Does Medicare Advantage Enrollment Affect Home Healthcare Use?

Daniel A. Waxman, MD, PhD; Lillian Min, MD, MSHS; Claude M. Setodji, PhD; Mark Hanson, PhD; Neil S. Wenger, MD, MPH; and David A. Ganz, MD, PhD

Although more than 30% of all Medicare beneficiaries are enrolled in the Medicare Advantage (MA) program,[1] studies focusing on the MA patient population are relatively rare, in large part because there are no claims to use as a data source. The capitated payment model introduces a financial incentive to limit wasteful care, whereas none exists in the fee-for-service (FFS) system. However, few published studies have directly measured and compared how much a particular service is used in the 2 systems.[2-4]

One venue where care is documented for all Medicare beneficiaries is home health. All patients receiving care through CMS-certified home health agencies are required to have a comprehensive clinical assessment at the start and end of care, using the Outcome and Assessment Information Set (OASIS) instrument. For both FFS and MA beneficiaries, there is therefore a record not only that care occurred, but also of the clinical status at the start of care and of the functional outcome. Thus, home health provides a unique window through which the 2 programs can be compared.

The use of home health within Medicare is a topic ripe for review. Home health accounted for more than 5% of all FFS Medicare spending ($18.4 billion) in 2011,[5] and an Institute of Medicine (IOM) report identified postacute care as the leading source of unexplained regional variation in healthcare spending via FFS.[6,7] In a report to Congress, the Medicare Payment Advisory Commission (MedPAC) suggested that much of the variation in home health use reflected "fraud, waste, and abuse," and noted that "the broad program standards and fragmented nature of the FFS program do not encourage effective targeting of the benefit."[5,8] Whether MA plans, with their incentives to avoid unnecessary care, are more effective at managing home health use is a natural next question. As a first step toward answering it, we compared home health utilization, regional variation, and clinical outcomes among beneficiaries enrolled in the MA and FFS programs.

ABSTRACT

OBJECTIVES: To compare home health utilization and clinical outcomes between Medicare beneficiaries in the fee-for-service (FFS) and Medicare Advantage (MA) programs, and to compare regional variation.

STUDY DESIGN: We used the 2010 and 2011 Outcome and Assessment Information Set to identify all home health episodes begun in 2010 and to measure 7 clinical home health outcomes that are defined by CMS for public reporting.

METHODS: We modeled the probability of home health use, the duration of home health episodes, and each clinical outcome measure as a function of MA versus FFS enrollment and model-specific risk adjustors. Empirical Bayes predictions from generalized linear mixed models were aggregated by hospital referral region (HRR) to create standardized regional measures of home health utilization and mean episode duration.

RESULTS: We identified 30,837,130 FFS and 10,594,658 MA beneficiaries (excluding those dually eligible for Medicaid). After adjusting for demographic and clinical patient characteristics, the odds of receiving home health among FFS enrollees were 1.83 times those of MA (95% CI, 1.82-1.84). Adjusted home health duration was 34% longer for FFS (95% CI, 32%-34%). Outcomes differences were small in magnitude and inconsistent across measures. Regional variations in use and duration were substantial for both FFS and MA enrollees. Within HRRs, correlations between FFS and MA utilization rates and between FFS and MA episode durations were 0.51 and 0.94, respectively.

CONCLUSIONS: MA beneficiaries use less home health than their FFS counterparts, but regional factors affect utilization, independent of insurance status.

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METHODS

Study Design

We identified all home health episodes among Medicare beneficiaries that started in 2010 and ended by December 31, 2011. We first performed a beneficiary-level analysis, comparing the probability (after adjusting for patient characteristics) that an FFS versus an MA beneficiary would have at least 1 home health episode. For those who received home health, we also compared the total number of days enrolled and 7 clinical outcomes that are publicly reported by CMS on the "Home Health Compare" website: improvement in the 3 measures of activities of daily living; acute care hospitalizations; and improvements in pain, dyspnea, and management of oral medications.[9] Each of these measures is risk-adjusted (per CMS specifications) using the results of the OASIS assessment at the start of care.[10] With the exception of the hospital utilization measure, outcomes are defined by comparing end-of-care and start-of-care OASIS assessments, and are defined only for patients who remain living in the community at the end of the episode.

We first compared each study endpoint as adjusted averages across the FFS and MA populations. Then, to better understand patterns of utilization differences between FFS and MA, we compared FFS and MA beneficiaries within each of the 306 hospital referral regions (HRRs). HRRs were chosen as the geographic unit of interest because the system partitions the country into mutually exclusive regional healthcare markets, which were felt to be the best available approximation for regions serviced by home health agencies.[6]

Data Sources

Using the 100% OASIS file, we grouped start-of-care and end-of-care assessments into episodes according to CMS specifications.[9] OASIS episodes represent a complete cycle of care that ends only when a patient is hospitalized, dies, or is discharged to the community. An OASIS episode may encompass 1 or more 60-day billing episodes, as defined by the home health prospective payment system.[8] To each OASIS episode (observation), we merged in data from the 100% denominator file and from a file containing Hierarchical Condition Category (HCC) scores (which represent the ratio of an individual's expected cost to that of an average beneficiary).[11] The Medicare health insurance claim number or the combination of Social Security number and date of birth were used as unique identifiers. We also added demographic data from the American Community Survey, using 5-year estimates for 2007 to 2011, by linking via the zip code of each beneficiary.[12]

Because patients who were dually eligible for Medicare and Medicaid may have received home health benefits through Medicaid—which would not have been visible to us—we excluded dual-eligible beneficiaries from the analysis. All others were included.

TAKE-AWAY POINTS

Home health utilization is a substantial source of Medicare costs; however, whether enrollment in a Medicare Advantage (MA) plan affects home heathcare use is unknown. We compared nationwide and intra-regional use of home health between beneficiaries enrolled in fee-for-service (FFS) Medicare and MA plans. Our findings were as follows:

‣ FFS beneficiaries used substantially more care, even after adjusting for patient and demographic characteristics.

‣ Functional outcomes were similar, although FFS episodes were 33% longer in duration.

‣ Adjusted utilization varied markedly across regions for both FFS and MA, suggesting that MA plans cannot entirely overcome non–health-related regional forces driving use.

Statistical Models

Nationwide comparison. We used logistic regression with robust standard errors to model the odds of receiving home health and the odds of each of the 7 clinical home health outcomes. We used a generalized linear model with a log link and Gaussian distribution to model the geometric mean number of days enrolled in home health (for those who received care). For models of utilization, risk adjustors included age, sex, HCC score, and 2 socioeconomic indicators from the 2007 to 2011 American Community Survey: deciles of median household income in the Zip Code Tabulation Area (ZCTA) and the proportion of households in the ZCTA with only 1 resident (among those with 1 or more residents aged ≥65), as surrogates for the beneficiary's income and the probability that they live alone. For home health duration, we used 2 additional risk adjustors: whether the initial home health episode started after a hospitalization (post-acute) and whether it followed a surgical procedure. For each clinical outcome, we used an extensive set of outcome-specific risk adjustors (derived from the baseline OASIS assessment) that is specified by CMS for the Home Health Compare program.[10]

Region-by-region analysis. To generate region-specific standardized utilization rates, we used generalized linear mixed models (with logit link for the probability of receiving home health and log link for home health duration) to model home health use as described for the national analysis, but added a random intercept for HRR. We then aggregated recycled empirical Bayes predictions to create a standardized utilization rate (or mean duration) for MA and FFS, for each of the 306 HRRs.[13,14] We presented our results graphically by plotting each region's FFS utilization rate against the MA utilization rate, and reported the correlation coefficients for MA versus FFS across the 306 HRRs.

In keeping with recent reports by MedPAC and the IOM, we quantified regional variation by reporting the ratio of the 90th percentile versus the 10th percentile of regional utilization.[6] We reported these ratios separately for the FFS and MA populations.

RESULTS

After excluding 8,254,838 individuals dually eligible for Medicare and Medicaid, we identified 30,837,130 FFS beneficiaries and

TABLE 1. Baseline Characteristics of Fee-for-Service and Medicare Advantage Patients

	Using Home Health		All Medicare Beneficiaries	
	MA	**FFS**	**MA**	**FFS**
N (%)[a]	1,955,686 (6.3%)	414,187 (3.9%)	30,837,130 (74.4%)	10,594,658 (25.6%)
Age, years: mean (SD)	77.66 (10.89)	76.96 (10.02)	71.23 (11.70)	72.22 (9.41)
Age groups, years				
<65	184,120 (9.4%)	37,021 (8.9%)	5,777,020 (18.7%)	1,401,874 (13.2%)
65-74	499,091 (25.5%)	121,595 (29.4%)	13,723,666 (44.5%)	5,129,962 (48.4%)
75-84	701,594 (35.9%)	155,633 (37.6%)	7,901,304 (25.6%)	3,048,503 (28.8%)
≥85	570,881 (29.2%)	99,938 (24.1%)	3,435,140 (11.1%)	1,014,319 (9.6%)
Female	1,208,851 (61.8%)	235,143 (56.8%)	16,485,890 (53.5%)	5,916,797 (55.8%)
HCC score, median (IQR)	1.18 (0.86-2.14)	1.32 (0.83-2.36)	0.69 (0.46-1.09)	0.77 (0.50-1.18)
Family income, median (IQR)[b]	51,008 (40,628-67,770)	50,614 (40,809-65,059)	51,382 (41,157-68,001)	52,173 (42,069-67,405)
Probability of living alone, median (IQR)[b]	0.39 (0.33-0.45)	0.40 (0.33-0.46)	0.39 (0.32-0.45)	0.38 (0.31-0.44)
Days in home care, mean (SD)	75.80 (89.90)	56.34 (71.52)		
Episode followed hospitalization (postacute)	1,372,800 (70.2%)	311,198 (75.1%)		
Episode followed surgical procedure	762,217 (39.0%)	168,727 (40.7%)		
Ambulation ADL, mean (SD)[c]	2.11 (1.14)	2.06 (1.19)		
Bathing ADL, mean (SD)[c]	2.85 (1.47)	2.82 (1.53)		
Transferring ADL, mean (SD)[c]	1.08 (0.81)	1.04 (0.83)		
Pain score, mean (SD)[c]	2.06 (1.40)	1.98 (1.44)		
Dyspnea score, mean (SD)[c]	1.24 (1.10)	1.10 (1.08)		
Medication management, mean (SD)[c]	1.16 (1.13)	1.10 (1.12)		

ADL indicates activities of daily living; FFS, fee-for-service; HCC, Hierarchical Condition Category; IQR, interquartile ratio; MA, Medicare Advantage; OASIS, Outcome and Assessment Information Set; SD, standard deviation.

All FFS versus MA differences are statistically significant at P <.001, using ANOVA, Kruskal-Wallis, and Pearson's χ^2 tests, as appropriate.

[a]All other percentages in this table are denominated by the column-specific totals listed in this row.

[b]Median for Zip Code Tabulation Area, from 2007-2011 American Community Survey.[12]

[c]From baseline OASIS assessment. Higher scores indicate more disability.

Sources: CMS; 2010 and 2011 Outcome and Information Set (100%) files; 2010 Denominator file (100%); US Census Bureau, American Community Survey.[12]

10,594,658 MA beneficiaries. Baseline characteristics and unadjusted home health utilization rates are summarized in **Table 1**. Among the general population, MA patients were slightly older, whereas in the population using home health, the opposite was true. HCC scores were higher for MA in both populations.

Of those enrolled in FFS, 6.3% had at least 1 home health episode; of those in MA, 3.9% did. Among FFS beneficiaries who used home health, the average number of enrolled days was 75.8; among MA beneficiaries, it was 56.3 days. Although MA patients using home health had higher HCC scores than their FFS counterparts (suggesting a higher disease burden), they had less baseline disability according to each of 6 different measures at the start-of-care OASIS assessment. Home health more commonly started after a hospitalization and/or a surgical procedure for MA patients.

FFS Versus MA: Adjusted National Estimates

Regression results are shown in **Tables 2** and **3**. We estimated that among the general Medicare population, the odds of starting home health during 2010 were 1.82-fold higher for those enrolled in FFS versus MA, after adjusting for patient characteristics and socioeconomic indicators. Among those who did start home health in 2010, we estimated that the FFS patients were enrolled an average of 34% more days than their MA counterparts, after risk adjustment.

The relationship between FFS versus MA, in regard to clinical home health outcomes, was inconsistent, and observed differences were small in magnitude: FFS outcomes were better with regard to pain (odds ratio [OR], 1.08; 95% CI, 1.07-1.09), ambulation (OR, 1.01; 95% CI, 1.00-1.02; P = .03), and management of medications (OR, 1.06; 95% CI, 1.04-1.07); and MA outcomes were better with regard to bed transfer (OR, 0.98; 95% CI, 0.97-0.99), dyspnea (OR, 0.99; 95% CI, 0.98-1.00; P = .02), and hospital utilization (an adverse outcome) (OR, 1.16; 95% CI, 1.15-1.17). Improved bathing was not significantly related to FFS versus MA enrollment (OR, 1.00; 95% CI, 0.98-1.02). Hospital utilization, which measures whether home health ended in hospitalization rather than discharge to the community, was the outcome with the greatest difference (favoring

TABLE 2. Home Care Use as a Function of FFS Versus MA Enrollment, and Patient and Census Tract–Level Demographic Characteristics

	Adjusted Odds Ratio[a]	95% CI
FFS	1.823	1.817-1.830
HCC score (per point)	1.731	1.729-1.733
Age group, years		
<65	0.900	0.896-0.905
65-74	(base)	
75-84	1.951	1.945-1.958
≥85	3.255	3.242-3.267
Female	1.339	1.335-1.342
Median income (decile)[b]		
1st	1.261	1.253-1.269
2nd	1.123	1.116-1.130
3rd	1.087	1.080-1.093
4th	1.024	1.018-1.031
5th	0.994	0.988-1.000
6th	1.017	1.011-1.023
7th	1.011	1.005-1.017
8th	1.037	1.032-1.043
9th	1.040	1.035-1.046
10th	(base)	
Probability of living alone[c]	0.974	0.973-0.976
N	39,447,554[d]	

CI indicates confidence interval; FFS, fee-for-service; HCC, Hierarchical Condition Category; MA, Medicare Advantage.

[a]Logistic regression with robust standard errors. Exponentiated coefficients can be interpreted as adjusted odds ratios, describing the relative odds of starting home healthcare during 2010, per unit change in the covariate. For categorical variables, this is equivalent to the relative odds of using home health for a patient in a given category compared with the base category. For example, after adjusting for other covariates, the odds that a beneficiary who is 85 years or older will use home health are 3.26-fold that of a beneficiary aged 65-74. For a beneficiary enrolled in FFS compared with MA, the odds of using home health are 1.82-fold higher.

[b]Deciles of median household income within Zip Code Tabulation Area (ZCTA) were cross-walked to zip code of residence. Odds ratios are for comparison of each decile to the 10th decile (highest income).[12]

[c]Proportion of households in census tract with only 1 member (among those with 1 or more members age ≥65), in ZCTA, per absolute 10% change.[12]

[d]Excluding 931,735 patients whose zip codes could not be linked to Census data.

TABLE 3. Regression Results for Total Number of Home Health Days for Those Using Home Health[a]

	Exponentiated Coefficients[b]	95% CI
FFS	1.337	1.331-1.343
HCC score (per point)	1.102	1.101-1.103
Age group, years		
<65	1.121	1.114-1.128
65-74	(base)	
75-84	1.021	1.016-1.025
≥85	1.037	1.032-1.042
Female	1.071	1.067-1.074
Postsurgical home care	0.707	0.704-0.710
Postacute home care	0.765	0.763-0.768
Median income (decile)[c]		
1st	1.672	1.660-1.684
2nd	1.505	1.495-1.515
3rd	1.413	1.403-1.422
4th	1.300	1.290-1.309
5th	1.239	1.230-1.248
6th	1.212	1.204-1.220
7th	1.150	1.142-1.158
8th	1.154	1.147-1.162
9th	1.074	1.068-1.081
10th	(base)	
Probability of living alone[d]	1.055	1.054-1.057
N	2,305,050[e]	

CI indicates confidence interval; FFS, fee-for-service; HCC, Hierarchical Condition Category.

[a]Generalized linear model with log link and Gaussian distribution.

[b]Exponentiated coefficients can be interpreted as percent difference in the number of days in home care for those with the covariate (versus the baseline), or in the case of continuous variables, the percent difference per unit change after adjusting for the other covariates. For example, FFS patients are estimated to have home health episodes that are 34% longer than their Medicare Advantage counterparts.

[c]Deciles of median household income within Zip Code Tabulation Area (ZCTA) (ZCTA was cross-walked to code of residence). Odds ratios are for comparison of each decile to the 10th decile (highest income).[12]

[d]Proportion of households in ZCTA with only 1 resident (among those with 1 or more residents age ≥65), in ZCTA, per absolute 10% change.[12]

[e]Excluding 64,789 patients whose zip codes could not be linked to Census data.

MA). Of note, this outcome is not adjusted for duration of home health. Because FFS patients—who have longer home health episodes—spend more time at risk for hospitalization while enrolled, this relationship may be confounded.

Regional Variation

Among the 10% of HRRs (ie, 31 of 306 HRRs) with the highest proportions of FFS beneficiaries with 1 or more home health episodes (90th-percentile FFS), we estimated that 9.4% of all FFS beneficiaries used home health, whereas among the 31 HRRs with the lowest proportion (10th-percentile FFS), only 4.2% did. The ratio of the 90th percentile/10th percentile for FFS was, therefore, 2.2. For MA patients, the 90th percentile for use of home health was 6.3%, the 10th percentile was 2.2%, and the ratio was 2.8. The higher 90th/10th percentile ratio for MA means that by this measure, regional variation in home health use was higher for MA patients than for FFS patients.

An analogous evaluation of the duration of home health episodes yielded the following results: in the 90th-percentile HRR

FIGURE 1. Standardized Regional Rates of Home Health Use by Medicare Advantage Versus Fee-for-Service Medicare Enrollees[a,b,c]
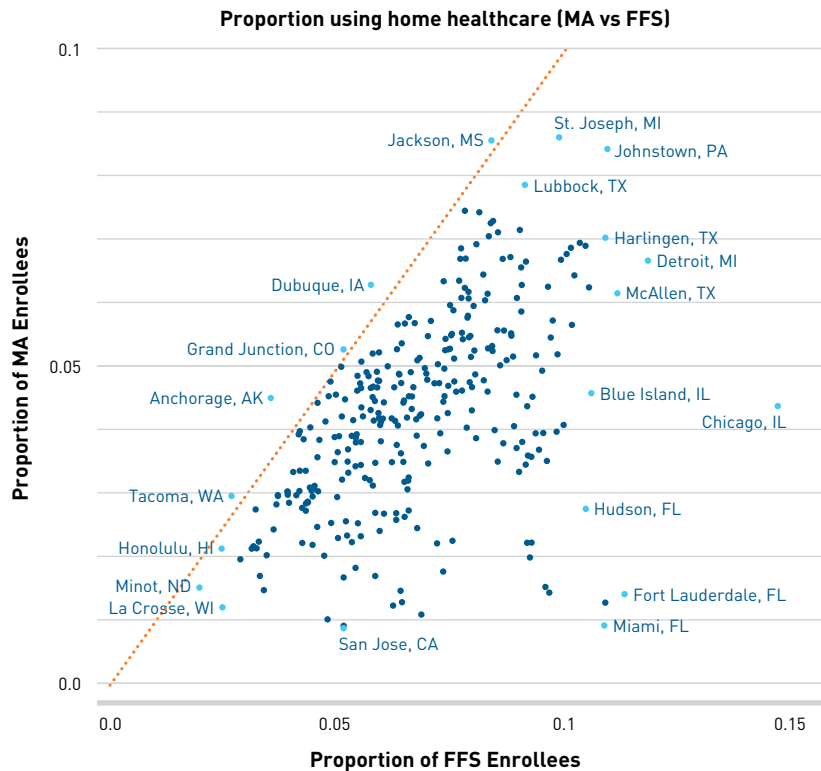
FFS indicates fee-for-service; MA, Medicare Advantage.

[a]Standardized rates of home care utilization are shown by region.

[b]Each point represents 1 of 306 hospital referral regions.

[c]The x-axis represents the adjusted proportion of FFS enrollees in a given region that used home health in 2010. The y-axis represents the adjusted proportion of MA enrollees that used home health. The dashed red line has a slope of 1. If rates of home health use were similar for MA and FFS within regions, then data points would be clustered along this line.

(with regard to average episode duration), mean duration was estimated to be 92 days for FFS and 67 days for MA. The 10th percentile was 39 days for FFS and 31 days for MA. The ratios of 90th/10th percentiles were 2.4 for FFS and 2.2 for MA.

Figure 1 shows the standardized proportions of FFS and MA beneficiaries receiving home health in each of the 306 HRRs. **Figure 2** shows the analogous mean (standardized) duration of home health episodes. These figures illustrate the correlation between FFS and MA rates of home health use (Figure 1), and average home health duration (Figure 2) across regions. Correlation coefficients for MA versus FFS across regions were 0.51 for the proportion using home health and 0.94 for mean duration, meaning regions with longer home health episodes among MA patients also tend to have longer episodes among FFS patients and that this relationship exists to a lesser extent with regard to the probability that an MA or FFS beneficiary in a given region will use home health.

DISCUSSION

We have shown that Medicare beneficiaries enrolled in FFS use substantially more home health than those in MA, both in terms of the proportion of beneficiaries who receive care and the duration of home health among those who do. This is true after adjusting for age, disease burden, and regional differences in household size and income. We found that despite the average home health episode duration being 34% longer for FFS, differences in clinical outcomes were small in magnitude and inconsistent. Of the 7 outcomes that we measured, FFS fared slightly better on 3, MA fared slightly better on 3 others, and there was no difference on 1.

Assertions of "fraud, waste, and abuse" in the home health industry are based on data from the FFS program and have been made in the context of a history of rapid fluctuations in home health use that have closely paralleled changes in home health agency reimbursement policy.[5,15] In 1997, after Medicare spending for home health quadrupled over a 5-year period, cost-based reimbursement was abruptly replaced with a forerunner of today's home health prospective payment system, whereupon spending and utilization rates were cut in half within a year. Subsequently, utilization and expenditures have again crept upward, and since 2002, total FFS home health expenditures have nearly doubled.

The MA versus FFS comparison of home health utilization across regions is of interest because MA plans, which are paid a capitated rate to cover all needed services, have a direct incentive to minimize financial costs, whereas there is no real equivalent incentive for FFS. It is unclear how financial incentives might affect an MA plan's "propensity to provide home health." On the one hand, MA plans might be expected to minimize the direct costs of paying home health agencies and restrict the use of home health. On the other, they might substitute home health for more costly inpatient services and be more inclined to promote its use. Whichever the predominant effect, whether MA enrollees actually use less home health than their FFS counterparts also depends on the proportion of FFS home health that is truly wasteful and the practical ability of MA plans to curb such waste. Small studies from the pre–prospective payment system era suggested that Medicare health maintenance organizations (the forerunner of today's MA plans) used substantially less home

FIGURE 2. Average Duration of Home Health Use, by Region, Fee-for-Service Versus Medicare Advantage[a,b,c]

Average number of days (patients with home care)
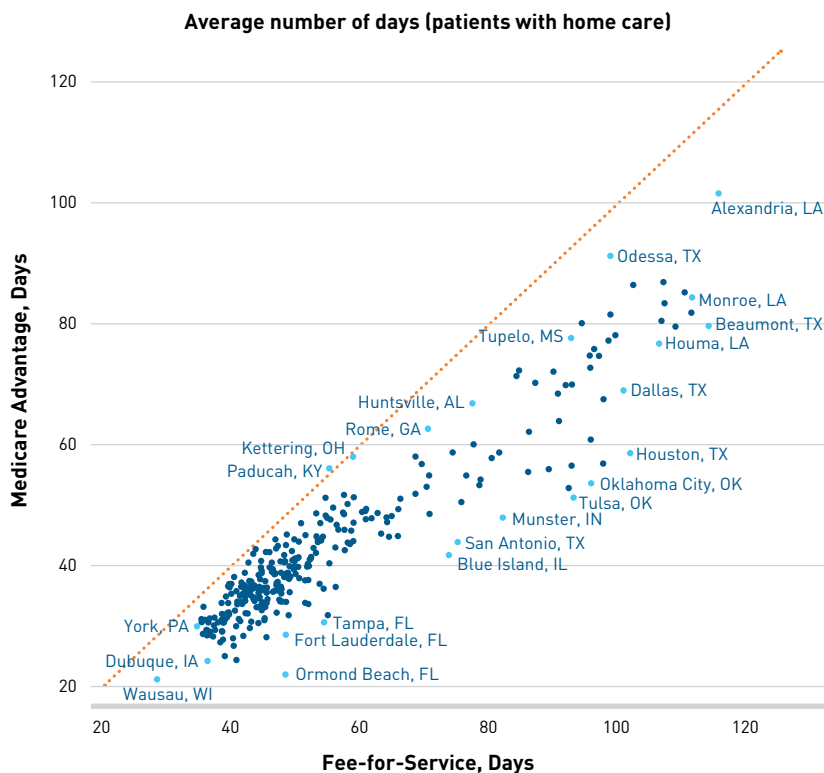
[a]Standardized mean duration of home care (for those who received it) are shown by region.

[b]Each point represents 1 of 306 hospital referral regions.

[c]The x-axis represents the adjusted duration of home health for fee-for-service (FFS) enrollees who used the service in 2010. The y-axis represents the adjusted duration of home health among Medicare Advantage (MA) enrollees. The dashed red line has a slope of 1. If the duration of home health was similar for MA and FFS within regions, then data points would be clustered along this line.

One explanation might be that home health agencies have more leverage in determining duration of care than they do in determining whether beneficiaries are referred to them. If most home health agencies treat a mix of MA and FFS beneficiaries, and if they provide care in a "payer-blind" way, then this finding might be expected.

There has been little previous study of regional variation in the use of a service by MA beneficiaries. One study did compare the use of cardiovascular procedures across 32 of 306 HRRs and found regional FFS and MA rates to be correlated, albeit less so than we find here.[3] An IOM report has also noted regional correlation (0.66) in total per-capita spending.[6] Regional variation among the FFS population has been extensively studied, but we found more variation in FFS home health use than has been recently described for most other services or for postacute care in general.[7,17] We noted that postacute care encompasses more than home health and that not all home health is post acute. However, a 1996 study of FFS home health use during an era prior to the prospective payment reform found a degree of regional variation that appears to be on par with what we find here (methodological differences preclude an exact comparison).[18]

Limitations

We cannot directly determine whether greater home health use by FFS beneficiaries means that they receive unnecessary care or whether MA beneficiaries are not receiving necessary care; it is likely that both are sometimes true (as would sometimes be the converse). Measurement limitations notwithstanding, our finding that MA and FFS patients have similar clinical outcomes suggests that the shorter MA episodes may not be detrimental to health. We do not address patient preferences, however; nor do we explore the clinical effect of differing rates of home health use (compared with differing episode durations).

Our study has several other limitations. First, because MA plans have a financial incentive to select for healthier patients in ways that are not captured by CMS payment models,[19] it is possible that unobservable differences between the populations remain after risk adjustment. Although this could account for some of the difference that we see in a beneficiary's probability of receiving home health, we would expect less influence on our estimates of home health duration or outcomes, which are conditional on receiving home health and which use a larger set of observables (from OASIS) for risk

health than their FFS counterparts at the time, and our study confirms that this is still true (albeit to a lesser degree).[16]

Regional variation is of interest because it provides insight into the practical limitations to optimizing the use of a service: if MA plans were perfectly able to optimize health outcomes or their own financial interests, then unexplained regional variation (ie, beyond what can be explained by differences between patients) would not be expected. The strong correlation between the use of home health by MA and FFS patients within regions therefore implies that MA plans' ability to manage utilization is limited; MA plans limit use, but cannot entirely overcome the same regional forces (eg, healthcare market, local practice styles) that drive variation across regions in the FFS population.

We found a greater correlation between the duration of home health episodes for MA versus FFS patients within a region compared with the regional correlation in the proportion of beneficiaries enrolled in MA versus FFS who receive any home health at all.

adjustment. Second, functional outcome measures rely on clinical assessments at the start and end of each home health episode. Because each agency's performance on these measures is publicly reported, there may be an incentive for agencies to underestimate functional status at the start of care or overestimate it at the end of care, biasing the results toward better outcomes, which would have the effect of minimizing any true outcomes differences between the FFS and MA populations. Moreover, since the end-of-care assessment does not take place when patients die or are transferred, outcomes are only measured for patients who are discharged back to the community at the end of home health. Finally, we do not have a direct window onto the actual number of home health visits that a patient receives, and rely instead on the duration of a home health episode as a proxy. We cannot be certain that FFS and MA beneficiaries receive the same number of visits per unit of time enrolled in home health.

CONCLUSIONS

MedPAC has reported to Congress that the FFS system is not structured to limit wasteful use of the home health benefit.[5] Our study uses MA as a counterexample of care under an alternative reimbursement structure. The Government Accountability Office cites the lack of standards for what constitutes appropriate and necessary care as one of the challenges to curbing excess. Although we do not offer such a standard, we suggest that the type of within-region, between-payer comparison performed here can help to better define a reasonable range of use and to identify high-use and low-use regional outliers (for both FFS and MA). This methodology may be more widely applicable using MA encounter data, which are still being collected.[20] ∎

Author Affiliations: Department of Emergency Medicine (DAW) and David Geffen School of Medicine (NSW, DAG), University of California, Los Angeles, Los Angeles, CA; RAND Corporation (DAW, LM, CMS, MH, NSW, DAG), Santa Monica, CA; University of Michigan Medical School (LM), Ann Arbor, MI; VA Ann Arbor Healthcare System (LM), Ann Arbor, MI; VA Greater Los Angeles Healthcare System (DAG), Los Angeles, CA.

Address Correspondence to: Daniel A. Waxman, MD, PhD, RAND Corporation, 1776 Main St, Santa Monica, CA 90407. E-mail: dwaxman@rand.org.

REFERENCES

1. Medicare Advantage. Kaiser Family Foundation website. http://kff.org/medicare/fact-sheet/medicare-advantage/. Published May 11, 2016. Accessed February 13, 2016.

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):2609-2617. doi: 10.1377/hlthaff.2012.0179.

3. Matlock DD, Groeneveld PW, Sidney S, et al. Geographic variation in cardiovascular procedure use among Medicare fee-for-service vs Medicare Advantage beneficiaries. *JAMA*. 2013;310(2):155-162. doi: 10.1001/jama.2013.7837.

4. Landon BE, Zaslavsky AM, Saunders R, Pawlson LG, Newhouse JP, Ayanian JZ. A comparison of relative resource use and quality in Medicare Advantage health plans versus traditional Medicare. *Am J Manag Care*. 2015;21(8):559-566.

5. Report to the Congress: Medicare payment policy [chapter 9. home health care services]. Medicare Payment Advisory Commission website. http://www.medpac.gov/docs/default-source/reports/mar13_entirereport.pdf?sfvrsn=0. Published March 2013. Accessed October 1, 2016.

6. Newhouse JP, Garber AM, Graham RP, McCoy MA, Mancher M, Kibria A; Committee on Geographic Variation in Health Care Spending and Promotion of High-Value Care; Board on Health Care Services; Institute of Medicine. *Variation in Health Care Spending: Target Decision Making, Not Geography.* Washington, DC: National Academies Press; 2013.

7. Newhouse JP, Garber AM. Geographic variation in health care spending in the United States: insights from an Institute of Medicine report. *JAMA*. 2013;310(12):1227-1228. doi: 10.1001/jama.2013.278139.

8. Home health care services payment system. Medicare Payment Advisory Commission website. https://web.archive.org/web/20160920140547/http://www.medpac.gov/docs/default-source/payment-basics/home-health-care-services-payment-system-15.pdf?sfvrsn=0. Revised October 2015. Accessed October 1, 2016.

9. Home Health Agency quality measures: technical documentation of oasis-based patient outcome measures. CMS website. https://web.archive.org/web/20141113020936/http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Downloads/Outcome-Quality-Measures-Technical-Documentation.pdf. Revised June 2013. Accessed October 1, 2016.

10. Home Health Agency quality measures: logistic regression models for risk adjustment. CMS website. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/downloads/HHQILogisticRegressionModelsforRiskAdjustment.pdf. Published August 15, 2011. Accessed February 19, 2016.

11. Pope GC, Kautter J, Ellis RP, et al. Risk adjustment of Medicare capitation payments using the CMS-HCC model. *Health Care Financ Rev*. 2004;25(4):119-141.

12. American Community Survey 5-year estimates, 2007-2011. US Census Bureau website. http://www.census.gov/acs/www/. Accessed October 1, 2016.

13. Kleinman LC, Norton EC. What's the risk? a simple approach for estimating adjusted risk measures from nonlinear models including logistic regression. *Health Serv Res*. 2009;44(1):288-302. doi: 10.1111/j.1475-6773.2008.00900.x.

14. Ash AS, Fienberg SE, Louis TA, et al. Statistical issues in assessing hospital performance. CMS website. http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/Statistical-Issues-in-Assessing-Hospital-Performance.pdf. Published November 28, 2011. Updated January 27, 2012. Accessed October 4, 2015.

15. Goldberg Dey J, Johnson M, Pajerowski W, Tanamor M, Ward MA; L&M Policy Research, LLC. Home health study report. CMS website. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/Home-HealthPPS/downloads/HHPPS_LiteratureReview.pdf. Published January 11, 2011. Accessed October 1, 2016.

16. How HMOs manage home health services. Office of Inspector General, HHS website. https://oig.hhs.gov/oei/reports/oei-04-95-00080.pdf. Published June 1997. Accessed February 19, 2016.

17. Report to the Congress: regional variation in Medicare service use. Medicare Payment Advisory Commission website. http://web.archive.org/web/20151022070751/http://www.medpac.gov/documents/reports/Jan11_RegionalVariation_report.pdf. Published January 2011. Accessed October 1, 2016.

18. Welch HG, Wennberg DE, Welch WP. The use of Medicare home health care services. *N Engl J Med*. 1996;335(5):324-329.

19. Cooper AL, Trivedi AN. Fitness memberships and favorable selection in Medicare Advantage plans. *N Engl J Med*. 2012;366(2):150-157. doi: 10.1056/NEJMsa1104273.

20. Medicare Advantage: CMS should fully develop plans for encounter data and assess data quality before use. Government Accountability Office website. http://www.gao.gov/assets/670/665142.pdf. Published July 2014. Accessed October 4, 2015.

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