

Hospice Use in Medicare Managed Care and Fee-for-Service Systems

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Objective: To examine whether patterns of hospice use by older Medicare beneficiaries are consistent with the differing financial incentives in Medicare managed care (MC) and fee-for-service (FFS) settings. Specifically, are use patterns consistent with incentives that might encourage hospice use for MC enrollees and discourage hospice use for FFS enrollees?

Study Design: One-year study of hospice use by Medicare beneficiaries dying in 1996.

Patients and Methods: Medicare enrollment and hospice administrative data were used to examine hospice use before death for all elderly individuals residing in 100 US counties with high MC enrollment in 1996. Age-, sex-, and race-adjusted rate of hospice use and length of stay in hospice are compared between FFS and MC enrollees across and within (when possible) the 100 counties.

Results: Rates of hospice use were significantly higher for MC enrollees than for FFS enrollees (26.6 vs 17.0 per 100 deaths; $P < .001$). These differences persisted within age, sex, and race groups but were not related to area MC enrollment rate or the amount of money paid to managed care organizations. Age-, sex-, and race-adjusted differences were observed in 94 of 100 counties. Length of stay in hospice was marginally longer for MC enrollees than for FFS enrollees (median, 24 vs 21 days; $P < .0001$).

Conclusions: System of care is an important determinant of hospice use in the elderly Medicare population.

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was passed, the regulations adopted to administer the 2 programs interact in ways that may impact usage patterns. Hospice is unique among Medicare benefits because it is a "carve-out." That is, it is always paid directly by the Health Care Financing Administration (HCFA) regardless of whether a beneficiary is in the managed care (MC) or fee-for-service (FFS) option.¹ To qualify for hospice care under Medicare, a beneficiary must have a physician-documented life expectancy of 6 months or less. In exchange for comprehensive hospice care (see **Appendix 1** for components), the patient agrees to forgo curative care for the condition that brought him or her to hospice. Patients retain the right to reverse this decision and the right to receive curative care for other ailments.

There have been persistent concerns about patterns of use of the Medicare hospice benefit related to whether it is used and duration of use. Advocates believe that there are many persons who are not offered hospice care services for whom hospice care would be both appropriate and consistent with their preferences. Similarly, they are concerned that short hospice stays (<7 days) do not offer patients enough

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For editorial comment, see page 831.

The Medicare hospice benefit and the Medicare managed care program were both introduced as part of the 1982 Tax Equity and Fiscal Responsibility Act. Perhaps because of lack of experience with either program at the time legislation

time to take advantage of hospice benefits to the fullest extent possible.

Once a patient in the FFS system enters hospice, physicians are limited in the types and amounts of services for which they can be reimbursed. In the MC system, when an enrollee chooses hospice, the managed care organization (MCO) is no longer responsible for financing any of their care (including curative care for other problems). The portion of the HCFA payment to the MCO that is related to covering the standard Medicare benefits is no longer paid. The MCO remains responsible for providing extra benefits (eg, medications, consumables) and retains the portion of the HCFA payment that covers the cost of those benefits and administrative costs.

These payment rules have been interpreted by some (eg, Morrison and Meier²) as leading to incentives that would encourage MCOs to enter dying patients, particularly high-need, high-expense patients, into hospice. An extreme response to these incentives might result in premature referral of patients to hospice. The incentives are a result of the risk contracting used by the HCFA, which places the financial burden of patient care on MCOs. It is rational for MCOs to transfer that burden back to the HCFA whenever the costs of caring for such patients are likely to exceed the capitated payment the MCO will receive for that patient. Hospice provides an opportunity for such transfer.

A contrasting view is that FFS payment rules lead to a disincentive for providers in the FFS system to enroll patients in hospice because they would be limited in the amount and types of services for which they could bill the HCFA.³ It has been noted that FFS payment rules encourage aggressive care. As a result, these same rules might discourage use of hospice services. Given this comparison of MC and FFS incentives, evaluation of hospice use in Medicare managed care must take into account that the incentives in MC and FFS systems, at least in theory, work in opposite directions.

Beyond theoretical concerns, there is some evidence that use of the hospice benefit differs between FFS and MC enrollees. A study of hospice care in South Florida³ showed clear differences in the rate of hospice use before death between the MC and FFS options (26% vs 18%; $P < .001$). In addition, the median duration of hospice use was longer in the MC system than in the FFS system (20 vs 14 days for cancer diagnoses; $P < .001$). A follow-up analysis, also of South Florida hospice users, found a positive relationship between estimated patient income and rate of hospice use in the FFS system but not in MC.

Specifically, in the FFS program, relative to individuals in the lowest income group, those in the highest income group were 1.5 times more likely to die in hospice. In the MC system, high-income persons were 1.2 times more likely to die in hospice. That study also found an inverse relationship between income and duration of hospice use in the MC system, with poorer persons experiencing longer lengths of stay. In the FFS system, duration of hospice use was unrelated to income.⁴ Although these patterns are consistent with the incentives inherent in the FFS and MC systems, they do not provide evidence that hospice use in either system is a direct response to incentives.

Our recent study⁵ of national variation in hospice use in general (FFS and MC combined) showed significant geographic variation in rates of hospice use. Hospice rates were negatively correlated with in-hospital death rates and hospital beds per capita and increased with higher average adjusted per capita costs and with MC enrollment rates. However, that analysis did not directly compare FFS and MC but did find that area MC enrollment rates were correlated with area hospice use rates for combined FFS and MC populations.

In this analysis, we examined data from 100 different counties with sufficient numbers of deaths in both the MC and FFS systems to determine whether there are differences in rates of hospice use, duration of hospice use, or the distribution of diagnoses referred to hospice between the 2 Medicare options. We sought to determine whether differences observed in one part of the country (South Florida) apply across the United States.

... MATERIALS AND METHODS ...

Data

This study was based on administrative (claims) data from the 1996 Medicare hospice file and on population-based information from the 1996 Medicare Denominator File. These 2 files contain information on 100% of Medicare hospice users and 100% of current (1996) Medicare beneficiaries, respectively. This analysis was limited to elderly individuals (aged ≥ 65 years) and was based on the experience of persons in 100 counties with the largest number of deaths in the MC system in 1996 (all had at least 193 deaths in the MC system and 276 in the FFS system). This group of counties crosses 22 states and represents 550,325 beneficiary deaths (34% of the total deaths among the

Medicare elderly in 1996). Limiting our analysis to counties with sufficient numbers of both MC and FFS deaths ensured that there was enough power to make county-level comparisons of hospice use rates and that differences between systems cannot be attributed to geography.

Outcome Measures

Hospice use before death was measured as the number of hospice deaths per 100 beneficiary deaths and was calculated using direct standardization adjusting for age, sex, and race.⁶ These factors were considered important because they are associated with both hospice use and managed care enrollment.

Median length of stay was estimated using Kaplan-Meier methods,⁶ allowing for censored observations to be taken into account and for unbiased confidence intervals and significance levels to be estimated. It was also more appropriate than mean length of stay given the highly skewed distribution of length of stay. The measure was limited to persons admitted to hospice in 1996, with persons still alive on December 31, 1996, censored.

Seven-day mortality in hospice was a measure of the proportion of hospice users who died within 7 days of hospice admission. This measure was limited to persons admitted to hospice at least 7 days before the censoring cutoff date to avoid artificially inflating the numerator. As suggested by Christakis and Escarce,⁷ this measure can be used as an indicator of overly short hospice stays. Finally, 180-day (ie, 6-month) survival was a measure of the proportion of hospice users who survived >180 days in hospice. This measure was limited to persons who were admitted to hospice at least 180 days before the censoring cutoff date to avoid artificially inflating the numerator. Christakis and Escarce⁷ suggested that this measure is a good indicator of overly pessimistic hospice referral. Seven-day mortality and 180-day survival rates were adjusted for age, sex, race, and the presence of a cancer diagnosis, factors all related to duration of hospice use.

Predictor Variables

Race was grouped as black and nonblack because there were not enough persons in the Asian, Hispanic, and Native American categories to analyze separately. Works by Lauderdale and Goldberg⁸ as well as by the authors of the *Dartmouth Atlas of Health Care*⁹ suggest that the black/nonblack designation is more stable than white/nonwhite when including Hispanic, Native American, and other racial groups in the analysis. Recent comparisons of

race coding between HCFA sources and self-report confirm the accuracy of a black/nonblack grouping.¹⁰

Income was measured indirectly based on the average disposable household income by ZIP code for households with persons aged 65 years and older based on figures from the 1990 US Census.^{11,12}

Diagnosis

Hospice use associated with cancer was defined as including persons whose hospice diagnosis is contained in *International Classification of Diseases*¹³ codes 140 to 239. Noncancer-related hospice use was defined as all other diagnoses.

The average adjusted per capita cost (AAPCC) was the county-level payment rate for Medicare MCOs in 1996. The AAPCC is based on the costs of treating a Medicare beneficiary in the FFS system and has been interpreted as a measure of MCO income and propensity to provide care in the FFS system.^{9,14}

The Medicare MC enrollment rate was calculated on the county level and represents the percentage of Medicare enrollees in an MCO in 1996.

Analysis

Logistic regression was used to simultaneously test the impact of multiple factors on rates of hospice use. In analyses examining whether racial or income effects were constant between the MC and FFS options, the model term of interest is the interaction between MC and income or race. Kaplan-Meier techniques were used to estimate median length of stay in hospice while taking censoring into account. Statistical testing of differences in medians was conducted using generalized Wilcoxon tests.¹⁵ Logistic regression was also used for significance testing related to 7-day mortality and 180-day survival estimates.

... RESULTS ...

Global rates of hospice use before death were significantly lower in FFS populations than in MC populations. Pooled across the 100 counties, rates of hospice use were 17.0 per 100 beneficiary deaths for the FFS population and 26.6 per 100 beneficiary deaths for the MC population ($P < .001$). These differences remained within age and sex subgroups (Table 1). The association between system of care option and hospice use differed significantly across income groups (ie, a significant system of care-income interaction), with a greater MC/FFS differ-

ential in the lower-income group than in the higher-income groups (relative risk, 1.8 for persons from areas with average incomes less than \$15,000/year vs 1.5 for persons from areas with average incomes greater than \$20,000/year; $P < .05$). Similarly, the MC/FFS differential in rate of hospice use before death was slightly larger in the black population than in the nonblack population (relative risk, 1.8 vs 1.5; $P < .05$).

Within the 100 counties, greater hospice use in MC populations was maintained for 94 and was statistically significant (at the .05 level) for 75% (Table 2 for specific counties and their hospice use rates in each system). The ratio of the MC and FFS rates (relative risks) ranged from 0.67 to 2.72, with a median of 1.30 (Figure 1). The MC/FFS differential was not related to the rate of Medicare MC enrollment in the county or the AAPCC, the payment from the HCFA to the MCOs.

The distribution of diagnoses for users was similar between FFS- and MC-enrolled hospice users. Specifically, 57.7% of hospice users in the FFS system had a cancer diagnosis compared with 60.0% in the MC system.

Overall median length of stay in hospice was marginally greater for MC enrollees vs FFS enrollees

(24 vs 21 days; $P < .0001$). Censoring was slightly more common in the FFS system than in the MC system (18.7% vs 17.0%). Seven-day mortality was lower for MC enrollees than for FFS enrollees (25.2% vs 26.6%; $P < .001$), and 180-day survival was higher for MC enrollees than for FFS enrollees (13.3% vs 11.6%; $P < .001$). These differences persisted within age, sex, racial, and income groups (eg, Figure 2 illustrates this pattern for income). In addition, comparable differences were found across diagnostic groups (data available on request). Length of stay patterns did not vary significantly by AAPCC level or MC enrollment rate (data available on request).

The general magnitude of length of stay differences persisted within these 100 counties. Sixty-seven counties had longer median lengths of hospice stay for MCO-enrolled hospice users than FFS-enrolled hospice users (Table 2). Fifty-five counties had longer lengths of stay in the MCO system by more than 2 days. Thirty counties had longer lengths of stay in the FFS-enrolled population (21 were longer by more than 2 days). The remaining 3 counties had equal lengths of stay between MCO- and FFS-enrolled populations (Figure 3).

Table 1. System of Care Differences in Rate of Hospice Use Across Demographic Groups*

	Fee-for-Service	Managed Care
Deaths, total No.	443,381	106,944
Hospice users among deaths, total No.	81,214	31,280
Sex [†]		
M	16.5	26.3
F	17.7	27.3
Race [†]		
Nonblack	17.5	27.0
Black	12.3	22.5
Age, y [†]		
65-74	19.6	29.2
75-84	17.6	27.5
85-94	14.7	24.3
≥95	12.2	22.4
Yearly income, \$ [†]		
<15,000	14.2	25.1
15,000-20,000	17.3	27.4
>20,000	18.2	26.5

*Rates are per 100 beneficiary deaths, adjusted for age, sex, and race, except where noted.

[†] $P < .05$ for fee-for-service/managed care difference.

... DISCUSSION ...

This analysis showed extremely consistent patterns nationally and within geographic areas with regard to rates of hospice use before death. As was found in the South Florida analysis, and predicted by the incentives built into the program, MC enrollees experienced higher rates of hospice use before death than did FFS enrollees.

The higher rates of hospice use in MCOs were maintained within age and sex groups. The differential racial and income effects in MC seem to point to a partial success by MCOs in overcoming persistent problems of lower rates of hospice use among blacks compared with nonblacks^{5,16} and among persons from poorer areas relative to persons from wealthier areas.¹⁶ This lessening of income and racial differentials in hospice use is a clear signal that these patterns,

regardless of how persistent, are modifiable. The lessening of racial or income differentials does not, of itself, guarantee that all hospice use in MC is consistent with patients' wishes. That is, racial differentials might reflect access barriers or differences in patient preferences for one care mode or another. It should not be assumed that all differences are contrary to patient preferences. It is as problematic to pressure persons into hospice care who do not want it as it is to deny hospice care to persons who do want it. This study points to differences that deserve further attention.

Modeling showed the MCO/FFS differential to be unrelated to either the AAPCC or the county-level MC penetration (enrollment) rate, suggesting that the higher rate of hospice use by beneficiaries in MC is not related to the absolute amount of money MCOs are paid by the HCFA (the AAPCC) or by the proportion of the population enrolled in MCOs. This lack of association suggests that although market-level characteristics have been associated with hospice use on a population level,^{5,17} these characteristics are not a significant contributor to the MC/FFS differential. However, it might mean that regardless of the AAPCC, HMOs share a common incentive to refer out patients who have a high likelihood of requiring expensive care.

Higher rates of hospice use in MC were also observed at the county level, where 94 of 100 individual counties studied showed this same pattern. Of the 94 counties, differences were statistically significant in 75 (79%). In 9 counties, MC had at least double the hospice use

Table 2. County-Specific Patterns of Hospice Use and Length of Stay in Fee-for-Service (FFS) and Managed Care (MC) Populations

County	State	Rate of Hospice Use		Median Length of Hospice Stay, d	
		MC	FFS	MC	FFS
Jefferson	AL	16.1	16.2	47	36
Maricopa	AZ	35.8	27.7	26	22
Pima	AZ	47.3	33.7	14	13
Pinal	AZ	32.1	28.2	30	36
Alameda	CA	23.8	15.0	28	29
Butte	CA	19.8	10.7	18	24
Contra Costa	CA	23.8	15.5	27	34
Fresno	CA	24.8	12.3	18	13
Kern	CA	27.9	10.2	21	18
Los Angeles	CA	22.1	10.9	23	21
Marin	CA	28.8	19.4	22	17
Orange	CA	31.1	20.2	28	23
Riverside	CA	29.3	21.7	26	22
Sacramento	CA	17.1	12.2	34	32
San Bernardino	CA	27.9	18.6	23	26
San Diego	CA	33.1	21.4	23	21
San Francisco	CA	16.0	10.2	39	26
San Joaquin	CA	13.9	8.5	30	27
San Luis Obispo	CA	23.9	16.9	16	23
San Mateo	CA	18.6	13.7	34	25
Santa Barbara	CA	19.7	11.5	24	21
Santa Clara	CA	17.3	12.4	24	19
Solano	CA	21.2	13.5	28	20
Sonoma	CA	26.8	20.6	26	25
Stanislaus	CA	14.9	8.7	26	16
Ventura	CA	20.0	13.8	14	20
Adams	CO	33.4	22.5	13	10
Arapahoe	CO	33.7	29.2	12	13
Denver	CO	36.5	26.0	15	11
Jefferson	CO	29.8	29.0	18	13
Broward	FL	45.9	36.6	14	10
Dade	FL	30.7	20.7	19	12
Duval	FL	27.1	25.3	23	21
Hillsborough	FL	27.1	19.8	53	38
Orange	FL	24.4	15.6	37	32
Palm Beach	FL	33.2	26.0	14	11
Pasco	FL	33.1	27.8	32	20
Pinellas	FL	28.4	25.7	49	40
Seminole	FL	23.1	17.3	24	29
Volusia	FL	34.6	23.4	22	17
Hawaii	HI	12.4	13.7	43	35
Honolulu	HI	15.5	12.6	20	16
Maui	HI	12.7	11.3	24	11
Cook	IL	28.5	19.6	20	18
Du Page	IL	30.5	23.8	29	23
E. Baton Rouge	LA	15.7	7.4	27	27
Jefferson	LA	19.1	15.9	36	21
Orleans	LA	20.8	11.5	25	22
Essex	MA	22.3	14.2	19	23
Middlesex	MA	13.8	12.7	23	17

(continued)

Table 2. (Continued)

County	State	Rate of Hospice Use		Median Length of Hospice Stay, d	
		MC	FFS	MC	FFS
Norfolk	MA	19.7	13.4	25	19
Plymouth	MA	16.9	15.1	31	21
Suffolk	MA	18.8	12.7	26	15
Worcester	MA	13.1	10.0	19	21
Baltimore	MD	11.2	16.7	22	20
Hennepin	MN	24.8	19.5	37	26
Ramsey	MN	25.0	23.4	28	22
Jackson	MO	26.7	18.4	35	27
St. Louis	MO	16.9	15.3	37	24
St. Louis City	MO	16.9	13.1	31	23
Burlington	NJ	22.4	19.0	33	22
Camden	NJ	20.3	16.3	22	21
Bernalillo	NM	33.5	27.1	31	17
Clark	NV	23.6	18.0	29	17
Bronx	NY	5.7	2.7	29	27
Erie	NY	9.0	14.3	16	20
Kings	NY	6.5	5.9	31	26
Monroe	NY	20.5	20.1	16	15
Nassau	NY	15.1	11.7	28	29
New York	NY	9.9	7.3	29	26
Queens	NY	12.6	5.9	27	31
Richmond	NY	18.6	13.9	17	26
Suffolk	NY	17.6	15.3	25	28
Westchester	NY	19.4	11.7	19	28
Cuyahoga	OH	26.2	18.5	35	27
Oklahoma	OK	23.1	21.8	37	31
Tulsa	OK	26.1	18.9	44	34
Clackamas	OR	28.7	19.2	25	20
Lane	OR	13.8	16.5	21	28
Marion	OR	26.3	15.5	29	23
Multnomah	OR	26.1	16.8	27	24
Washington	OR	25.1	20.1	24	26
Allegheny	PA	15.4	11.2	19	19
Bucks	PA	16.0	17.6	17	18
Chester	PA	20.9	9.2	14	29
Delaware	PA	16.0	14.6	18	21
Montgomery	PA	17.8	15.9	21	22
Philadelphia	PA	17.4	14.9	19	21
Westmoreland	PA	15.1	8.5	19	24
Providence	RI	21.2	15.6	19	17
Bexar	TX	33.7	17.0	34	21
Dallas	TX	29.5	25.6	27	24
Harris	TX	25.2	21.1	15	16
Nueces	TX	12.7	8.4	23	18
Tarrant	TX	29.3	24.1	25	25
Clark	WA	27.8	28.6	25	30
King	WA	30.7	15.2	20	24
Pierce	WA	23.9	13.9	38	24
Snohomish	WA	25.0	17.2	21	24
Thurston	WA	23.5	19.1	20	25

of the FFS system, suggesting that in some areas hospice use might be more influenced by system of care than in others. The consistent MC/FFS differential in rate of hospice use maintained both within most counties and for the 100 counties as a whole suggests that this pattern is more than a mere local artifact.

Length of stay differences are small but are consistent with theoretical expectations and results of previous research. That is, across all demographic and diagnostic subgroups, MC-enrolled beneficiaries had equal or longer lengths of hospice stay than FFS-enrolled beneficiaries. These differences were modest in virtually all cases, with an overall difference of 3 days. The similar differences in 7-day mortality and 180-day survival rates support the conclusion that duration of hospice use has a similar distribution in FFS and MC populations. In both populations, the data show similar proportions of patients dying soon after hospice entry (7-day mortality, 25.2% for MC and 26.6% for FFS) and surviving longer than the stated 180-day benefit target (13.3% for MC and 11.6% for FFS). The similar rates of 7-day mortality suggest that FFS and MC are equally likely to delay hospice referral until death is imminent. Likewise, the 2 systems of care are equally likely to underestimate life expectancy.

From the data presented herein, it is not possible to determine whether the MC/FFS differential is driven by reduced use in the FFS option or increased use in the MC option. An understanding of the underlying mechanism for this pattern is needed before any policy response. For example, if the differential is determined to be driven by an FFS response to financial disincentives related to

Figure 1. Ratio of Managed Care (MC) to Fee-for-Service (FFS) Hospice Use Rates

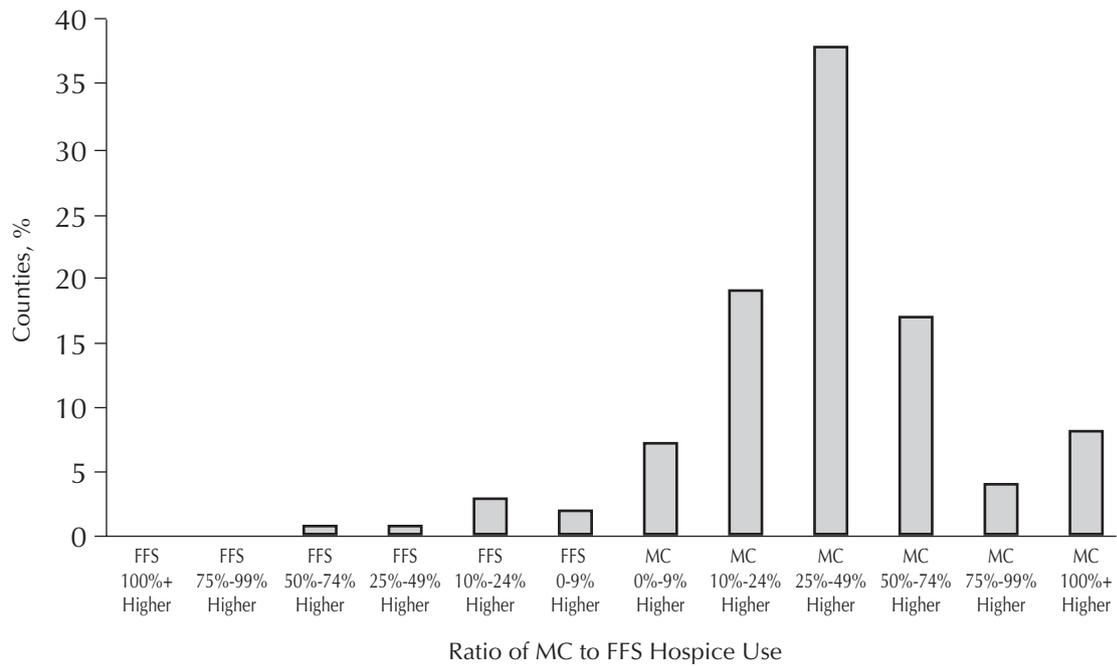
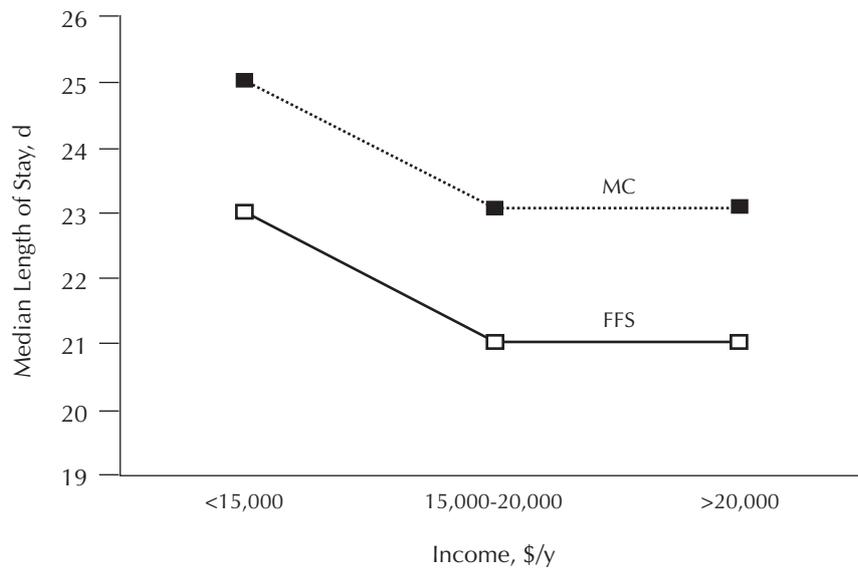


Figure 2. Median Length of Hospice Stay by Income and Medicare System of Care



FFS = fee for service; MC = managed care.

hospice referral, allowing additional compensation for end-of-life care planning might limit the impact of those disincentives. On the contrary, if the differential is largely due to MC pressures to use hospice, then the appropriate policy response might be to lessen those incentives, perhaps by making MCOs responsible for financing hospice care for their covered populations. It might be that the care philosophy in MC, which consists of case management, might result in more hospice use not because of direct emphasis on hospice but because of general emphasis on advanced care planning and avoiding care unlikely to benefit the patient.

If the MC/FFS differential in length of stay is due to incentives that encourage early use of hospice by MCOs, it is possible that HCFA regulations that hold hospices responsible for long stays might limit their impact on the modest length of stay differential observed.

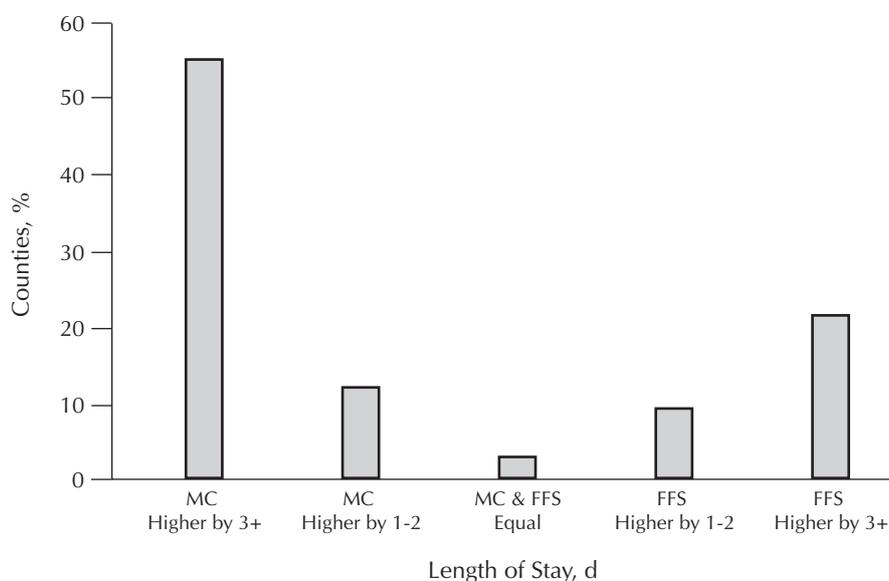
It is also possible that the magnitude of the differential is limited because MCOs can change provider behavior with regard to hospice use but cannot change patient readiness to enter hospice. Because hospice use requires patient consent, the somewhat small differences in length of stay could be an indication that dying patients, regardless of whether they are in the FFS or MC option, do not

differ in their readiness to enter palliative care programs. Similarly, it is possible that physicians treating patients in both systems have access to the same prognostic tools and are equally limited in their ability to predict when a patient enters the terminal phase of illness. Information about patient preferences, physician prognoses, and clinical indicators of severity of illness would clarify some of these issues. If ability to establish prognosis is found to be an important factor, elimination of Medicare's current 6-month survival expectation as a condition for hospice entry might eliminate much of this problem.¹⁸

The association between system-level incentives and physician behavior is not clear. Physicians, not organizations, treat patients. Literature suggesting that MCOs can alter physician behavior is limited. Equally limited is evidence that physicians treat their patients differently depending on their specific insurance option. These combine to support the hypothesis that the observed MC/FFS differential is driven by underuse in the FFS system rather than by increased use in MC. Instead of adding incentives, MC might have removed disincentives to hospice use. Answering this question will likely require detailed study of physician behavior and would benefit from the ability to prospectively identify "potential hospice users." If evidence is obtained to support such a view, the policy challenge will be to remove the disincentives in the FFS system.

Although the patterns reported herein are consistent with inherent incentives in MC and FFS systems, note that beneficiaries self-select MC or FFS enrollment. Thus, there might be differences between people who choose MC vs FFS that make MC enrollees more likely to choose hospice before death. For example, MC enrollees might prefer a less aggressive practice style than their FFS-enrolled counterparts. Such differences might result in the mistaken assumption that patterns of hospice use

Figure 3. Managed Care (MC)/Fee-for-Service (FFS) Differences in Median Length of Hospice Stay



are due to system-level differences in financial incentives, when they might in fact be due to patient self-selection into the 2 systems.

This analysis was limited to counties with large numbers of MC deaths. Yet, the rates of hospice use before death in the study counties are similar to those nationally, where 14.9% of deaths in the FFS population and 25.8% of deaths in MC occur in hospice. Limiting the analysis to 100 counties was, to some extent, arbitrary and was based on the concern that small numbers of patients would result in unstable standardized rates, particularly for MC estimates. Finding similar patterns within these geographically dispersed counties ensured that differences between systems could not be attributed to geography.

Finally, note that the denominator for hospice use rates was "all deaths" and not "deaths for conditions for which hospice is appropriate." Medicare does not collect cause of death information for beneficiaries. Thus, the denominators for hospice use rates included all deaths, even those from conditions for which hospice use is extremely unlikely (eg, injuries). As a result, if a higher percentage of deaths in the FFS system are due to conditions for which hospice is not an option, differences in hospice use might be attributed to system-level influences that were, in fact, due to differences in patient populations. Although theoretically possible, the consistency of results both across and within 100 geographically dispersed counties makes this explanation for the observed results extremely unlikely.

Although the results of this study are compelling, the only way to directly determine whether hospice use or timing is appropriate is to ask patients or their families. The strong consistency between these national results and financial incentives suggests that some policy response could influence rates of hospice use. Before a policy response, however, it is important to determine whether the MC/FFS differential is due to underuse in the FFS system, increased use in the MC system, or both. Without this basic information, it is unlikely that the correct intervention can be conceptualized or implemented.

... CONCLUSIONS ...

These national data support earlier findings that MC-enrolled beneficiaries consistently experience

higher rates of hospice use before death than their FFS-enrolled counterparts. In addition, these stays tend to be marginally longer than those experienced by persons in the FFS system. The findings are consistent with the conclusion of Morrison and Meier² that financial incentives for Medicare MC can affect patterns of hospice care. The results presented here-in strongly suggest that follow-up studies are needed to better understand the complex relationship between system of care and patient decision making.

... ACKNOWLEDGMENTS ...

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Appendix. Services Covered by the Medicare Hospice Benefit¹⁹

Physician services
Nursing care
Medical equipment (eg, wheelchairs and walkers)
Medical supplies (eg, bandages and catheters)
Drugs for symptom control and pain relief
Short-term care in the hospital, including respite care
Home health aide and homemaker services
Physical and occupational therapy
Speech therapy
Social worker services
Dietary counseling
Counseling to help the patient and the patient's family with grief and loss