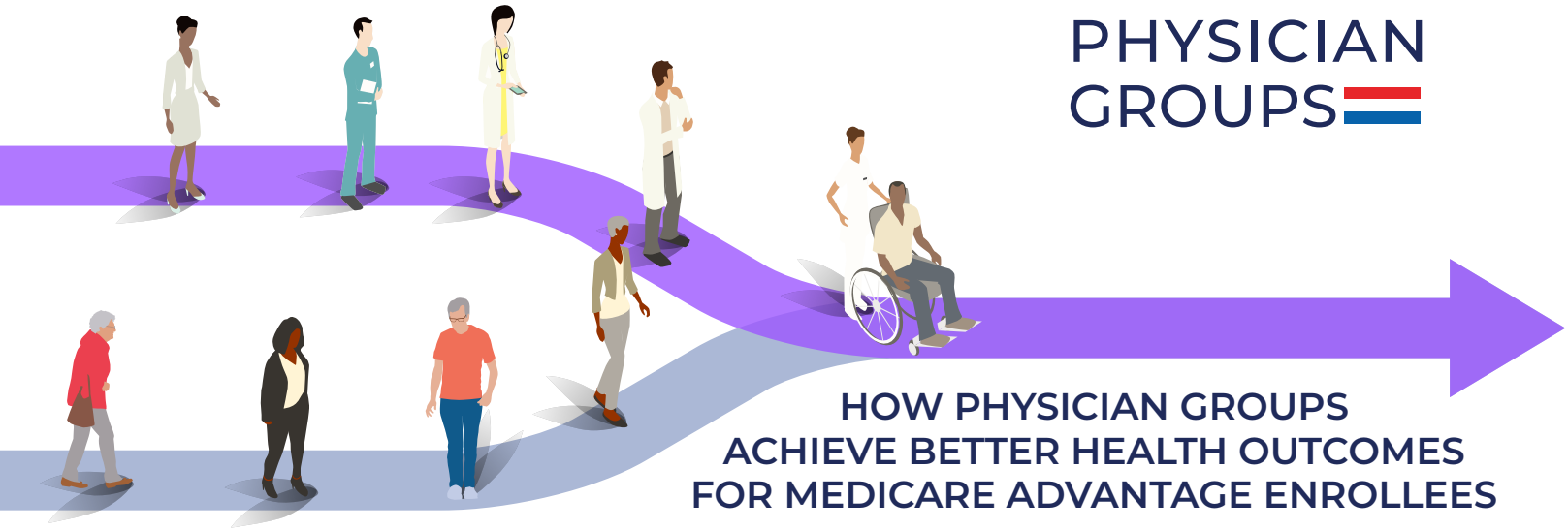
JOURNEY TO THE BEST CARE

AMERICA'S PHYSICIAN GROUPS



HOW PHYSICIAN GROUPS ACHIEVE BETTER HEALTH OUTCOMES FOR MEDICARE ADVANTAGE ENROLLEES

Q Prior studies have shown how superior patient care practices adopted by physician groups — all working under two-sided risk arrangements in Medicare Advantage (MA) — help their MA patients achieve improved health outcomes.[1,2] How do these outcomes compare to those of the traditional Medicare patients cared for by these same physician groups?

A Care outcomes for the groups' MA patients cared for in two-sided risk arrangements were far better than those for traditional Medicare patients across 16 of 20 measures.[3] The results suggest that operating in "At-Risk MA" affords extra resources for physician groups to undertake preventive care, intensive case management, and other strategies that improve overall care delivery for older adult populations.

As a result, compared to the traditional Medicare patients cared for by these physician groups, the MA patients they cared for were:

36-43% **less likely** to be admitted to hospitals for composite sets of acute and chronic conditions

39% **less likely** to be readmitted to hospitals within 30 days of a prior hospital stay

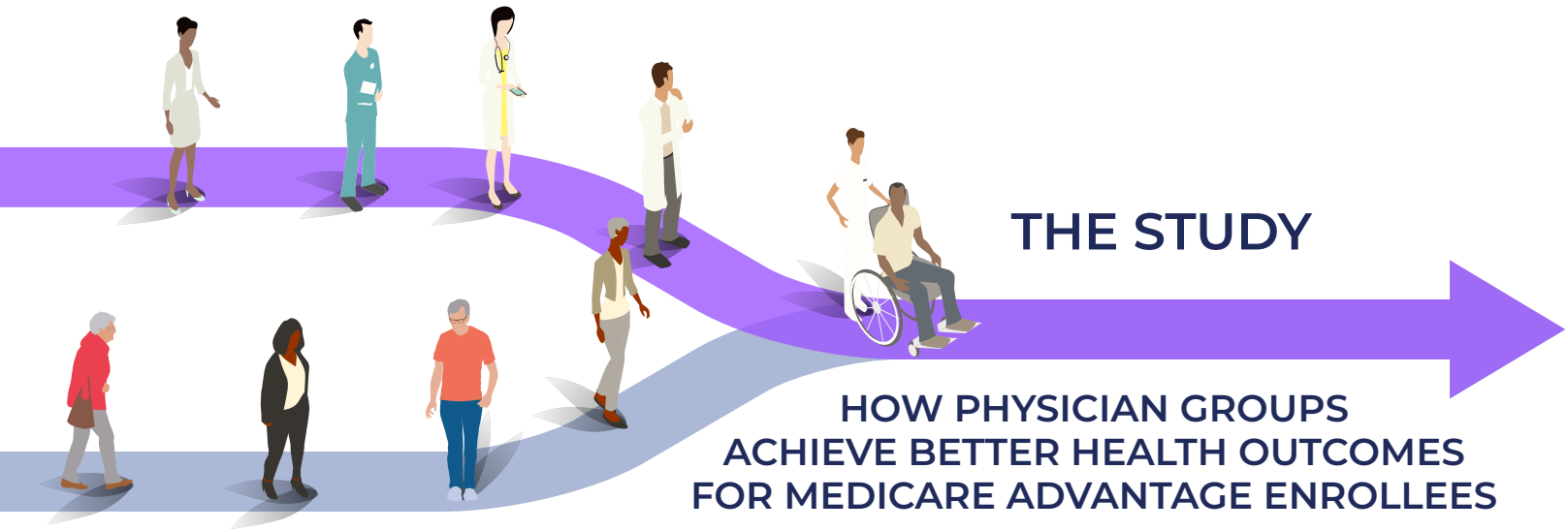
19% **less likely** to undergo avoidable emergency department visits

23% **less likely** to use high-risk medications

[1] *Cohen KR, Vabson B, Podulka J, et al, Medicare Risk Arrangement and Use and Outcomes Among Physician Groups. JAMA Netw Open. 2025; 8(1):e2456074. 10.1001/jamanetworkopen.2024.56074*

[2] *Vabson B, Cohen K, Ameli O, et al. Potential spillover effects on traditional Medicare when physicians bear Medicare Advantage risk. Am J Manag Care. Published online February 26, 2025. doi:10.37765/ajmc.2025.89686.*

[3] *Cohen K, Vabson B, Podulka J, et al. Health outcomes under full-risk Medicare Advantage vs traditional Medicare. Am J Manag Care. Published online May 9, 2025. doi:10.37765/ajmc.2025.89740*



THE STUDY

HOW PHYSICIAN GROUPS ACHIEVE BETTER HEALTH OUTCOMES FOR MEDICARE ADVANTAGE ENROLLEES

1

Researchers first identified 17 large physician organizations — all members of America's Physician Groups — that had full two-sided risk arrangements with Medicare Advantage plans. The 17 groups included more than 15,000 physicians and contracted with 35 different MA health insurers.

2

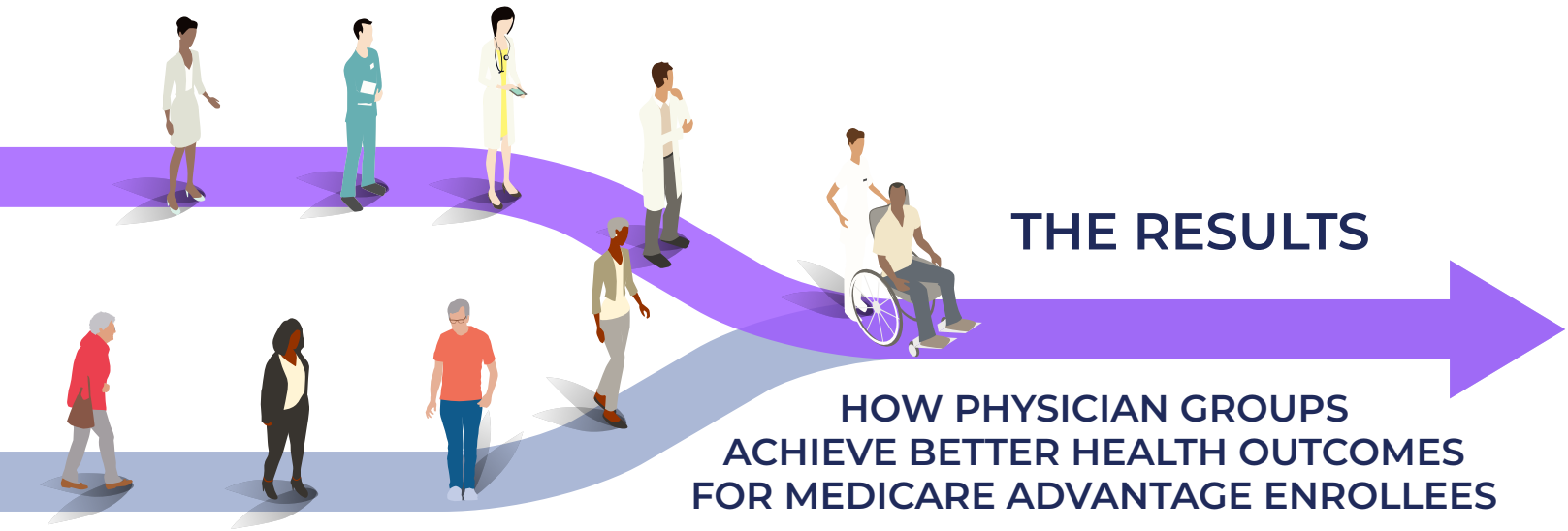
The researchers then identified two cohorts of these groups' Medicare patients: those enrolled in MA and cared for under full-risk arrangements and those in traditional Medicare, both for the pre-pandemic years of 2016- 2019. The total sample was equivalent to nearly 6.6 million patient-years and the average age was 73.

3

The researchers then compared the two groups of patients based on 20 measures of quality and efficiency across four domains of care: acute hospital care, avoidance of emergency department use, avoidance of disease-specific admissions for such conditions as diabetes and heart failure, and outpatient care.

4

To adjust for differences in the mix of patients, results were adjusted for age, gender, race, and ethnicity, as well as for differences in MA coding intensity between the two groups.



THE RESULTS

HOW PHYSICIAN GROUPS ACHIEVE BETTER HEALTH OUTCOMES FOR MEDICARE ADVANTAGE ENROLLEES

- The study showed that, in 16 of 20 measures, the outcomes achieved for the Medicare Advantage patients cared for under full-risk Medicare Advantage were superior to those of traditional Medicare (see below). For 4 of the 20 measures, the outcomes were roughly the same.
- The superior outcomes signified both higher care quality and efficiency, in that they demonstrated better use of health care resources, and, in effect, more value for the money spent on health care (although the study did not measure actual costs of care).
- In one anomalous result, the study found that the MA patients were slightly less likely to have office visits than the traditional Medicare patients. It is unclear why, but it may be because MA offers services that substitute for office visits and are not captured in Medicare claims, such as care management and disease management encounters.

Compared to the traditional Medicare patients, the MA patients in the study were:

11% **less likely** to have emergency department visits

22% **less likely** to be admitted as inpatients through emergency departments

40% **less likely** to be admitted to a hospital for hypertension

54% **less likely** to be admitted to a hospital for a urinary tract infection

13% **less likely** to be admitted to a hospital for a lower-extremity amputation due to diabetes

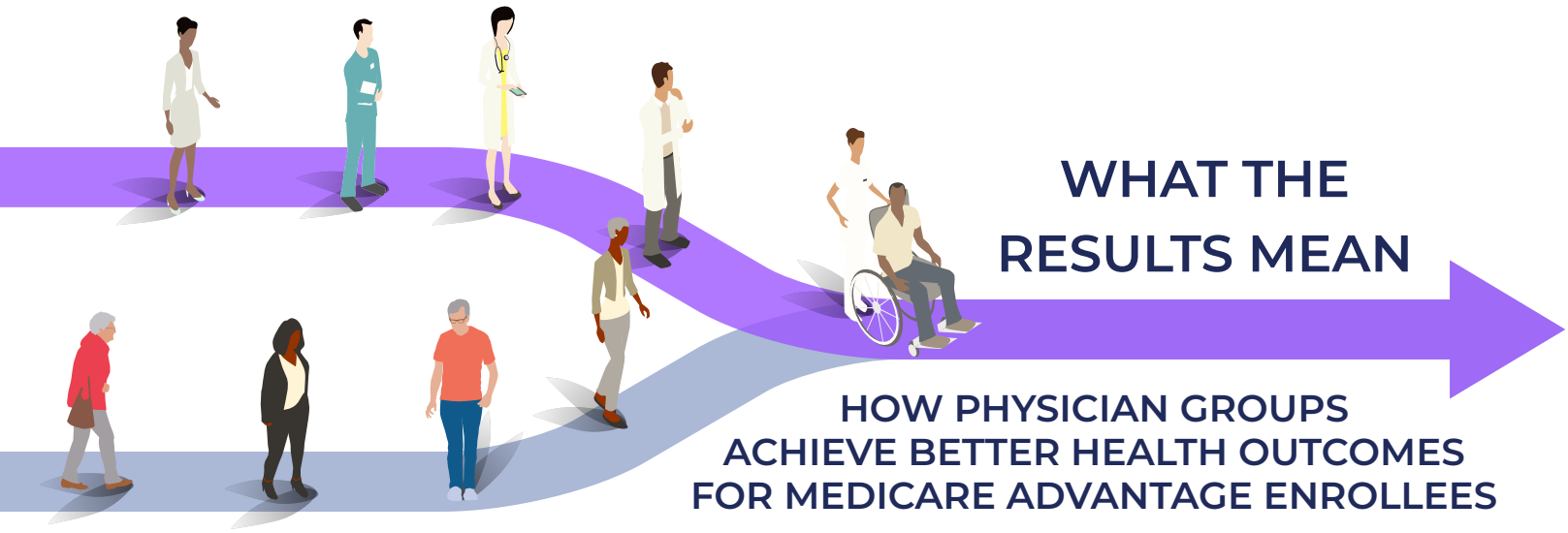
34% **less likely** to be admitted to a hospital for bacterial pneumonia

The traditional Medicare patients fared roughly the same or better on these measures, for unknown reasons:

0.9% **more likely** to be adherent to statin drugs compared to MA

1.6% **more likely** to be adherent to medications for inhibiting the renin angiotensin system, such as ACE inhibitors departments

= Traditional Medicare patients were roughly **as likely** as MA patients to be adherent to diabetes medications



WHAT THE RESULTS MEAN

HOW PHYSICIAN GROUPS ACHIEVE BETTER HEALTH OUTCOMES FOR MEDICARE ADVANTAGE ENROLLEES

Q What could explain the finding that Medicare Advantage enrollees cared for by physician groups with expertise in At-Risk MA saw superior outcomes compared to these groups' traditional Medicare patients?

A **Physicians operating in two-sided risk arrangements in MA adopt advanced care practices to keep their MA patients as healthy as possible and out of hospitals (see more detail below). These care practices, largely delivered in the ambulatory setting and through primary care, are especially effective in reducing unnecessary emergency department visits, hospitalizations, and readmissions for multiple potentially costly chronic conditions.**

1

Physician practices in full risk relationships with MA plans can lose money if patients undergo costly care or achieve poor outcomes, so they have incentives to keep patients healthy. Due to payments earned through such MA features as risk adjustment, these practices have more resources to devote to patient care.

2

These incentives and resources help them to focus more on preventive care; use more evidence-based medicine to drive care decisions; selectively refer patients to high-performing specialists and facilities; and reduce the provision of low-value care that could earn money for practices but could also be wasted on or even harm patients.

3

Practices in At-Risk MA also adopt capabilities and infrastructure, such as population risk stratification, provider performance feedback, intensive case management, and support services such as in behavioral health, pharmacy, disease management, and social worker assistance. All of these also help keep patients healthy and out of the hospital.

4

Not all these capabilities that practices adopt to thrive in At-risk MA are employed on behalf of traditional Medicare patients, but some are, presumably to their benefit as well. Without this "spillover" effect, it is likely that the outcomes gaps between MA and traditional Medicare patients would be even worse.

About APG

APG is a national organization of primary care and multispecialty medical groups that take accountability for the quality and cost of health care. Our approximately 360 physician groups comprise 170,000 physicians, as well as thousands of other clinicians, providing care to nearly 90 million patients, including about 1 in 3 Medicare Advantage enrollees.

APG's motto, 'Taking Responsibility or America's Health', represents our members' commitment to clinically integrated, coordinated, value-based health care in which physician groups are accountable for the quality and cost of patient care. Visit us at www.apg.org.

Health Outcomes Under Full-Risk Medicare Advantage vs Traditional Medicare

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ABSTRACT

OBJECTIVES: To compare quality and health resource utilization among beneficiaries under 2-sided risk Medicare Advantage (MA) payment arrangements (at-risk MA) vs traditional Medicare (TM).

STUDY DESIGN: Retrospective cross-sectional regression analyses of claims and enrollment data from 2016 to 2019 examining 20 performance measures. All patients were cared for by the same 17 physician groups and 15,488 physicians across 35 health insurers.

METHODS: Logistic regressions adjusted for demographics, geography, and comorbidities for 20 quality and utilization measures across 4 domains of care. Estimates were reported using marginal risk and marginal risk difference per 1000 across the study period.

RESULTS: The sample comprised 6,564,538 person-years (30.3% at-risk MA and 69.7% TM). Sixteen of the 20 measures favored at-risk MA, including lower acute inpatient admissions, lower 30-day readmissions, avoidance of emergency department utilization across 4 measures, avoidance of disease-specific inpatient admissions in 7 of 9 measures, lower high-risk medication use and office visits, and higher medication adherence to renin-angiotensin system drugs. The other 4 measures were statistically equivalent.

CONCLUSIONS: Given the CMS goal of moving all beneficiaries to fully accountable care arrangements by 2030, it is critical to understand the differences in quality and health resource utilization between at-risk MA and fee-for-service TM to inform policies on payment and service delivery. Although the associations are not causal, in this cross-sectional study, at-risk MA relative to TM was associated with 11.3% to 54.0% higher quality and efficiency in 16 of 20 measures after adjusting for differences in demographics, comorbidities, and other health characteristics.

Am J Manag Care. 2025;31(10): In Press

Medicare Advantage (MA) enrollment now represents 54% of all Medicare-eligible beneficiaries.[1] MA beneficiaries receive additional benefits—such as dental, hearing, and vision services—that are not available in traditional Medicare (TM).[2] Recent studies suggest that MA enrollment compared with TM is predominantly associated with higher quality outcomes, reductions in total cost of care, and lower out-of-pocket spending.[3-6] Several of these studies focused on broad MA and TM comparisons; however, MA plans vary in how they contract with providers.[7]

An increasing number of MA plans contract with physician groups under delegated 2-sided risk arrangements in which the financial risk of providing health care services is transferred wholly or in large part to the group (*at-risk MA*). Physician groups in these arrangements may retain financial surplus or incur financial deficits related to the quality and efficiency of care they provide. Therefore, these physician groups are encouraged to provide optimal care while minimizing financial losses and have incentives to develop population health management infrastructure to improve care and reduce high-cost health resource utilization (eg, avoidable inpatient admissions). Limited at-risk arrangements exist for some TM beneficiaries through the recent Accountable Care Organization Realizing Equity, Access, and Community Health Model and the Medicare Shared Savings Program (MSSP), but they incorporate substantially less risk than 2-sided–risk MA models.[8]

A prior study observed that 2-sided MA risk arrangements were associated with higher quality and efficiency in the inpatient setting compared with TM.[9] We expand this previous work by including a larger array of quality and efficiency measures across 4 domains of patient care. This study also examines a broader sample of physician groups in 2-sided risk arrangements and primary care physicians (PCPs) contracted with many different payers, which are more reflective of current at-risk global capitation models.

METHODS

We compared quality and efficiency measures for patients in at-risk MA or TM arrangements cared for by the same physician groups.

Analyses within a large sample of the same physician groups managing both MA and TM patients enabled us to assess the association of at-risk MA provider payment arrangements with quality and utilization and to explore how MA's performance might be enabled by at-risk payment arrangements and the associated care management infrastructure that medical groups create.

TAKEAWAY POINTS

- Payment in Medicare Advantage (MA) may be 2-sided risk–based (at-risk MA) or fee-for-service.
- There are limited data on the quality and health resource utilization of at-risk MA compared with traditional Medicare (TM).
- In this retrospective analysis of claims and enrollment data from 2016 to 2019, at-risk MA vs TM was associated with 11% to 54% higher quality and efficiency in 16 of 20 measures across 4 domains of patient care when care was provided by the same physicians and physician groups.
- At-risk MA was associated with higher quality and lower health resource utilization compared with TM.

Study Oversight

Solutions IRB, an external institutional review board (IRB), approved this study. Because the study design involved retrospective analysis of preexisting deidentified data, it qualified as non–human subjects research under IRB protocol and was exempted from further review. This study followed the Strengthening the Reporting of Observational Studies in Epidemiology reporting guideline (**eAppendix Figure** [eAppendix available at **ajmc.com**]).

Study Data

We used deidentified Medicare claims from CMS MA encounter data and the CMS Virtual Research Data Center as well as a nonpublic data set of physician groups that participated in the study and provided information about their risk-based MA contract arrangements. The public CMS Medicare data tracked health resource utilization and outcomes for MA and TM beneficiaries. MA encounter data tracked MA utilization, and fee-for-service (FFS) claims tracked TM utilization. To ensure data completeness in the MA encounter data, we focused on inpatient-related encounters, for which encounter data have been shown to be highly accurate. Outpatient pharmacy data used the pharmacy measures from the Healthcare Effectiveness Data and Information Set. Data covered the period from 2016 through 2019 and were analyzed from January 2024 to October 2024.

The physician group data set comprised 17 groups with MA plans in at-risk arrangements (**eAppendix Table 1**), which included MA insurance carriers, plan types, contract identifiers, plan identifiers, and whether each at-risk arrangement was a professional-only, professional-with-shared-institutional, or global arrangement for each group in each study year. During the analysis period, all at-risk MA groups except 1 took full 2-sided risk at a minimum for professional services. Using roster data obtained from the groups, we linked each group's risk arrangements to constituent PCPs and then linked the PCPs' National Provider Identifiers to the patients in the CMS Medicare data asset. We then attributed beneficiaries to an individual PCP using MSSP attribution methodology because an equivalent or near-equivalent methodology is typically used by MA plans for at-risk payment attribution.[10] We assigned patient-to-PCP attribution separately for each year to reflect each beneficiary's predominant PCP in a given calendar year and to capture year-over-year changes in PCPs. Lastly, we tied individual PCPs to participating groups based on group-provided roster data.

This approach allowed us to create a cohort of MA beneficiaries in 2-sided risk arrangements and to compare them with TM beneficiaries who were all served by the same physician groups.

Sample and Cohorts

The study sample included beneficiaries attributed to a participating physician group for each calendar year from 2016 to 2019. We did not include subsequent years in order to avoid confounding effects related to disruptions experienced during the COVID-19 pandemic. We limited beneficiary-year combinations to individuals enrolled in both Medicare Part A and Part B for 12 continuous months in each measurement year. Our sample included patients eligible for Medicare and Medicaid (dual eligible), non–dual eligibles, and those younger than and at least 65 years. For pharmacy-based measures, we further restricted the sample to beneficiaries with Part D coverage for all 12 months of the measurement year. Because CMS does not track Medigap coverage, we were unable to identify TM beneficiaries with Medigap in our study.

Beneficiaries who switched between MA and TM within a calendar year were excluded, and we limited the sample to beneficiary-year combinations in which beneficiaries used primary care at least once in the given year—a prerequisite for successfully attributing a beneficiary to a PCP.

Lastly, we constructed 2 distinct cohorts for each calendar year: at-risk MA and TM. An analogous approach assigned TM beneficiaries to physician groups.

Outcomes

We calculated 20 quality and health resource utilization measures across 4 domains of patient care: acute hospital care, avoidance of unnecessary emergency department (ED) use, avoidance of disease-specific inpatient admissions, and outpatient care (**eAppendix Table 2**). Outcomes were defined at an individual claim level and then aggregated up to a person-year level for analysis.

For acute hospital care, we tracked acute inpatient admissions and 30-day readmissions. For the avoidance of unnecessary ED use, we measured 4 outcomes: ED visits, avoidable ED visits, primary care–treatable ED visits, and inpatient admissions through an ED. For the avoidance of disease-specific inpatient admissions, we used Agency for Healthcare Research and Quality Prevention

TABLE 1. Descriptive Characteristics of Sample

Characteristics	Study groups		
	All	At-risk MA[a]	TM
Cohort: total member-years, n (%)	6,564,538 (100%)	1,990,869 (100%)	4,573,669 (100%)
Age in years, mean (SD)	73.27 (10.25)	73.59 (9.16)	73.13 (10.70)
Age groups in years, n (%)			
< 64	709,243 (10.8%)	187,125 (9.4%)	522,118 (11.4%)
65-69	1,420,450 (21.6%)	441,092 (22.2%)	979,358 (21.4%)
70-74	1,591,432 (24.2%)	511,668 (25.7%)	1,079,764 (23.6%)
75-79	1,195,570 (18.2%)	371,315 (18.7%)	824,255 (18.0%)
≥ 80	1,647,843 (25.1%)	479,669 (24.1%)	1,168,174 (25.5%)
Sex, n (%)			
Female	3,741,186 (57.0%)	1,130,493 (56.8%)	2,610,693 (57.1%)
Male	2,823,348 (43.0%)	860,376 (43.2%)	1,962,972 (42.9%)
Race/ethnicity, n (%)			
American Indian/Alaska Native	9260 (0.1%)	2715 (0.1%)	6545 (0.1%)
Asian/Pacific Islander	424,214 (6.5%)	112,473 (5.6%)	311,741 (6.8%)
Black or African American	545,319 (8.3%)	160,845 (8.1%)	384,474 (8.4%)
Hispanic	1,263,129 (19.2%)	700,306 (35.2%)	562,823 (12.3%)
Non-Hispanic White	4,174,231 (63.6%)	980,153 (49.2%)	3,194,078 (69.8%)
Other	74,385 (1.1%)	21,356 (1.1%)	53,029 (1.2%)
Unknown	74,000 (1.1%)	13,021 (0.7%)	60,979 (1.3%)
Census divisions, n (%)			
East North Central	105,769 (1.6%)	15,725 (0.8%)	90,044 (2.0%)
East South Central	918,509 (14.0%)	148,724 (7.5%)	769,785 (16.8%)
Mid-Atlantic	139,695 (2.1%)	24,007 (1.2%)	115,688 (2.5%)
Mountain	257,203 (3.9%)	68,522 (3.4%)	188,681 (4.1%)
New England	75,090 (1.1%)	27,108 (1.4%)	47,982 (1.0%)
Other	245,161 (3.7%)	173,087 (8.7%)	72,074 (1.6%)
Pacific	2,583,493 (39.4%)	931,704 (46.8%)	1,651,789 (36.1%)
South Atlantic	1,168,649 (17.8%)	123,889 (6.2%)	1,044,760 (22.8%)
West North Central	11,112 (0.2%)	771 (0.0%)	10,341 (0.2%)
West South Central	1,059,857 (16.1%)	477,332 (24.0%)	582,525 (12.7%)
Dually eligible, n (%)	1,260,626 (19.2%)	304,445 (15.3%)	956,181 (20.9%)
In MSSP, n (%)	1,648,127 (25.1%)	0 (0.0%)	1,648,127 (36.0%)
Plan type: HMO, n (%)	1,975,815 (30.1%)	1,975,815 (99.2%)	0 (0.0%)
HCC version 24 score, mean (SD)	1.35 (1.19)	1.40 (1.09)	1.33 (1.23)

(continued)

Quality Indicator (PQI) definitions[11] to measure admissions for 9 conditions that are acute and/or chronic complications of the following: diabetes, chronic obstructive pulmonary disease (COPD), hypertension, heart failure, bacterial pneumonia, and urinary tract infections. In the domain of outpatient care, we looked at 5 measures: (1) high-risk medication use; medication adherence for (2) hypertension-related renin-angiotensin system (RAS) antagonists (including angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers, and direct renin inhibitors), (3) diabetes medications, and (4) statins; and (5) total office visit count.

Statistical Analysis

Using a cross-sectional study design, we compared the at-risk MA and TM cohorts over the same period and within the same physician groups across all 17 participating groups. To mitigate potential confounding from patient-mix differences, we adjusted for age, sex, race and ethnicity (using the Research Triangle Institute race code [American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, Hispanic, non-Hispanic White, other, or unknown]), dual eligibility status, calendar year, Hierarchical Condition Category (HCC) version 24 risk adjustment factor (RAF) score, and prevalence indicators for different high-level disease categories (based on high-level HCC groupings). We also included an indicator for the physician group of the attributed PCP, which allowed us to mitigate potential confounding from physician differences by comparing payment arrangements within a specific physician group.

We employed a multivariable logistic model representing all measures as binary indicators rather than using counts, given relatively low odds or prevalence of zero values. To assess the sensitivity of associations to coding intensity, we ran models adjusting for the updated HCC version 28 scores (which dropped 2294 codes) and groupings in place of those using version 24 (**eAppendix Table 3**). Results were reported as marginal risk differences (MRDs). We used SAS Enterprise Guide 7.15 HF9 (SAS Institute Inc).

RESULTS

The final cohort of beneficiaries was associated with 15,488 PCPs and 35 health plans and represented 6,564,538 person-years (**Table 1**), of which 30.3% were in at-risk MA and 69.7% in TM. Thirty-six percent of the TM cohort was in the MSSP. The mean age of beneficiaries was 73.6 years in the at-risk MA group and 73.1 years in the TM group. Women made up 56.8% and 57.1% of the at-risk MA and TM groups, respectively, and non-Hispanic White beneficiaries constituted 49.2% and 69.8%. The Pacific region had the greatest proportion of beneficiaries in the sample, with 46.8% and 36.1%, respectively. The mean HCC version 24 score was 1.40 in at-risk MA and 1.33 in TM.

Unadjusted rates and a marginal effect risk difference comparison of study outcomes for the 2019 measurement year across at-risk MA and TM are displayed in **Table 2**, the **Figure**, and **Table 3** (**eAppendix Table 4** presents results for 2016-2019).

Overall, the MRDs indicated that for 16 of the 20 measures, at-risk MA patients had outcomes indicative of higher quality and lower health resource utilization compared with TM patients. No significant differences between at-risk MA and TM were observed for 4 measures.

Domain 1: Hospital Care

The marginal risks (MRs) per 1000 for acute inpatient admission and 30-day readmission were lower by 30.03 (MRD 95% CI, −34.84 to −25.21) and 9.07 (MRD 95% CI, −11.41 to −6.74) for at-risk MA vs TM, respectively, suggesting that patients in at-risk MA were 20.0% less likely to experience acute admission and 38.8% less likely to experience a 30-day hospital readmission. Both outcomes were statistically significant ($P \leq .0001$) (Table 3).

Domain 2: Avoidance of Unnecessary ED Use

The 4 outcomes examined were ED visits, avoidable ED visits, primary care–treatable ED visits, and inpatient admissions through an ED. The MRs per 1000 for these outcomes were lower by 35.03 (MRD 95% CI, −41.84 to −28.22), 5.47 (MRD 95% CI, −8.27 to −2.66), 11.42 (MRD 95% CI, −15.45 to −7.40), and 26.13 (MRD 95% CI, −30.44 to −21.83), respectively, in at-risk MA vs TM. Across the 4 measures, at-risk MA patients were 11.3% to 22.2% less likely to experience unnecessary ED utilization. All comparisons in domain 2 were statistically significant ($P \leq .0001$) (Table 3).

Domain 3: Avoidance of Disease-Specific Inpatient Admissions

Using PQI definitions, we calculated 9 outcomes for avoidance of disease-specific inpatient admissions. Seven of the 9 metrics were statistically significant, favoring at-risk MA compared with TM. The MRs per 1000 for these 7 metrics were lower by 2.91 (MRD 95% CI, −4.50 to −1.32; $P < .0001$) for COPD/asthma admissions, 3.16 (MRD 95% CI, −4.65 to −1.66; $P < .0001$) for heart failure admissions, 1.72 (MRD 95% CI, −2.96 to

TABLE 1. (*Continued*) Descriptive Characteristics of Sample

Characteristics	Study groups		
	All	At-risk MA[a]	TM
HCC groups, n (%)			
Blood (HCCs 2, 46, 48)	692,128 (10.5%)	246,163 (12.4%)	445,965 (9.8%)
CVD (HCCs 82-88, 96, 99, 100, 107, 108)	2,738,326 (41.7%)	984,116 (49.4%)	1,754,210 (38.4%)
Diabetes (HCCs 17-19)	2,176,843 (33.2%)	756,165 (38.0%)	1,420,678 (31.1%)
Injury (HCCs 166-168)	165,128 (2.5%)	40,034 (2.0%)	125,094 (2.7%)
Kidney (HCCs 134-138)	1,204,903 (18.4%)	431,529 (21.7%)	773,374 (16.9%)
Liver (HCCs 27, 28)	78,277 (1.2%)	25,465 (1.3%)	52,812 (1.2%)
Lung (HCCs 111, 112, 114, 115)	1,108,795 (16.9%)	387,738 (19.5%)	721,057 (15.8%)
Neoplasm (HCCs 8-12)	776,521 (11.8%)	164,025 (8.2%)	612,496 (13.4%)
Psychiatric (HCCs 57-60)	1,063,041 (16.2%)	450,390 (22.6%)	612,651 (13.4%)
Skin (HCCs 157-159, 161, 162)	176,303 (2.7%)	36,593 (1.8%)	139,710 (3.1%)
Substance use disorder (HCCs 54-56)	353,564 (5.4%)	175,309 (8.8%)	178,255 (3.9%)

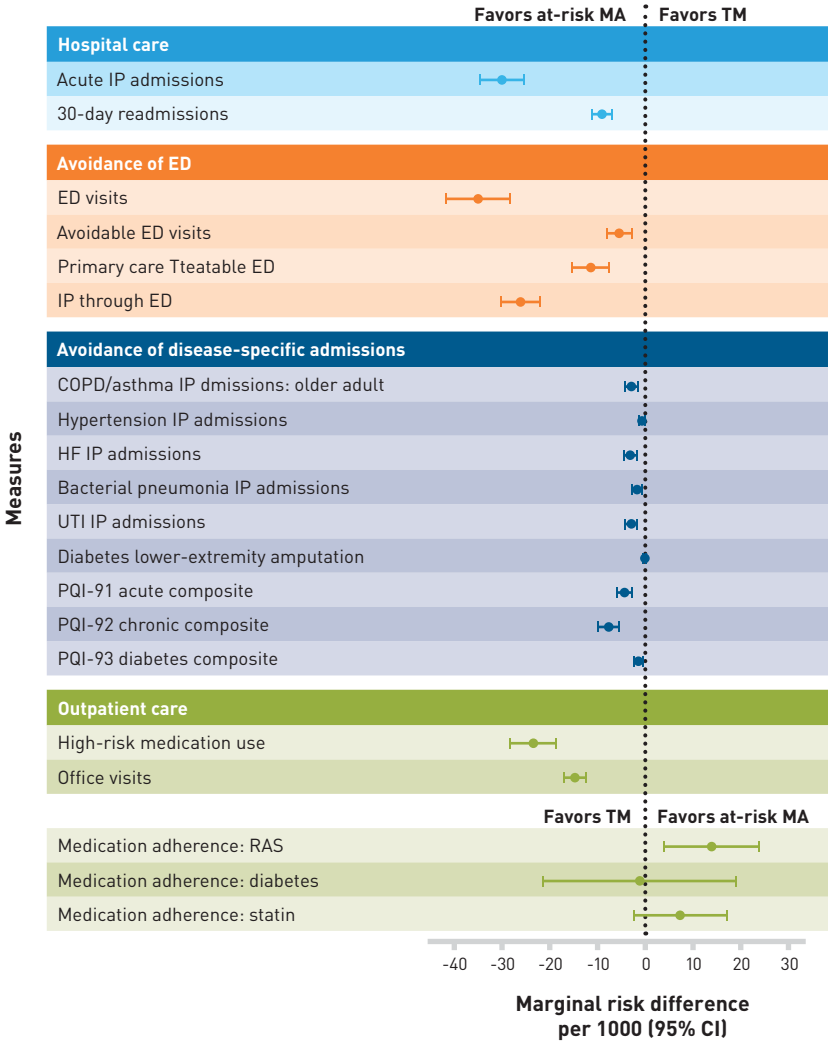
CVD, cardiovascular disease; HCC, Hierarchical Condition Category; HMO, health maintenance organization; MA, Medicare Advantage; MSSP, Medicare Shared Savings Program; TM, traditional Medicare.
[a]*At-risk MA* indicates MA beneficiaries cared for under fully accountable care models.

TABLE 2. Unadjusted Comparison of Efficiency and Quality Outcome Measures, Measurement Year 2019[a]

Domain	Outcome measure	All	At-risk MA[b]	TM
		Per 1000, mean (SD)		
Dis	COPD/asthma IP admissions: older adult	5.8 (95.8)	4.4 (83.0)	6.4 (101.5)
Dis	Hypertension IP admissions	1.7 (46.2)	1.2 (36.2)	2.0 (50.4)
Dis	Heart failure IP admissions	11.5 (140.9)	8.0 (111.2)	13.3 (153.4)
Dis	Bacterial pneumonia IP admissions	4.3 (68.6)	3.2 (59.4)	4.9 (72.8)
Dis	UTI IP admissions	4.3 (71.4)	2.8 (57.1)	5.1 (77.5)
Dis	Diabetes lower-extremity amputation	0.7 (31.7)	0.5 (26.1)	0.8 (34.2)
Dis	PQI-91 acute composite	8.7 (99.9)	6.0 (83.0)	10.0 (107.2)
Dis	PQI-92 chronic composite	23.8 (206.6)	16.9 (166.2)	27.1 (223.8)
Dis	PQI-93 diabetes composite	4.7 (91.5)	3.4 (75.7)	5.4 (98.4)
ED	ED visits	586.4 (1527.7)	517.5 (1360.4)	620.6 (1603.0)
ED	Avoidable ED visits	33.1 (260.1)	30.2 (243.2)	34.6 (268.1)
ED	Primary care–treatable ED visits	72.0 (368.7)	67.6 (343.7)	74.2 (380.5)
ED	IP through ED	158.7 (579.5)	105.2 (437.6)	185.2 (636.5)
IP	Acute IP admissions	206.6 (653.8)	142.3 (508.8)	238.4 (712.7)
IP	30-day readmissions	29.6 (272.6)	16.4 (178.6)	36.1 (308.4)
OP	High-risk medication use	82.0 (274.4)	61.4 (240.0)	96.3 (295.0)
OP	Office visits	9467.7 (7805.0)	7785.9 (6432.7)	10,300.2 (8276.2)
OP	Medication adherence: RAS[c]	876.5 (329.0)	88.2 (32.3)	87.2 (33.4)
OP	Medication adherence: diabetes[c]	741.7 (437.7)	73.6 (44.1)	74.7 (43.5)
OP	Medication adherence: statin[c]	874.5 (331.3)	87.6 (33.0)	87.4 (33.2)

COPD, chronic obstructive pulmonary disease; Dis, disease-specific care; ED, emergency department; IP, inpatient; MA, Medicare Advantage; OP, outpatient care; PQI, Prevention Quality Indicator; RAS, renin-angiotensin system; TM, traditional Medicare; UTI, urinary tract infection.
[a]2019 data included as representative. See eAppendix Table 4 for all 4 years of data.
[b]*At-risk MA* indicates MA beneficiaries cared for under fully accountable care models.
[c]Mean (SD) medication adherence per 1000.

FIGURE 1. Forest Plot of Adjusted Risk Differences Between At-Risk MA[a] vs TM for 20 Outcome Metrics: Adjusted Risk Difference From Logistic Regression Models for Marginal Effects (2016-2019 Data)[b]



COPD, chronic obstructive pulmonary disease; CVD, cardiovascular disease; ED, emergency department; HF, heart failure; IP, inpatient; MA, Medicare Advantage; PQI, Prevention Quality Indicator; RAS, renin-angiotensin system; TM, traditional Medicare; UTI, urinary tract infection.

[a]*At-risk MA* indicates MA beneficiaries cared for under fully accountable care models.

[b]Probability of all outcomes were modeled in the overall cohort. Due to rare event rates, risks and risk differences are reported in per 1000 scale. All measures are summarized as annual risk representing the 12-month probability of an outcome.

All models were adjusted for age groups, sex, race/ethnicity, dual status, health maintenance organization plan type (for MA), provider groups, calendar year, HCC version 24 score, and the following high-level HCC groupings: blood (HCCs 2, 46, 48), CVD (HCCs 82-88, 96, 99, 100, 107, 108), diabetes (HCCs 17-19), injury (HCCs 166-168), kidney (HCCs 134-138), liver (HCCs 27, 28), lung (HCCs 111, 112, 114, 115), neoplasm (HCCs 8-12), psychiatric (HCCs 57-60), skin (HCCs 157-159, 161, 162), and substance use disorder (HCCs 54-56).

−0.48; $P < .0001$) for bacterial pneumonia admissions, 2.91 (MRD 95% CI, −4.34 to −1.47; $P < .0001$) for urinary tract infection admissions, 4.35 (MRD 95% CI, −6.16 to −2.54; $P < .0001$) for PQI-91 acute composite admissions, 7.65 (MRD 95% CI, −9.98 to −5.31; $P < .0001$) for PQI-92 chronic composite admissions, and 1.44 (MRD 95% CI, −2.61 to −0.28; $P = .015$) for PQI-93 diabetes composite admissions. Overall, at-risk MA patients compared with TM patients were 32% to 54% less likely to be admitted as inpatients for these 7 outcomes (Table 3). The MRs per 1000 comparing at-risk MA and TM for the hypertension inpatient admission metric and diabetes lower-extremity amputation metric were statistically equivalent (see Figure and Table 3).

Domain 4: Outpatient Care

Five outcome measures were calculated. The MRs per 1000 results for 3 of the outcomes—23.45 (MRD 95% CI, −28.49 to −18.42) lower for high-risk medication use, 13.91 (MRD 95% CI, 3.77-24.06) higher for adherence to RAS antagonist medications, and 14.74 (MRD 95% CI, −17.28 to −12.20) lower for office visits—were statistically significant ($P \leq .01$), favoring at-risk MA. At-risk MA patients were 22.6% less likely to exhibit high-risk medication use, 1.6% more likely to adhere to RAS antagonist medications, and 1.5% less likely to have an office visit. Comparing at-risk MA with TM, the MR results for diabetes and statin medication adherence were statistically equivalent (Figure and Table 3).

DISCUSSION

We analyzed 2 large cohorts of patients, all managed by the same physicians and physician groups, across 35 health insurers. Of the 20 measures calculated, we found that patients in at-risk MA payment arrangements were more likely to experience higher-quality care and lower health resource utilization in 16 of the outcomes compared with TM beneficiaries across the 4 domains studied. No differences were found for 4 measures.

The measures considered in this study reflect common conditions and significantly impact health outcomes.[12] They are clinically and economically meaningful. However, many of these measures are viewed as primarily relating to inpatient quality or utilization. It is important to note that the measures looking at avoidance of admissions, readmissions, and disease-specific inpatient admissions are of particular importance because they suggest higher-quality ambulatory care, which is a primary focus of the at-risk MA care model. The prevention of these admissions has important implications for overall patient care. Given the

TABLE 3. Adjusted Risk for At-Risk MA[a] vs TM and Between-Groups Risk Differences for 20 Outcome Metrics: Adjusted Risk Parameters From Logistic Regression Models for Marginal Effects (2016-2019 Data)[b]

Outcome	Average marginal risk		At-risk MA – TM risk difference	Percent difference (relative to TM)	Risk difference *P*
	At-risk MA	TM			
	Mean per 1000 (SE)	Mean per 1000 (SE)	Mean difference per 1000 (95% CI)		
Acute hospital care					
Acute IP admissions	120.07 (1.67)	150.10 (0.80)	−30.03 (−34.84 to −25.21)	−20.0%	< .0001
30-day readmissions	14.28 (0.72)	23.35 (0.48)	−9.07 (−11.41 to −6.74)	−38.8%	< .0001
Avoidance of ED use					
ED visits	273.84 (2.37)	308.87 (1.12)	−35.03 (−41.84 to −28.22)	−11.3%	< .0001
Avoidable ED visits	23.34 (0.93)	28.81 (0.50)	−5.47 (−8.27 to −2.66)	−19.0%	.0001
Primary care–treatable ED visits	50.91 (1.34)	62.34 (0.73)	−11.42 (−15.45 to −7.40)	−18.3%	< .0001
IP through ED	91.79 (1.48)	117.93 (0.72)	−26.13 (−30.44 to −21.83)	−22.2%	< .0001
Avoidance of disease-specific inpatient admissions					
COPD/asthma IP admissions: older adult	3.85 (0.46)	6.76 (0.36)	−2.91 (−4.50 to −1.32)	−43.0%	.0003
Hypertension IP admissions	1.04 (0.21)	1.72 (0.16)	−0.69 (−1.41 to 0.04)	−39.9%	.0632
Heart failure IP admissions	6.70 (0.48)	9.86 (0.29)	−3.16 (−4.65 to −1.66)	−32.0%	< .0001
Bacterial pneumonia IP admissions	3.33 (0.40)	5.05 (0.24)	−1.72 (−2.96 to −0.48)	−34.0%	.0065[c]
UTI IP admissions	2.47 (0.36)	5.38 (0.37)	−2.91 (−4.34 to −1.47)	−54.0%	< .0001
Diabetes lower-extremity amputation	0.50 (0.17)	0.57 (0.07)	−0.08 (−0.55 to 0.40)	−13.3%	.7532
PQI-91 acute composite	5.85 (0.53)	10.20 (0.39)	−4.35 (−6.16 to −2.54)	−42.6%	< .0001
PQI-92 chronic composite	13.67 (0.71)	21.32 (0.49)	−7.65 (−9.98 to −5.31)	−35.9%	< .0001
PQI-93 diabetes composite[d]	2.52 (0.34)	3.97 (0.25)	−1.44 (−2.61 to −0.28)	−36.4%	.0151[c]
Outpatient care					
High-risk medication use	80.35 (1.58)	103.80 (1.01)	−23.45 (−28.49 to −18.42)	−22.6%	< .0001
Office visits	970.00 (1.16)	984.74 (0.15)	−14.74 (−17.28 to −12.20)	−1.5%	< .0001
Medication adherence: RAS	858.20 (3.05)	844.29 (2.15)	13.91 (3.77-24.06)	1.6%	.0072[c]
Medication adherence: diabetes	718.17 (5.89)	719.30 (4.55)	−1.14 (−21.49 to 19.22)	−0.2%	.913
Medication adherence: statin	846.87 (3.12)	839.57 (1.96)	7.30 (−2.61 to 17.22)	0.9%	.149

COPD, chronic obstructive pulmonary disease; CVD, cardiovascular disease; Dis, disease-specific care; ED, emergency department; HCC, Hierarchical Condition Category; IP, inpatient; MA, Medicare Advantage; OP, outpatient care; PQI, Prevention Quality Indicator; RAS, renin-angiotensin system; TM, traditional Medicare; UTI, urinary tract infection.

[a]*At-risk MA* indicates MA beneficiaries cared for under fully accountable care models.

[b]Probability of all outcomes were modeled in the overall cohort. Due to rare-event rates, risks and risk differences are reported on a per-1000 scale. All measures are summarized as annual risk representing the 12-month probability of an outcome. All models, except for PQI-93, were adjusted for age groups, sex, race/ethnicity, dual status, health maintenance organization plan type (for MA), provider groups, calendar year, HCC score version 24, and the following high-level HCC groupings: blood (HCCs 2, 46, 48), CVD (HCCs 82-88, 96, 99, 100, 107, 108), diabetes (HCCs 17-19), injury (HCCs 166-168), kidney (HCCs 134-138), liver (HCCs 27, 28), lung (HCCs 111, 112, 114, 115), neoplasm (HCCs 8-12), psychiatric (HCCs 57-60), skin (HCCs 157-159, 161, 162), and substance use disorder (HCCs 54-56).

[c]The main results are presented with *P* values not corrected for multiple comparisons. Applying a Bonferroni correction would alter the interpretation of the following 3 measures to nonsignificant: (1) bacterial pneumonia IP admissions, (2) PQI-93 diabetes composite, and (3) medication adherence: RAS.

[d]Diabetes was removed from the PQI-93 model because of collinearity with the outcome.

large patient sample treated by the same physicians and the use of statistical controls, the differences observed are likely due to the difference in MA payment arrangements relative to FFS payment arrangements. These results suggest that the at-risk MA infrastructure typically built to manage these arrangements is associated with significantly higher quality and lower health resource utilization.

This study found that at-risk MA patients were slightly less likely to have office visits. The implications of this are unclear. It is possible that at-risk MA may offer services that substitute for office visits and are not captured in claims, including care management and disease management touchpoints. However, if some of these visits were clinically indicated, this could have negative implications for the at-risk MA cohort. We lack

information to draw conclusions on this, and this measure warrants further exploration.

Because the TM cohort in this study had a higher proportion of dually eligible beneficiaries compared with the at-risk MA cohort (20.9% vs 15.3%), we conducted a subanalysis of both cohorts with the dually eligible population excluded (**eAppendix Table 5**). These results were minimally different and remained statistically significant across 15 of the 16 measures favoring at-risk MA, with 1 measure (PQI-93) becoming statistically equivalent. This suggests that the difference in dually eligible beneficiaries between the 2 cohorts did not bias the results of the primary analysis.

Most previous literature focused on broad comparisons of MA to TM. A limited body of research explored differences within the various MA payment arrangements—including 1-sided and 2-sided risk—and FFS models[13,14] (for model definitions, see **eAppendix Table 6**). These studies observed at-risk MA having higher quality and/or efficiency than FFS MA. For example, a recent analysis of quality and efficiency outcomes in at-risk MA compared with FFS MA demonstrated higher quality and efficiency in the at-risk MA cohort in 18 of the same 20 measures that we examined in this study.[15] However, the magnitude of the differences for most of the measures was significantly less than what was seen in the current study of at-risk MA vs TM. Only 1 study has compared at-risk MA with TM, and it found higher quality and efficiency in the at-risk MA arrangement across all 8 measures examined[9]; however, that study was not able to adjust for potential differences among physicians.[9] The data set used in this study is unique in that it relied on the collaborative efforts and willingness to share data among a large number of physician groups and PCPs. This current study finds much more pronounced effects than previous studies and other related work while accounting for potential physician differences, as both cohorts were treated by the same physician groups.

The magnitude of differences observed in this study could be explained by the mix of physician groups in our study, because these groups taking on meaningful risk may be more experienced at managing risk than groups in previous studies. Because both beneficiary cohorts were managed by the same physician groups, there are likely spillover effects from the at-risk MA cohort onto the TM cohort, as physicians tend to manage patients similarly despite different payment arrangements. Given these potential spillover effects, our estimates may understate how much the at-risk payment arrangements are associated with improved outcomes relative to what TM outcomes would be when physicians providing the care did not have substantial at-risk experience.

We propose 2 key explanations for the improved outcomes observed in at-risk payment arrangements. First, physicians in at-risk MA may have adapted their practices to prioritize preventive care, refer selectively to high-performing specialists and facilities, focus on evidence-based medicine, and reduce low-value care. Second, the infrastructure supporting at-risk MA, such as population risk stratification, provider performance feedback, intensive case management, and integrated support services (eg, social workers, behavioral health, pharmacy, and disease management), may be enhancing care delivery. There is heterogeneity in the types and intensity of these interventions across the 17 groups in this study. We did not have the granularity of data to explore these differences. Understanding which interventions are most impactful is an important area for future study.

Limitations

Differences in populations across payment arrangements may exist. Our approach to adjusting for this possibility used observable health, demographic, and clinical risk measures. However, despite including a broad range of factors, we may not have fully accounted for residual, unobservable differences between populations such as health-related social needs or upstream drivers of health status. Our results also may have limited geographical generalizability because the Pacific Division census region was disproportionately represented.

To address potential coding and reporting differences between MA and TM, we conducted a sensitivity analysis adjusting for risk using HCC version 28 instead of HCC version 24 (**eAppendix Table 7**). The effects remained strong and statistically significant, although slightly reduced compared with the version 24 results. Given that the Medicare Payment Advisory Commission (MedPAC) found that chart reviews account for approximately half of the coding differences between MA and TM,[16] we excluded chart reviews when generating RAF scores to improve comparability between the 2 programs. MedPAC has estimated that coding intensity contributed an 11% HCC-RAF score increase from 2016 through 2019 (the study period), inclusive of chart reviews.[17] In this study, the mean HCC-RAF difference between the 2 programs for HCC version 24, excluding chart reviews, was only 5%.

Beneficiaries in TM had a 5.6% higher dual-eligibility status compared with beneficiaries in at-risk MA. This could theoretically affect our analysis, but the subanalysis excluding the dual-eligible population did not support this difference having a significant impact on our results. Finally, given that the MA at-risk population has been shown to be more socioeconomically disadvantaged than the TM population, these socioeconomic differences would probably serve to attenuate rather than amplify our results.[7,18]

CONCLUSIONS

Compared with TM, at-risk MA was associated with higher quality and lower health resource utilization in 16 of 20 measures across 4 domains when care was delivered by the same physician groups practicing under both payment arrangements. These findings, although not causal, suggest that 2-sided–risk MA payment arrangements deliver higher quality and more efficient use of health care resources. As more MA health plans shift to 2-sided risk, this information may be useful to inform CMS policies on payment and service delivery. ■

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REFERENCES

1. Neuman T, Freed M, Fuglesten Biniek J. 10 reasons why Medicare Advantage enrollment is growing and why it matters. KFF. January 30, 2024. Accessed February 6, 2024. https://www.kff.org/medicare/issue-brief/10-reasons-why-medicare-advantage-enrollment-is-growing-and-why-it-matters/
2. *Report to the Congress: Medicare and the Health Care Delivery System*. Medicare Payment Advisory Commission; June 2023. Accessed February 6, 2024. https://www.medpac.gov/wp-content/uploads/2023/06/Jun23_MedPAC_Report_To_Congress_SEC.pdf
3. Agarwal R, Connolly J, Gupta S, Navathe AS. Comparing Medicare Advantage and traditional Medicare: a systematic review. *Health Aff (Millwood)*. 2021;40(6):937-944. doi:10.1377/hlthaff.2020.02149
4. Curto V, Einav L, Finkelstein A, Levin J, Bhattacharya J. Health care spending and utilization in public and private Medicare. *Am Econ J Appl Econ*. 2019;11(2):302-332. doi:10.1257/app.20170295
5. Duggan M, Gruber J, Vabson B. The consequences of health care privatization: evidence from Medicare Advantage exits. *Am Econ J Econ Policy*. 2018;10(1):153-186. doi:10.1257/pol.20160068
6. Drzayich Antol D, Schwartz R, Caplan A, et al. Comparison of health care utilization by Medicare Advantage and traditional Medicare beneficiaries with complex care needs. *JAMA Health Forum*. 2022;3(10):e223451. doi:10.1001/jamahealthforum.2022.3451
7. Teigland C, Brot-Goldberg Z, Bilder S, et al. Harvard-Inovalon Medicare study: the importance of plan design in Medicare Advantage. Inovalon white paper. 2024. Accessed April 16, 2024. https://www.inovalon.com/wp-content/uploads/2024/04/INS-24-0112-Payer-Insights-Harvard-Campaign-Whitepaper-4-Final.pdf
8. Comparison of BASIC track and ENHANCED track version 6: Shared Savings Program participation options for performance year 2024. CMS Medicare Shared Savings Program. March 2023. Accessed February 6, 2024. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ssp-aco-participation-options.pdf
9. Cohen K, Ameli O, Chaisson CE, et al. Comparison of care quality metrics in 2-sided risk Medicare Advantage vs fee-for-service Medicare programs. *JAMA Netw Open*. 2022;5(12):e2246064. doi:10.1001/jamanetworkopen.2022.46064
10. *Shared Savings and Losses and Assignment Methodology*. CMS. February 2021. Accessed February 6, 2024. https://www.cms.gov/files/document/medicare-shared-savings-program-shared-savings-and-losses-and-assignment-methodology-specifications.pdf-0
11. Prevention Quality Indicators technical specifications—version v2023. Agency for Healthcare Research and Quality. August 2023. Accessed February 26, 2024. https://web.archive.org/web/20231206195346/https://qualityindicators.ahrq.gov/measures/PQI_TechSpec
12. McDermott KW, Roemer M. Most frequent principal diagnoses for inpatient stays in U.S. hospitals, 2018. Healthcare Cost and Utilization Project statistical brief 277. July 2021. Accessed February 6, 2024. https://hcup-us.ahrq.gov/reports/statbriefs/sb277-Top-Reasons-Hospital-Stays-2018.pdf
13. Mandal AK, Tagomori GK, Felix RV, Howell SC. Value-based contracting innovated Medicare Advantage healthcare delivery and improved survival. *Am J Manag Care*. 2017;23(2):e41-e49.
14. Gondi S, Li Y, Drzayich Antol D, Boudreau E, Shrank WH, Powers BW. Analysis of value-based payment and acute care use among Medicare Advantage beneficiaries. *JAMA Netw Open*. 2022;5(3):e222916. doi:10.1001/jamanetworkopen.2022.2916
15. Cohen KR, Vabson B, Podulka J, et al. Medicare risk arrangement and use and outcomes among physician groups. *JAMA Netw Open*. 2025;8(1):e2456074. doi:10.1001/jamanetworkopen.2024.56074
16. The Medicare Advantage program: status report. In: *Report to the Congress: Medicare Payment Policy*. Medicare Payment Advisory Commission; March 2021:353-403. Accessed October 30, 2024. https://www.medpac.gov/wp-content/uploads/2021/10/mar21_medpac_report_ch12_sec.pdf
17. *Report to the Congress: Medicare Payment Policy*. Medicare Payment Advisory Commission; March 2024. Accessed April 19, 2024. https://www.medpac.gov/wp-content/uploads/2024/03/Mar24_MedPAC_Report_To_Congress_SEC.pdf.
18. Bilder S, Brot-Goldberg Z, Jones B, et al. Harvard-Inovalon Medicare study: who enrolls in Medicare Advantage vs. Medicare fee-for-service. Inovalon white paper. 2023. Accessed October 30, 2024. https://www.inovalon.com/wp-content/uploads/2023/06/Harvard-Inovalon-Medicare-Study.pdf

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