

By Eran Politzer, Timothy S. Anderson, John Z. Ayanian, Vilsa Curto, John A. Graves, Laura A. Hatfield, Jeffrey Souza, Alan M. Zaslavsky, and Bruce E. Landon

DOI: 10.1377/
hlthaff.2023.00803
HEALTH AFFAIRS 43,
NO. 3 (2024): 372–380
©2024 Project HOPE—
The People-to-People Health
Foundation, Inc.

Primary Care Physicians In Medicare Advantage Were Less Costly, Provided Similar Quality Versus Regional Average

Eran Politzer (eran.politzer@mail.huji.ac.il), Hebrew University of Jerusalem, Jerusalem, Israel; and Harvard University, Boston, Massachusetts.

Timothy S. Anderson, University of Pittsburgh, Pittsburgh, Pennsylvania.

John Z. Ayanian, University of Michigan, Ann Arbor, Michigan.

Vilsa Curto, Harvard University.

John A. Graves, Vanderbilt University, Nashville, Tennessee.

Laura A. Hatfield, Harvard University.

Jeffrey Souza, Harvard University.

Alan M. Zaslavsky, Harvard University.

Bruce E. Landon, Harvard University and Beth Israel Deaconess Medical Center, Boston, Massachusetts.

ABSTRACT The use of many services is lower in Medicare Advantage (MA) compared with traditional Medicare, generating cost savings for insurers, whereas the quality of ambulatory services is higher. This study examined the role of selective contracting with providers in achieving these outcomes, focusing on primary care physicians. Assessing primary care physician costliness based on the gap between observed and predicted costs for their traditional Medicare patients, we found that the average primary care physician in MA networks was \$433 less costly per patient (2.9 percent of baseline) compared with the regional mean, with less costly primary care physicians included in more networks than more costly ones. Favorable selection of patients by MA primary care physicians contributed partially to this result. The quality measures of MA primary care physicians were similar to the regional mean. In contrast, primary care physicians excluded from all MA networks were \$1,617 (13.8 percent) costlier than the regional mean, with lower quality. Primary care physicians in narrow networks were \$212 (1.4 percent) less costly than those in wide networks, but their quality was slightly lower. These findings highlight the potential role of selective contracting in reducing costs in the MA program.

Enrollment in Medicare Advantage (MA) has risen steadily during the past two decades, with the share of eligible Medicare beneficiaries enrolled in private MA plans reaching just over 50 percent in January 2023.¹ Compared with traditional Medicare beneficiaries, MA enrollees have been found to have lower use of specialists, emergency departments, and elective procedures,^{2–4} creating cost savings for MA plans, and they have been found to be more likely to receive higher-quality ambulatory services.⁵ These utilization differences may be affected by unmeasured favorable selection of enrollees into MA plans or by plans' care management and utilization management activities. This article

considers whether a third potential mechanism contributes to these differences: MA plans' selective contracting with providers for participation in MA networks.

MA networks can be broad or narrow, but they almost always exclude some providers in a market.^{6–10} Some authors have hypothesized that MA plans selectively include cost-efficient and high-quality providers in their networks as a strategy to achieve lower spending and higher quality.¹¹ Selection of primary care physicians may help achieve these outcomes, as these physicians manage the continuum of care provided to their patients, including through referrals to particular specialists and hospitals.^{12–14} Plans may also use selective contracting as a tool to attract more

profitable enrollees.

In this national observational study, we examined whether primary care physicians included in MA networks in 2019 differed in costliness and quality during 2016–18 compared with the average primary care physician in their area. We also examined how findings differed for narrow versus broad networks.

Study Data And Methods

Our analysis quantified the costliness and quality of primary care physicians by studying care provided to their traditional Medicare patients. We compared the mean costliness and quality of primary care physicians included in MA networks with their regional average, using data for these physicians' traditional Medicare patients. We repeated the comparison for physicians who were excluded from all MA networks.

TRADITIONAL MEDICARE PATIENT SAMPLE To quantify the costliness and quality of primary care physicians, we used a 20 percent sample of traditional Medicare beneficiaries, pooling three years of data (2016–18) to include sufficient sample sizes per physician. Our analytic sample included beneficiaries who had both Parts A and B coverage for the whole year (or until they died) and those who were not enrolled in an MA plan in any two consecutive months throughout the year. We excluded patient-years for beneficiaries in their first year in Medicare or in a year when they moved. We also excluded patients with end-stage renal disease.

PATIENT AND PHYSICIAN CHARACTERISTICS Using the Medicare Master Beneficiary Summary File for 2016–18, we assessed beneficiaries' age, sex, race and ethnicity, and dual Medicaid enrollment and whether disability was the reason for their original Medicare eligibility. Annual cost data from the Master Beneficiary Summary File included the amount spent by Medicare, as well as out-of-pocket payments and payments from other insurers. This cost included spending on prescription drugs in Medicare Part D. We used diagnoses that were recorded in claims from the preceding year to calculate prospective risk scores, using the Centers for Medicare and Medicaid Services (CMS)–Hierarchical Condition Categories risk-adjustment model.

We defined primary care physicians as those identified with a general practice, family practice, internal medicine, or geriatric medicine specialty in the Medicare claims data. Additional primary care physician characteristics, including gender and professional affiliations, were drawn from the December 2018 CMS Care Compare Doctors and Clinicians national downloadable file.¹⁵

ATTRIBUTING BENEFICIARIES TO PRIMARY CARE PHYSICIANS To estimate primary care physicians' costliness and quality, we identified the physician most responsible for managing and coordinating the care of each beneficiary. We followed the Medicare Shared Saving Program's attribution rule to annually attribute traditional Medicare beneficiaries to primary care physicians based on outpatient office-based evaluation and management claims from the CMS Carrier files for the period 2016–18 (excluding claims in nursing facilities and inpatient settings), attributing beneficiaries to the physician with the highest total payments.¹⁶ We excluded the almost 40 percent of beneficiaries who did not see a primary care physician in any given year—a share consistent with prior work.¹⁷

IDENTIFYING MEDICARE ADVANTAGE PRIMARY CARE PHYSICIAN NETWORKS To identify primary care physicians' participation in MA networks, we used 2019 data from Ideon (formerly Vericred), a firm that collects data on network participation from insurers and online plan directories. Such directories are notoriously prone to errors, but the Ideon data set and our analysis minimized this issue through several validation methods (see more details in online appendix section 1).¹⁸ Among other steps, we followed prior research⁶ and validated primary care physicians' practice locations in specific markets and their primary care specialty using additional 2019 data from IQVIA to capture information on office-based physicians, including their clinics' locations, and from the CMS Care Compare Doctors and Clinicians. We also used specialty data from traditional Medicare claims and data from the Master Beneficiary Summary File on the location of attributed traditional Medicare patients. We elected to focus on individual primary care physicians, rather than practices (defined by Taxpayer Identification Numbers), because for many practices in our data, some primary care physicians participated in MA networks, whereas others did not. We defined networks at the geographic level of the hospital referral region (HRR) and excluded networks in Puerto Rico and the other US territories. We focused on HRRs rather than counties because MA plans generally are offered in multiple counties within a geographic area, and the affiliated networks are not constructed at the county level. Our conclusions remained the same when we conducted a county-level analysis (see exhibit S6 in appendix section 3).¹⁸ Nonstandard MA plans, including employer group waiver plans, were excluded from the Ideon data.

We used the 2019 CMS Plan Characteristics file to link networks to their parent insurer. Using the Master Beneficiary Summary File and

Ideon's data on the MA contracts linked to each MA network, we calculated the number of MA enrollees in each HRR who used each network. We excluded from our sample very small network-HRRs with either fewer than fifty primary care physicians or fewer than fifty enrollees. HRRs with no MA network were excluded from the analysis. We use the term "network-HRR" to refer to a subsection of an MA network that only includes primary care physicians from a specific HRR. Appendix section 3 details the effects of these selection criteria on our sample.¹⁸

STATISTICAL ANALYSES TO MEASURE PRIMARY CARE PHYSICIANS' COSTLINESS To assess primary care physicians' costliness, we estimated a linear regression model of patients' annual costs that included a fixed effect for each physician, controlled for patients' county of residence and their risk score, and also for the year. After estimation, the primary care physician fixed effects were "shrunk" toward their county average, using the empirical Bayes method.¹⁹ The resulting primary care physician effects were then standardized to the average in their HRR. See appendix section 5 for further details on these calculations.¹⁸

The primary care physician-level fixed effects measured the extent to which average patient spending for each physician was higher or lower than the costs predicted by patients' risk scores and county of residence. As risk scores and county determine payments to MA plans, the estimated fixed effects can be interpreted as the relative costliness of each primary care physician to the MA plan.

To examine the extent to which our costliness measures reflected selection of patients to primary care physicians' panels (versus the direct effect of primary care physicians' practice style), we examined patients' characteristics by the costliness quintile of their primary care physicians. In addition, in a sensitivity analysis, we estimated an alternative model of patients' costs that also controlled for their race, Medicaid eligibility, disability status, and whether they died during the year.

MEASURING PRIMARY CARE PHYSICIAN QUALITY For each physician, we computed eight Healthcare Effectiveness Data and Information Set (HEDIS) quality measures²⁰ that could be calculated using claims for their attributed traditional Medicare patients. We included two measures for comprehensive diabetes care, one for breast cancer screening in women at ages 65–69, one for osteoporosis management in women who had a fracture, two for pharmacotherapy management of chronic obstructive pulmonary disorder exacerbation, and two for annual monitoring for patients on persistent medications. The measures were mostly uncorrelated (see ex-

Our findings suggest that managed care tools, particularly selective contracting with primary care physicians, contribute to lower costs in MA.

hibit S22 in appendix section 8).¹⁸

CALCULATING NETWORK-HRR-LEVEL AND NATIONAL-LEVEL QUALITY AND COSTLINESS MEASURES We calculated HEDIS quality measures at the network-HRR level as the mean quality of in-network primary care physicians. We then calculated "network-HRR quality," a composite quality measure that is the simple average of all HEDIS measures in the network-HRR. Similar to the underlying HEDIS measures, the composite measure ranged from 1 to 100 percent, indicating the average share of patients who received care according to clinical guidelines.

"Network-HRR costliness" is the mean costliness of the primary care physicians included in each network-HRR. For primary care physicians excluded from all MA networks, we calculated quality and costliness at the HRR level, as if they formed a separate network-HRR. We also calculated the overall "HRR costliness" and "HRR quality," using the means of all primary care physicians in the HRR. These HRR means served as benchmarks for comparison of network-HRRs' costliness and quality.

We calculated the costliness and quality gaps between each network-HRR and the HRR mean. These gaps measured how different the average primary care physician in the network was from the surrounding market and could indicate the extent of selective contracting. For national inference, we calculated an average of the network-HRR measures, weighted by the number of MA enrollees who used each network-HRR (clustering the standard errors at the network-HRR level). For primary care physicians who were excluded from all MA networks, we calculated an average of the HRR-level means, weighted by the number of traditional Medicare beneficiaries in each HRR (clustering errors at the HRR level).

HETEROGENEITY We examined heterogeneity in our results by network breadth. Network-

HRRs were defined as narrow if they included at most 15 percent of the primary care physicians in the HRR and were defined as wide if they included at least 35 percent of primary care physicians in the HRR. We also examined heterogeneity among the five largest MA insurers (see appendix section 6).¹⁸

LIMITATIONS We acknowledge several limitations. Our approach relied on a key assumption, which is that primary care physicians' costliness and quality in traditional Medicare and MA were strongly correlated, so information on the treatment of traditional Medicare patients was relevant to MA selective contracting. The required assumption is weaker than the "norms hypothesis," which postulates that physicians adopt a mostly uniform practice style, best suited to the insurance mix across their patients.²¹ Our assumption allowed us to interpret within-traditional Medicare results as indicative of primary care physician-driven cost and quality differences between MA and traditional Medicare patients. Our approach had the advantage that MA plans' incentives to physicians or patients did not directly affect traditional Medicare patients' care, which therefore better captured the practice style and coding practices of primary care physicians. A limitation of this approach is that primary care physicians who exclusively treated MA patients were not represented in our sample.

There were additional limitations in our use of contemporary traditional Medicare data. First, MA policies may have spillovers to traditional Medicare patients and affect their care.²²⁻²⁶ If spillovers from MA were substantial for primary care physicians, any cross-sectional difference we observed may partly have been the result of inclusion in MA networks, and not the reason for this inclusion. Second, some primary care physicians in our sample had small panels of attributed traditional Medicare patients, causing their costliness measures to be heavily shrunk to the county average. However, our results remained very similar when we excluded network-HRRs where primary care physicians had an average panel of fewer than fifty traditional Medicare patients.

Inaccurate provider directories may have introduced errors into the Ideon data set. However, we verified primary care physicians' specialties and locations using other data sources.

Last, our costliness measures were estimated using patient-year observations, ignoring possible serial correlation between the predicted versus actual costs of the same patient over the years.

Study Results

We linked data on 4,456,037 traditional Medicare patients (9,975,761 patient-years) to 151,679 primary care physicians. During 2016-18, the average primary care physician had sixty-six attributed patient-years from the 20 percent Carrier file. Most primary care physicians (81 percent) were included in at least one MA network, ranging from 69 percent in the fifth percentile of HRRs to 90 percent in the ninety-fifth percentile. Women made up 58 percent of the attributed beneficiaries, and the average age was seventy-four. Most patients were White (85 percent), with 7.8 percent Black, 1.5 percent Hispanic, and 1.9 percent Asian. Patients' mean annual costs were \$15,431. The national HRR-level mean of patients' costs was \$14,999 (data not shown).

Our sample included 3,719 network-HRR combinations: 495 networks in 299 HRRs, with 363 of these networks spanning multiple HRRs (ten on average). These network-HRRs were used by 13,756,550 MA enrollees, out of 23.3 million MA enrollees in December 2019. The average network-HRR operated in an HRR with 1,905 primary care physicians (median: 1,166) and 17 MA networks (data not shown).

Exhibit 1 presents unweighted summary statistics for the network-HRRs in our sample and for primary care physicians who were excluded from all MA networks. Network-HRRs had a mean of 416 in-network primary care physicians (27 percent of all primary care physicians in the HRR).

Network-HRRs had an average of 306 primary care physicians with attributed traditional Medicare patients in our sample, with each primary care physician having an average of eighty-two attributed patient-years. In each HRR, there were, on average, ninety-seven primary care physicians who were excluded from all MA networks (appearing in the "TM-only" column of exhibit 1). These physicians had an average of thirty-three traditional Medicare patient-years. The share of female physicians was higher among primary care physicians who participated in MA networks, and the share of primary care physicians who participated in a Medicare accountable care organization was higher among those who participated in MA networks. The mortality rate of patients attributed to MA primary care physicians each year was lower by 34 percent than the annual mortality rate for patients of primary care physicians excluded from MA networks (27 deaths per 1,000 population versus 41 deaths).

COSTLINESS OF PRIMARY CARE PHYSICIANS

The average primary care physician who participated in MA networks was \$375 less costly than

EXHIBIT 1

Characteristics of traditional Medicare (TM) and Medicare Advantage (MA) primary care physicians (PCPs) and their patients, by participation in MA networks and by network breadth, 2019

Characteristics	TM-only PCPs ^a	MA PCPs ^b	Narrow networks ^c	Wide networks ^c
PCPs				
Female (%)	30	37	37	38
No. of years since graduation	23	24	24	23
Group affiliation (%)	86	87	83	92
Hospital affiliation (%)	85	88	80	94
In accountable care organization (%)	43	55	51	59
Patients				
No. of attributed patient-years per PCP	33	82	73	82
Mean age (years)	73	73	73	73
White (%)	84	86	82	91
Black (%)	8	7	8	5
Dual enrollment (%)	19	17	20	14
Annual mortality rate per 1,000	41	27	27	27
MA network-HRRs				
Network-HRR breadth ^d (%)	— ^e	27	9	43
No. of in-network PCPs per MA network	— ^e	416	235	519
No. of PCPs with attributed TM patients	97	306	172	379
Sample counts				
No. of TM beneficiaries	39,997,547	— ^e	— ^e	— ^e
No. of enrolled MA beneficiaries	— ^e	13,756,550	3,139,735	3,685,475
No. of sample PCPs	28,504	123,175	19,230	44,097
No. of network-HRRs	— ^e	3,719	848	1,002

SOURCE Authors' analysis of data from the following sources. For PCP participation in MA networks, we used 2019 data from Ideon. PCP characteristics were drawn from the Centers for Medicare and Medicaid Services' December 2018 Care Compare Doctors and Clinicians file, from 2019 IQVIA data, and from 2019 Ideon data. Attributed patients' data came from 2016–18 claims files for a 20 percent sample of TM beneficiaries. ^aMeans were calculated at the HRR level for PCPs who treated only TM patients and then averaged nationally. ^bFor PCPs who participated in MA networks, means were calculated at the network-HRR level and then averaged nationally. ^cMeans were calculated at the network-HRR level and then averaged nationally. Statistics were calculated separately for PCPs who participated in narrow MA network-HRRs (defined as including at most 15 percent of the PCPs in the HRR) and PCPs who participated in wide MA network-HRRs (defined as including at least 35 percent of the PCPs in the HRR). ^dThe breadth of each network-HRR was measured as the share of the HRR's PCPs who were in network. ^eNot applicable.

the average of all primary care physicians in the HRR (exhibit 2). Weighted by enrollment, the average primary care physician who participated in the average MA network was \$433 less costly than the average of all primary care physicians in the HRR (2.9 percent of the national HRR-level mean of patients' costs). Exhibits S19 and S20 in appendix section 7 demonstrate that primary care physicians who generated lower costs were included in more network-HRRs, and network-HRRs with less costly primary care physicians had higher MA enrollment.¹⁸ The small group of primary care physicians who served only traditional Medicare patients was \$1,534 more costly than the average of all primary care physicians in the HRR (exhibit 2). When we examined costliness by network breadth, we found that primary care physicians in the average narrow network were \$212 (1.4 percent of baseline) less costly than primary care physicians in the average wide network (exhibit 3).

Exhibit S13 in appendix section 5 presents the characteristics of patients by the costliness quin-

tile of their associated primary care physicians.¹⁸ Compared with the lowest quintile, physicians in the highest (most costly) quintile served more Black patients, fewer Asian patients, and more patients who were dually enrolled in Medicare and Medicaid; the mortality rate among their patients was 2.4 times higher.

PRIMARY CARE PHYSICIAN QUALITY Looking at primary care physicians by MA network participation, we found that the quality of these physicians in the average MA network-HRR was similar to the quality of all primary care physicians in the HRR, just 0.1 percentage point above the HRR mean (exhibit 2). The quality of primary care physicians excluded from all MA networks in the average HRR was lower than the quality of all primary care physicians in the HRR, by 2.1 percentage points (exhibit 2). Looking at primary care physicians by network breadth, we found that the quality of these physicians in the average narrow network-HRR was slightly lower than that of primary care physicians in the average wide network-HRR, by 1.1 percentage points (ex-

EXHIBIT 2

Primary care physicians' (PCPs) costliness and quality, relative to hospital referral region (HRR) mean, by inclusion in Medicare Advantage (MA) networks, 2019

	TM-only PCPs	MA PCPs	MA network-HRRs	MA versus TM-only difference
PCPs' costliness^{a,b}				
Amount (\$)	1,534	-375	— ^e	-1,909
95% CI	1,524, 1,543	-377, -373	— ^e	-1,915, -1,903
Network-HRRs' costliness (weighted by enrollment)^{a,c}				
Amount (\$)	1,617	— ^e	-433	-2,050
95% CI	1,499, 1,734	— ^e	-469, -397	-2,172, -1,927
Network-HRRs' quality (weighted by enrollment)^d				
Percentage points	-2.1	— ^e	0.1	2.1
95% CI	-2.4, -1.7	— ^e	-0.3, -0.4	1.7, 2.6

SOURCE Authors' analysis of data from the following sources. For PCP network participation, we used 2019 data from Ideon. PCPs' HRR location was determined using December 2018 data from the Centers for Medicare and Medicaid Services Care Compare Doctors and Clinicians file, 2019 IQVIA data, and 2019 Ideon data. Costliness and quality measures were estimated using 2016–18 claims files for a 20 percent sample of traditional Medicare (TM) beneficiaries. ^aPCPs' costliness was measured as the difference between the observed annual costs of their TM patients and their predicted costs, based on risk scores and county of residence. All measures in the table examine differences in costliness relative to the average of all PCPs in the same HRR. The national average of HRR-level means of costs per patient-year in our sample of patients attributed to TM PCPs was \$14,999. Annual cost data included the amount spent by Medicare, out-of-pocket payments, and payments from other insurers. This included spending on prescription drugs in Part D. ^bAverage costliness was examined at the PCP level. ^cAn average of the mean costliness of PCPs in each network-HRR was calculated, weighted by the number of MA enrollees using each network-HRR. For PCPs not participating in any MA network, we calculated the average of HRR-level means, weighted by the number of TM beneficiaries in the HRR. ^dAn average of the mean quality of PCPs in each network-HRR was calculated, weighted by the number of MA enrollees using each network-HRR. For PCPs not participating in any MA network, the measure is an average of HRR-level means, weighted by the number of TM beneficiaries in the HRR. The mean quality in our sample was 69.9%, referring to the average share of patients who received specified care according to clinical guidelines; details are in appendix exhibit S21 (see note 18 in text). ^eNot applicable.

hibit 3). Exhibit S21 in appendix section 7 presents the eight HEDIS measures underlying our assessment of quality.¹⁸

Exhibit 4 presents primary care physician costliness and quality in 892 network-HRRs with above-average MA enrollment (at least 3,700 enrollees) and the HRR-level means of costliness and quality for primary care physicians excluded from MA networks. These excluded primary care physicians (denoted by gray circles) were markedly concentrated in the lower-right quadrant, indicating that they had both higher costliness and lower quality compared with the means for all primary care physicians in their HRRs. MA networks were mostly concentrated in the two left quadrants, indicating lower costliness than their HRR average. Exhibit 4 demonstrates that the costliness and quality in narrow network-HRRs varied more than in wide network-HRRs and that many narrow network-HRRs had markedly lower costliness or quality, or both, than the average wide network-HRR. Exhibit S18 in appendix section 7 presents 95% confidence ellipses of costliness and quality for the whole sample.¹⁸

SENSITIVITY ANALYSIS Our results were robust to estimating costliness using an alternative

model that controlled for a richer set of patients' characteristics (exhibit S11 in appendix section 5),¹⁸ shrinking our main estimates by only 11–13 percent.

Discussion

In this national study, we found that primary care physicians who participated in MA networks in 2019 were less costly to MA plans than the average of all primary care physicians in the same HRR while providing similar quality of care. These findings provide insights into one mechanism that may lower MA plans' spending and increase their profits: selective contracting with providers. Whether plans directly choose which providers to include in their networks or offer contract terms that deter certain providers from joining, the resulting selection of primary care physicians has the potential to improve plans' margins. Additional evidence for selective contracting comes from examining primary care physicians who were excluded from all MA networks; these physicians were markedly more costly and had lower quality than the average for all primary care physicians in their HRRs. We found that selection of less costly primary

EXHIBIT 3

Primary care physicians' (PCPs) costliness and quality, relative to hospital referral region (HRR) mean, by network breadth, 2019

	Narrow networks ^a	Wide networks ^b	Narrow versus wide difference
PCPs' costliness ^{c,d}			
Amount (\$)	-466	-317	-149
95% CI	-473, -459	-319, -315	-155, -143
Network-HRRs' costliness (weighted by enrollment) ^e			
Amount (\$)	-557	-345	-212
95% CI	-676, -438	-366, -325	-333, -91
Network-HRRs' quality (weighted by enrollment) ^f			
Percentage points	-0.8	0.3	-1.1
95% CI	-1.9, 0.2	0.3, 0.4	-2.2, -0.2

SOURCE Authors' analysis of data from the following sources. For PCP network participation and network breadth, we used 2019 data from Ideon. PCPs' HRR location was determined using December 2018 data from the Centers for Medicare and Medicaid Services Care Compare Doctors and Clinicians file, 2019 IQVIA data, and 2019 IDeon data. Costliness and quality measures were estimated using 2016–18 claims files for a 20 percent sample of traditional Medicare (TM) beneficiaries. ^aNarrow Medicare Advantage (MA) network-HRRs include at most 15 percent of the PCPs in the HRR. ^bWide MA network-HRRs include at least 35 percent of the PCPs in the HRR. ^cPCPs' costliness was measured as the difference between the observed annual costs of their TM patients and their predicted costs, based on risk scores and county of residence. All measures in the table examine differences in costliness relative to the average of all PCPs in the same HRR. The national average of HRR-level means of costs per patient-year in our sample of patients attributed to TM PCPs was \$14,999. Annual cost data included the amount spent by Medicare, out-of-pocket payments, and payments from other insurers. This included spending on prescription drugs in Part D. ^dAverage costliness was examined at the PCP level. ^eAn average of the mean costliness of PCPs in each network-HRR was calculated, weighted by the number of MA enrollees using each network-HRR. For PCPs not participating in any MA network, we calculated the average of HRR-level means, weighted by the number of TM beneficiaries in the HRR. ^fAn average of the mean quality of PCPs in each network-HRR was calculated, weighted by the number of MA enrollees using each network-HRR. For PCPs not participating in any MA network, the measure is an average of HRR-level means, weighted by the number of TM beneficiaries in the HRR. The mean quality in our sample was 69.9%, referring to the average share of patients who received specified care according to clinical guidelines; details are in appendix exhibit S21 (see note 18 in text).

care physicians was stronger in narrow MA networks compared with wide networks and that there was slightly lower average quality in these narrow networks.

Relatively little research has studied the extent to which MA plans select providers on the basis of their performance. One study suggested that MA plans selected average-quality hospitals, excluding both high- and low-quality hospitals.²⁷ Others have studied the star ratings of plans with narrow versus wide networks without directly examining the physicians in these networks.^{8–10}

Because patients were not randomly assigned to primary care physicians, our costliness measure is not the causal effect of these physicians' practice style on costs. Our findings that patients of the costliest quintile of primary care physicians had higher mortality rates and higher shares of Black patients suggest that costliness was indeed partly a result of selective sorting of patients to primary care physicians. However, from the point of view of the MA plan, a primary care physician is less costly either if they causally decrease the costs of their patients or if they manage to attract less costly patients to begin with. Hence, selective contracting with primary care physicians may also function as a mecha-

nism through which plans can select more profitable enrollees. Primary care physicians may also be less costly to MA plans if they code their patients more intensively than the average primary care physician in their area, increasing plans' revenues without a similar increase in costs. Our costliness measure essentially summed up these three possible effects, all of which influence the profits of MA insurers and thus may affect selective contracting. Our results were robust to estimating costliness using an alternative model that controlled for a richer set of patients' characteristics. This could indicate that the lion's share of our costliness measure could be attributed to primary care physicians' causal effect on costs.

Our finding that narrow MA networks included less costly primary care physicians is consistent with prior evidence that plans with narrow networks have lower premiums,²⁸ they reduce quantities of care and prices paid to providers,²⁹ and they shift care from hospitals and specialists to primary care.²⁹ Several studies have demonstrated how excluding costly hospitals may allow insurers to avoid unprofitable enrollees.^{30,31}

EXHIBIT 4**Primary care physicians' costliness and quality, by inclusion in Medicare Advantage (MA) networks and by network-hospital referral region (network-HRR) breadth, 2019**

Primary care physician quality versus mean of HRR (percentage points)



SOURCE Authors' analysis of data from the following sources. For primary care physicians' MA network participation and network-HRR breadth, we used 2019 data from Ideon. Primary care physicians' HRR location was determined using December 2018 data from the Centers for Medicare and Medicaid Services Care Compare Doctors and Clinicians file, 2019 IQVIA data, and 2019 Ideon data. Costliness and quality measures were estimated using 2016–18 claims files for a 20 percent sample of traditional Medicare (TM) beneficiaries. **NOTES** The figure shows the mean costliness and quality of primary care physicians in 892 network-HRRs with above-average MA enrollment (at least 3,700 enrollees). Network-excluded primary care physicians are treated as if they formed separate network-HRRs ("TM-only HRRs"), with their cost and quality calculated at the HRR level. Narrow MA network-HRRs include at most 15% of the primary care physicians in an HRR. Wide MA network-HRRs include at least 35% of the primary care physicians in an HRR. Network-HRRs with mean costliness less than -\$2,000 and greater than \$2,000 were excluded. For network-HRRs, circle size represents the relative number of MA enrollees using each network-HRR. For network-excluded primary care physicians, circle size represents the relative number of TM beneficiaries in each HRR.

Conclusion

Our findings suggest that managed care tools, particularly selective contracting with primary care physicians, contribute to lower costs in MA. This may create a trade-off for policy makers shaping network adequacy regulations. The more the rules require improved access, the more likely they are to limit the scope of selective contracting, potentially increasing costs for MA insurers, limiting their ability to offer additional

benefits to enrollees. Although our results indicate that selective contracting by primary care physicians' costliness is mainly related to these physicians' practice style, selective contracting may also serve as a mechanism for patient selection by MA plans. When evaluating MA networks, regulators could scrutinize efforts by MA plans to select healthier patients through selective contracting with physicians. ■

This research was presented at the International Health Economics Association World Congress on Health Economics in Cape Town, South Africa,

July 12, 2023. This work was supported by the National Institute on Aging, National Institutes of Health (Grant No. 5P01AG032952-13). To access the

authors' disclosures, click on the Details tab of the article online.

NOTES

- 1 Biniek JF, Freed M, Damico A, Neuman T. Half of all eligible Medicare beneficiaries are now enrolled in private Medicare Advantage plans [Internet]. San Francisco (CA): KFF; 2023 May 1 [cited 2024 Jan 10]. Available from: <https://www.kff.org/policy-watch/half-of-all-eligible-medicare-beneficiaries-are-now-enrolled-in-private-medicare-advantage-plans/>
- 2 Landon BE, Zaslavsky AM, Saunders RC, Pawlson LG, Newhouse JP, Ayanian JZ. Analysis of Medicare Advantage HMOs compared with traditional Medicare shows lower use of many services during 2003–09. *Health Aff (Millwood)*. 2012; 31(12):2609–17.
- 3 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):302–32.
- 4 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):153–86.
- 5 Ayanian JZ, Landon BE, Zaslavsky AM, Saunders RC, Pawlson LG, Newhouse JP. Medicare beneficiaries more likely to receive appropriate ambulatory services in HMOs than in traditional Medicare. *Health Aff (Millwood)*. 2013;32(7):1228–35.
- 6 Graves JA, Nshuti L, Everson J, Richards M, Buntin M, Nikpay S, et al. Breadth and exclusivity of hospital and physician networks in US insurance markets. *JAMA Netw Open*. 2020;3(12):e2029419.
- 7 Feyman Y, Figueroa JF, Polsky DE, Adelberg M, Frakt A. Primary care physician networks in Medicare Advantage. *Health Aff (Millwood)*. 2019;38(4):537–44.
- 8 Meyers DJ, Rahman M, Trivedi AN. Narrow primary care networks in Medicare Advantage. *J Gen Intern Med*. 2022;37(2):488–91.
- 9 Jacobson G, Rae M, Neuman T, Orgera K, Boccuti C. Medicare Advantage: how robust are plans' physician networks? [Internet]. San Francisco (CA): KFF; 2017 Oct 5 [cited 2024 Jan 10]. Available from: <https://www.kff.org/medicare/report/medicare-advantage-how-robust-are-plans-physician-networks/>
- 10 Sen AP, Meiselbach MK, Anderson KE, Miller BJ, Polsky D. Physician network breadth and plan quality ratings in Medicare Advantage. *JAMA Health Forum*. 2021;2(7):e211816.
- 11 Landon BE, Wilson IB, Cleary PD. A conceptual model of the effects of health care organizations on the quality of medical care. *JAMA*. 1998;279(17):1377–82.
- 12 Fadlon I, Van Parys J. Primary care physician practice styles and patient care: evidence from physician exits in Medicare. *J Health Econ*. 2020; 71:102304.
- 13 Cutler D, Skinner JS, Stern AD, Wennberg D. Physician beliefs and patient preferences: a new look at regional variation in health care spending. *Am Econ J Econ Policy*. 2019;11(1):192–221.
- 14 Currie J, Zhang J. Doing more with less: predicting primary care provider effectiveness [Internet]. Cambridge (MA): National Bureau of Economic Research; 2021 Jun [last updated 2022 Jan; cited 2024 Jan 10]. (NBER Working Paper No. 28929). Available from: <https://www.nber.org/papers/w28929>
- 15 Centers for Medicare and Medicaid Services. Doctors and Clinicians [data set] [Internet]. Baltimore (MD): CMS; [cited 2024 Jan 10]. Available from: <https://data.cms.gov/provider-data/topics/doctors-clinicians>
- 16 McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early performance of accountable care organizations in Medicare. *N Engl J Med*. 2016;374(24):2357–66.
- 17 Barnett ML, Bitton A, Souza J, Landon BE. Trends in outpatient care for Medicare beneficiaries and implications for primary care, 2000 to 2019. *Ann Intern Med*. 2021; 174(12):1658–65.
- 18 To access the appendix, click on the Details tab of the article online.
- 19 Morris CN. Parametric empirical Bayes inference: theory and applications. *J Am Stat Assoc*. 1983; 78(381):47–55.
- 20 National Committee for Quality Assurance. HEDIS measures and technical resources [Internet]. Washington (DC): NCQA; c 2024 [cited 2024 Jan 10]. Available from: <https://www.ncqa.org/hedis/measures/>
- 21 Landon BE. Tipping the scale—the norms hypothesis and primary care physician behavior. *N Engl J Med*. 2017;376(9):810–1.
- 22 Johnson G, Figueroa JF, Zhou X, Orav EJ, Jha AK. Recent growth in Medicare Advantage enrollment associated with decreased fee-for-service spending in certain US counties. *Health Aff (Millwood)*. 2016;35(9):1707–15.
- 23 Feyman Y, Pizer SD, Frakt AB. The persistence of Medicare Advantage spillovers in the post-Affordable Care Act era. *Health Econ*. 2021; 30(2):311–27.
- 24 Baicker K, Chernew ME, Robbins JA. The spillover effects of Medicare managed care: Medicare Advantage and hospital utilization. *J Health Econ*. 2013;32(6):1289–300.
- 25 Callison K. Medicare managed care spillovers and treatment intensity. *Health Econ*. 2016;25(7):873–87.
- 26 Barnett ML, Olenski A, Sacarny A. Common practice: spillovers from Medicare on private health care [Internet]. Cambridge (MA): National Bureau of Economic Research; 2020 May [2024 Jan 10]. (NBER Working Paper No. 27270). Available from: <https://www.nber.org/papers/w27270>
- 27 Meyers DJ, Trivedi AN, Mor V, Rahman M. Comparison of the quality of hospitals that admit Medicare Advantage patients vs traditional Medicare patients. *JAMA Netw Open*. 2020;3(1):e1919310.
- 28 Dafny LS, Hendel I, Marone V, Ody C. Narrow networks on the health insurance Marketplaces: prevalence, pricing, and the cost of network breadth. *Health Aff (Millwood)*. 2017;36(9):1606–14.
- 29 Gruber J, McKnight R. Controlling health care costs through limited network insurance plans: evidence from Massachusetts state employees. *Am Econ J Econ Policy*. 2016; 8(2):219–50.
- 30 Shepard M. Hospital network competition and adverse selection: evidence from the Massachusetts health insurance exchange. *Am Econ Rev*. 2022;112(2):578–615.
- 31 Kreider AR, Layton TJ, Shepard M, Wallace J. Adverse selection and network design under regulated plan prices: evidence from Medicaid [Internet]. Cambridge (MA): National Bureau of Economic Research; 2022 Dec [2024 Jan 10]. (NBER Working Paper No. 30719). Available from: <https://www.nber.org/papers/w30719>