

© Health Research and Educational Trust  
DOI: 10.1111/1475-6773.12359  
RESEARCH ARTICLE

# Comparing the Health Care Experiences of Medicare Beneficiaries with and without Depressive Symptoms in Medicare Managed Care versus Fee-for-Service

*Steven C. Martino, Marc N. Elliott, Amelia M. Haviland, Debra Saliba, Q. Burkhart, and David E. Kanouse*

---

**Objective.** To compare patient experiences and disparities for older adults with depressive symptoms in managed care (Medicare Advantage [MA]) versus Medicare Fee-for-Service (FFS).

**Data Sources.** Data came from the 2010 Medicare CAHPS survey, to which 220,040 MA and 135,874 FFS enrollees aged 65 and older responded.

**Study Design.** Multivariate linear regression was used to test whether case-mix-adjusted associations between depressive symptoms and patient experience differed for beneficiaries in MA versus FFS. Dependent measures included four measures of beneficiaries' experiences with doctors (e.g., reports of doctor communication) and seven measures of beneficiaries' experiences with plans (e.g., customer service).

**Principal Findings.** Beneficiaries with depressive symptoms reported worse experiences than those without depressive symptoms regardless of coverage type. For measures assessing interactions with the plan (but not for measures assessing interactions with doctors), the disadvantage for beneficiaries with versus without depressive symptoms was larger in MA than in FFS.

**Conclusions.** Disparities in care experienced by older Medicare beneficiaries with depressive symptoms tend to be more negative in managed care than in FFS. Efforts are needed to identify and address the barriers these beneficiaries encounter to help them better traverse the managed care environment.

**Key Words.** CAHPS, depressive symptoms, managed care, organization of care, patient experience, quality of care

---

The prevalence of depressive symptoms among older adults ranges from 8 to 20 percent (Blazer et al. 1991; Beekman et al. 1995; Blazer 2003) and is especially common among those with comorbid medical disorders. Depression in

later life is associated with substantial suffering, functional impairment, and decreased quality of life (Unützer et al. 2000; Blazer 2003; Pierluissi et al. 2012). Among older adults with chronic medical conditions, depressed mood is associated with increased illness severity (Kivelä and Pahlkala 2001), poorer adherence to treatment (DiMatteo, Lepper, and Croghan 2000), and increased mortality (Rovner 1993; Frasure-Smith, Lespérance, and Talajic 1995). Depression may also put older adults at a disadvantage in their health care experiences (Ciechanowski, Katon, and Russo 2000; Swenson et al. 2008; Maeng et al. 2012). For example, a recent study compared Medicare beneficiaries with and without depressive symptoms on multiple aspects of patient experience—including quality of doctor communication, access to care, and timeliness of care—and found that beneficiaries with depressive symptoms consistently reported worse experiences (Martino et al. 2011). This study also suggests that the poorer care experienced by beneficiaries with depressive symptoms is due partly to their poorer health literacy or self-efficacy. Such findings suggest a need to identify factors that may mitigate or amplify disparities in patient experience for older adults with depressive symptoms.

The type of health care delivery system may be one such factor. Medicare beneficiaries have a choice between enrolling in traditional fee-for-service (FFS) Medicare or a Medicare Advantage (MA) managed care plan. Although the majority of beneficiaries choose FFS Medicare, enrollment in MA has increased considerably over the past decade. In 2014, the MA program enrolled 30 percent of Medicare beneficiaries, compared with 16 percent in 2006 (Kaiser Family Foundation 2014). In contrast with FFS Medicare, which pays providers a predetermined fixed rate per service, the MA program pays plans a fixed capitated rate per enrollee. This payment arrangement gives MA plans a greater incentive to improve efficiency and reduce costs.

Advocates of managed care have argued that integrated health plans may be able to treat patients with greater efficiency while achieving similar or better quality through flexible enrollee benefits, enhanced coordination of care, and provider networks tailored to the needs of their population (Landon, Wilson, and Cleary 1998). Although studies comparing quality and access to

---

Address correspondence to Steven C. Martino, Ph.D., RAND Corporation, 4570 Fifth Avenue, Pittsburgh, PA 15213-2665; e-mail: martino@rand.org. Marc N. Elliott, Ph.D., Q. Burkhart, M.S., and David E. Kanouse, Ph.D., are with the RAND Corporation, Santa Monica, CA. Amelia M. Haviland, Ph.D., is with the Heinz College, Carnegie Mellon University, Pittsburgh, PA. Debra Saliba, M.D., M.P.H., is with the UCLA, JH Borun Center and Los Angeles Veterans Administration Health System, Los Angeles, CA.

care between FFS and MA are limited (Gold and Casillas 2014), there is evidence that MA does tend to outperform FFS Medicare in providing preventive care and using resources more conservatively (Brennan and Shephard 2010; Landon et al. 2012; Ayanian et al. 2013). Moreover, whereas earlier studies generally found that beneficiaries rated their care more highly and reported more favorable experiences in FFS Medicare compared with MA (Landon et al. 2004), such differences have recently narrowed or been reversed (Ayanian et al. 2013).

Few studies, however, have examined the particular experiences of those who are less healthy or who have other characteristics that make them especially vulnerable to poorer quality of care or access problems. The few studies that have done so suggest that such vulnerable beneficiaries may not reap from MA the same benefits as the generally healthy average member does. For example, Elliott et al. (2011) found significantly greater disparities between MA and FFS Medicare on Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey measures of patient experience among beneficiaries with lower income and less education (see also Keenan et al. 2009; Pourat, Kagawa-Singer, and Wallace 2006).

One explanation for these findings may involve health literacy and patient activation—characteristics that are strongly related to income and education. Because private health plans have financial incentives to reduce utilization of services, these plans may require additional steps for patients to obtain services (e.g., acquiring pre-approval for services or formally requesting exemptions to restrictions), necessitating levels of health literacy and activation that are challenging for many of those in certain vulnerable subgroups (Sofaer 2009; Elliott et al. 2011).

Older adults with depression are another subgroup among whom levels of health literacy and activation may be diminished (Martino et al. 2011), and who may therefore experience more negative disparities in care (relative to their non-vulnerable counterparts) in MA than in FFS. To investigate that possibility, the current study compared the care experiences of Medicare beneficiaries with and without depressive symptoms in MA versus FFS. Consistent with recent findings (Martino et al. 2011), we expected that beneficiaries with depressive symptoms would report poorer experiences of care compared with beneficiaries without depressive symptoms in both coverage types. Given that beneficiaries with depressive symptoms may be less willing or able to advocate for themselves or to actively participate in decision making to ensure that they receive the health care and treatment they feel best meets their needs (Martino et al. 2011), we hypothesized that disparities in care

experienced by beneficiaries with depressive symptoms would be more pronounced in MA than in FFS. Finally, given our hypothesis that MA tends to amplify the effect of depressive symptoms on patient experience by requiring more of patients in terms of self-advocacy, we expected to observe more negative disparities for patients with depressive symptoms in MA versus FFS on measures assessing beneficiaries' interactions with their plans versus interactions with their doctors.

## METHODS

### *Data Source*

Data for this study came from the 2010 Medicare CAHPS survey, to which 251,346 MA beneficiaries and 157,315 FFS beneficiaries responded. Respondents younger than age 65 were excluded from the analysis, leaving 220,040 MA beneficiaries and 135,874 FFS beneficiaries. The Medicare CAHPS survey, which is the primary means of assessing care experiences of the 44 million Medicare beneficiaries (Goldstein et al. 2001), is a stratified random sample of Medicare beneficiaries. Surveys are distributed by mail, with telephone follow-up of nonrespondents by phone. The overall response rate for the 2010 Medicare CAHPS survey was 60 percent (61 percent among beneficiaries aged 65 and older; 59 percent among FFS beneficiaries; 63 percent among MA enrollees) with 18 percent of completions by phone. Unit response rates to the 2010 survey followed patterns typical for other health surveys (Elliott et al. 2005; Klein et al. 2011), including higher response rates for non-Hispanic Whites than for other racial/ethnic subgroups, higher response rates with age through age 79, and lower response rates for low-income beneficiaries. Poststratification weights were used in all analyses to account for sample design and nonresponse.

### *Measures*

*Dependent Variables: 11 CAHPS Measures of Patient Experience.* The dependent measures were respondents' reports of their health care experiences in the past 6 months. Four measures capture beneficiaries' experiences with their doctors (Farley et al. 2011). These include global ratings of one's personal physician or nurse, specialists, and all health care received in the past 6 months, as well as a composite measure of how well doctors communicate ( $\alpha = 0.94$ ). Seven measures capture beneficiaries' experiences with plans. These include

global ratings of one's experiences with the plan (MA) or Medicare (FFS) and with prescription drug coverage, as well as composite measures of customer service provided by the plan (MA) or Medicare (FFS; alpha = 0.85), getting needed care (e.g., ease of getting needed care, tests, and treatment; alpha = 0.70), getting care quickly (e.g., ease of getting an appointment for care at a doctor's office or clinic; alpha = 0.68), ease of getting needed prescription drugs (alpha = 0.85), and ease of getting needed information about prescription drugs (alpha = 0.94). Questions were answered by the subset of beneficiaries to whom they were applicable, with screener items assessing eligibility (e.g., measures assessing experiences related to prescription drugs were completed only by beneficiaries with prescription drug coverage). Composites were scored as the average of nonmissing items for each individual. The validity of the six composite measures is reported elsewhere (Hays et al. 1999; Hargraves, Hays, and Cleary 2003; Martino et al. 2009). The 11 dependent measures are described in more detail in Appendix SA2.

*Depressive Symptoms.* We measured depressive symptoms with the PHQ-2 (Kroenke, Spitzer, and Williams 2003), a 2-item depression screener that appeared on all versions of the survey. Respondents used a 4-point response scale (1 = "not at all," 2 = "several days," 3 = "more than half the days," 4 = "nearly every day") to report how often in the past 2 weeks they had been bothered by "having little interest or pleasure in doing things" and by "feeling down, depressed, or hopeless." Alpha reliability for these two items in our sample was 0.89. Following standard recommendations (Kroenke, Spitzer, and Williams 2003), we summed responses to these two items and categorized respondents whose sum was 5 or higher as screening positive for depressive symptoms, and respondents whose sum was below 5 as screening negative for depressive symptoms. Compared with a structured clinical interview, the PHQ-2 has high sensitivity (0.8–1.0) and moderate to high specificity (0.6–0.9) for detecting major depression in general primary care samples (Kroenke, Spitzer, and Williams 2003; Arroll et al. 2010) and samples of older patients (Li et al. 2007; Thombs, Ziegelstein, and Whooley 2008; Saliba et al. 2012). Thirteen percent of our sample was categorized as screening positive for depressive symptoms, a rate that is comparable to ones found in other samples of primarily or exclusively older adults (Spitzer et al. 1994; Gallo and Lebowitz 1999; Alexopoulos 2005; Unützer 2007) and to the rate found in the 2009 Medicare CAHPS survey (Martino et al. 2011).

*Control Variables.* Because other beneficiary characteristics are known to be associated with response tendencies (Zaslavsky et al. 2001) and may differ between MA and FFS populations (Keenan et al. 2009; Shimada et al. 2009) and/or between individuals with and without depressive symptoms (Atkinson and Caldwell 1997; Keenan et al. 2009), we included the following potential confounders in the multivariate model: gender; age (65–74, 75–79, 80–84, and 85 years or older); education (no high school, some high school, high school graduate or General Education Diploma (GED), some college, 4-year college graduate, and >4 years of college); dual eligibility for Medicaid (an indicator of limited assets and income below 150 percent of the federal poverty level); whether the beneficiary received assistance in completing the survey or had a proxy respondent (two separate indicators); and multiple health measures, including self-rated physical health (poor, fair, good, very good, and excellent), number of doctor visits in the past 6 months, number of prescription medicines filled or refilled in the past 6 months, currently having a medical condition that has lasted three or more months, needing help with personal care, and needing help with routine activities. To control for regional differences, we included CMS region indicators.

#### *Missing Data and Imputation*

To avoid the bias and loss of precision that would result from listwise deletion, we imputed values for the independent, but not dependent, variables used in our analyses; missingness for dependent variables is almost entirely planned missingness for items applicable to only a subset of beneficiaries. Six percent of respondents did not complete one or both items measuring depressive symptoms. Missing data ranged from 0 to 9 percent on all control variables except having a current medical condition that has lasted three or more months (14 percent missing data).

We first imputed missing values for control variables, using the mean within the beneficiary's health plan (contract) or area of residence (if FFS with no prescription drug coverage; 277 such areas). We used least-squares regression imputation for depression to preserve correlational relationships between this key predictor and the dependent measures. Regression imputation employed all predictors in our multivariate analyses, including nonmissing values of the two items measuring depressive symptoms to predict the depression indicator. These commonly used imputation approaches efficiently handle missing data, produce more reliable estimates than those obtained with listwise deletion, and reasonably approximate other commonly employed

imputation approaches when, as is the case here, rates of missingness are generally low and uniformly spread across variables (Schafer and Graham 2002).

### *Analyses*

Analyses for this article were conducted using *SAS software, Version 9.3* (SAS Institute, Inc., Cary, NC, USA). A weighted multivariate linear regression model was used to test whether the association between depressive symptoms and patient experience differed for beneficiaries in MA versus FFS. Like multivariate analysis of variance (MANOVA), this implementation of multivariate linear regression allowed for the simultaneous modeling of multiple related outcome measures while taking into account the correlation among outcome measures within a given individual (Morrison 2005).

In the regression model, predictors of patient experience included a binary indicator of depressive symptoms, an indicator of MA enrollment (versus FFS), all control variables described above, and a depressive symptoms by MA interaction term. A key advantage of the multivariate model over 11 separate univariate models is that it provides a global test of the effect of each predictor on the set of patient experience measures as a whole while also allowing these effects to differ by outcome measure (through the inclusion of interactions in the model; see Appendix SA3 for a detailed description of the multivariate model). Taylor series linearization (Wolter 2007) was used to correct standard errors for correlation of different outcome measures within beneficiaries.

Linear contrasts were used to estimate and test absolute differences between beneficiaries with and without depressive symptoms within MA and FFS strata and to test absolute differences between MA and FFS within strata of beneficiaries with and without depressive symptoms. To test whether differences in care associated with depressive symptoms were more negative in MA than in FFS, we examined the “difference of differences” by testing the corresponding interaction term for each CAHPS measure. If the difference in patient experience between beneficiaries with versus without depressive symptoms was more negative in MA than in FFS, this would be indicated by a significant negative interaction or difference-of-differences.

For those control variables with a nearly linear association with patient experience (age, education, and self-rated health; Elliott et al. 2001), we estimated unique associations between the control variables and each of the measures of patient experience. Each other control variable was forced to have a coefficient that was homogeneous across all measures of patient

experience to reduce the number of interaction terms included in the regression model, a simplification that was necessary for computational tractability and efficient estimation.

## RESULTS

Table 1 presents demographic and other characteristics of the sample overall, plus comparisons of MA versus FFS and of beneficiaries with and without depressive symptoms on these characteristics (Appendix SA4 presents a further breakdown of these characteristics among MA and FFS beneficiaries with and without depressive symptoms). The most salient difference between MA and FFS beneficiaries is that FFS beneficiaries were in poorer physical health (across a range of indicators), better educated, and more likely to be Medicaid eligible (low income). Compared with beneficiaries without depressive symptoms, beneficiaries with depressive symptoms were older, less educated, in poorer health (across a range of indicators), and more likely to be Medicaid eligible.

### *Multivariate Regression Model*

Full results of the multivariate regression appear in Appendix SA3. A summary of key results based on postestimation tests from this model appears in Table 2. The first column of this table presents adjusted means on the measures of patient experience for FFS beneficiaries without depressive symptoms, the analytic reference group. Columns 2–4 compare combinations of coverage type (MA or FFS) and depressive symptoms to this reference group. The three remaining columns summarize other contrasts of interest—the differences associated with depression among MA beneficiaries (Column 5), the comparison of MA and FFS among those with depressive symptoms (Column 6), and the difference-of-differences for depression and coverage type (Column 7).

The second column of Table 2 compares MA beneficiaries without depressive symptoms to FFS beneficiaries without depressive symptoms on the measures of patient experience. Among the measures of experiences with doctors, there were small (less than 1 point on a 0–100 scale) but statistically significant absolute differences between MA and FFS beneficiaries without depressive symptoms for three of the four measures (lower in MA than in FFS; rating of personal doctor/nurse was the exception). In addition, there



Table 1: Characteristics of Beneficiaries Enrolled in Medicare Advantage (MA) Plans and Fee-for-Service (FFS) Medicare and Beneficiaries with and without Symptoms of Depression

Variable	Weighted %				
	Overall	MA (n = 220,040; 2.5% Weighted)	FFS (n = 135,874; 7.5% Weighted)	Without Symptoms of Depression (n = 310,951; 8.7% Weighted)	With Symptoms of Depression (n = 44,963; 1.3% Weighted)
Age (years)	53	52	53	54	46*
65-74	34	36	33*	33	34
75-84	13	12	14*	12	19*
85 or older	57	58	57	57	60*
Female gender					
Education	9	11	9*	8	20*
Eighth grade or less	11	13	10*	10	17*
Some high school	33	34	33*	34	33
High school graduate or GED	24	23	24*	25	18*
Some college or 2-year degree	9	9	10*	10	6*
4-year college graduate	13	10	14*	14	6*
More than 4-year college degree					
Self-rated physical health	8	9	8*	9	3*
Excellent	27	28	27*	29	10*
Very good	37	37	37	39	25*
Good	22	21	22*	19	40*
Fair	6	4	6*	3	22*
Poor	40	37	41*	38	55*
Has medical condition lasting >3 months					

Continued

Table 1: Continued

Variable	Weighted %				
	Overall	MA (n = 220,040; 25% Weighted)	FFS (n = 135,874; 75% Weighted)	Without Symptoms of Depression (n = 310,951; 87% Weighted)	With Symptoms of Depression (n = 44,963; 13% Weighted)
Doctor visits, past 6 months					
None	17	19	16*	17	16
1	19	20	19*	20	15*
2	22	22	22	22	20*
3	14	14	14	14	15
4	9	9	10*	9	10*
5-9	14	12	14*	13	17*
10+	4	3	5*	4	7*
Prescriptions filled, past 6 months <sup>f</sup>					
None	7	8	6*	7	6*
1-2	18	21	16*	19	10*
3-5	38	39	38*	40	31*
6+	36	31	40*	34	52*
Needs help with personal care	8	7	9*	6	28*
Needs help to accomplish routine tasks	19	16	19*	14	48*
Dual eligibility for Medicaid	12	11	13*	10	26*
Proxy assistance in completing survey	12	12	13*	10	27*
Proxy answered survey questions	4	4	4*	3	12*

Notes. *p* values in the FFS column correspond to differences between MA and FFS in a weighted regression. *p* values in the last column correspond to differences between beneficiaries with and without symptoms of depression in a weighted regression.

<sup>f</sup>This item was asked only of beneficiaries with prescription drug coverage.

\**p* < .001.

FFS, fee-for-service; MA, Medicare advantage.

Table 2: Patient Experience Differences for Subgroups of Patients Defined by Depressive Symptom Status and Medicare Coverage Type

(1)	(2)	(3)	(4)	(5)	(6)	(7) <sup>†</sup>
	Difference from FFS Beneficiaries without Depressive sx			MA—FFS among Beneficiaries with Depressive sx		
Adjusted Mean for FFS Beneficiaries without Depressive sx	MA Beneficiaries without Depressive sx b (SE)	MA Beneficiaries with Depressive sx b (SE)	FFS Beneficiaries with Depressive sx b (SE)	Effect of Depressive sx in MA b (SE)	MA—FFS among Beneficiaries with Depressive sx b (SE)	Difference-of-Differences b (SE)
Experiences with doctors						
Rating of personal MD/nurse	-0.07 (0.08)	-1.65 (0.19)***	-1.76 (0.20)***	-1.57 (0.19)***	0.11 (0.26)	0.19 (0.27)
Rating of specialists	-0.43 (0.10)***	-3.12 (0.29)***	-2.43 (0.27)***	-2.69 (0.29)***	-0.69 (0.37)	-0.27 (0.39)
Rating of all health care received	-0.26 (0.09)**	-4.08 (0.23)***	-3.99 (0.23)***	-3.82 (0.22)***	-0.09 (0.30)	0.17 (0.31)
Doctor communication	-0.21 (0.08)*	-2.53 (0.21)***	-2.52 (0.21)***	-2.33 (0.20)***	0.02 (0.27)	0.19 (0.28)
Experiences with plan						
Rating of plan/Medicare	0.50 (0.09)***	-2.82 (0.21)***	-0.95 (0.22)***	-3.33 (0.21)***	-1.88 (0.28)***	-2.38 (0.29)***
Rating of Rx drug coverage	3.37 (0.12)***	1.16 (0.24)***	-0.24 (0.29)	-2.21 (0.23)***	1.40 (0.34)***	-1.98 (0.36)***
Customer service	8.73 (0.28)***	4.05 (0.49)***	-2.49 (0.65)***	-4.68 (0.44)***	6.55 (0.70)***	-2.19 (0.76)**
Getting needed care	-0.14 (0.11)	-4.58 (0.28)***	-3.30 (0.28)***	-4.44 (0.28)***	-1.28 (0.36)***	-1.14 (0.38)**
Getting care quickly	0.30 (0.12)*	-2.13 (0.28)***	-1.82 (0.28)***	-2.43 (0.28)***	-0.31 (0.36)	-0.61 (0.38)
Getting needed Rx drugs	2.25 (0.12)***	-1.96 (0.26)***	-3.40 (0.33)***	-4.21 (0.25)***	1.45 (0.37)***	-0.80 (0.39)*
Getting info. about Rx drugs	2.61 (0.30)***	-3.69 (0.59)***	-5.43 (0.70)***	-6.30 (0.57)***	1.74 (0.82)*	-0.87 (0.88)

<sup>†</sup>Column 7 estimates are calculated by subtracting the Column 4 estimate from the Column 5 estimate.  
 \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .  
 FFS, fee-for-service; MA, Medicare Advantage; Rx, prescription; sx, symptoms.

were statistically significant absolute differences between MA and FFS beneficiaries without depressive symptoms on six of the seven measures of plan experiences (all in favor of MA; Getting Needed Care was the nonsignificant exception).

The third column of Table 2 compares MA beneficiaries with depressive symptoms to FFS beneficiaries without depressive symptoms. Though not of direct interest, the estimates in this column are used in constructing the comparisons of interest in the later columns of the table.

The fourth column of Table 2 compares FFS beneficiaries with depressive symptoms to FFS beneficiaries without depressive symptoms. On all but one measure (the global rating of drug coverage), those with depressive symptoms reported worse experiences of care (1–5 points lower on a 0–100 scale) than those without depressive symptoms.

The fifth column of Table 2 compares MA beneficiaries with depressive symptoms to MA beneficiaries without depressive symptoms. For all measures, experiences were worse (2–6 points lower) for those with depressive symptoms.

The sixth column of Table 2 shows absolute differences between MA and FFS (MA-FFS) for each measure of patient experience among beneficiaries with depressive symptoms. In contrast to the worse experiences with doctors reported by those without depressive symptoms in MA versus FFS (shown in Column 2), there were no statistically significant differences for beneficiaries with depressive symptoms between MA and FFS on any of the measures of experiences with doctors. Regarding plan experience measures, MA beneficiaries with depressive symptoms reported significantly better experiences (1–7 points higher) on four measures (the three prescription drug coverage measures and Customer Service) and worse experiences (by 1–2 points) on two measures (Getting Needed Care and Rating of Plan/Medicare) than their FFS counterparts (MA and FFS beneficiaries with depressive symptoms reported similar experiences with Getting Care Quickly). This again differs from MA/FFS differences for those without depressive symptoms (see Column 2) who report only similar (one measure) or better (six measures) experiences with MA plans compared with FFS.

The final column of Table 2 presents the difference-of-differences. As hypothesized, disparities in care experienced by beneficiaries with depressive symptoms were of similar magnitude in MA and FFS for all four measures of experiences with doctors (i.e., the difference-of-differences estimates were nonsignificant). In contrast, disparities in care experienced by beneficiaries with depressive symptoms were significantly more negative (by 1–2 points)

in MA than in FFS for five of the seven measures of experiences with plans (and the difference-of-differences estimates were nonsignificant for the other two measures, Getting Care Quickly and Getting Information about Prescription Drugs).

## DISCUSSION

Depression is a common and disabling condition among older adults that is associated with high health care costs (Unützer et al. 1997; Katon et al. 2003). A recent study focusing on the Medicare population as a whole showed that, despite their high need, beneficiaries with depressive symptoms report worse health care experiences than beneficiaries without such symptoms (Martino et al. 2011). The current study extends these findings by demonstrating that the disparities in care experienced by older Medicare beneficiaries with depressive symptoms tend to be more negative in managed care than in FFS within the domain of interactions with their health and prescription drug plans, but not in the domain of patients' interactions with doctors. One possible explanation for this finding is that greater negotiation is required in MA than in FFS to obtain patient services (Keenan et al. 2009; Elliott et al. 2011) and that those who lack the motivation or skills to seek or demand proper care for themselves experience a greater disadvantage in MA than in FFS.

Alternatively, it may be that there are differences in the mental health benefits that beneficiaries receive in MA plans versus FFS Medicare that explain why beneficiaries with depressive symptoms in MA report greater difficulty accessing needed care and obtain less of an advantage (relative to MA beneficiaries without depressive symptoms) in the area of access to prescription drugs. That is, it may be that MA enrollees with depressive symptoms face non-negotiable network and mental health coverage restrictions for which assertiveness around one's health care is not relevant. Although MA plans are allowed to vary the overall benefit design offered by FFS Medicare, they are obligated to maintain the same overall value of Medicare benefits. In addition, CMS generally requires that cost-sharing in MA plans not exceed the cost-sharing that beneficiaries would pay under FFS Medicare. However, little public information exists regarding the extent to which CMS scrutinizes the mental health services portion of MA plan bids, making it difficult to quantify any differences that may exist between FFS and MA in their coverage of mental health benefits. Broadly speaking, provider choice is more restricted in MA than in FFS Medicare, which may mean that MA beneficiaries have

access to a smaller number of mental health professionals than FFS beneficiaries. This could contribute to poorer experiences for patients with depressive symptoms in MA relative to FFS. Additional research is needed to test these alternative explanations and to investigate other mechanisms that may drive the disparities in experiences of care between patients with and without depressive symptoms in MA.

This study also highlights the complexity involved in attempts to evaluate the relative performance of health care delivery systems. Although MA enrollees with depressive symptoms experience disparities in care that are larger than those experienced by their counterparts in FFS, in an absolute sense they may still be better off choosing many MA plans over FFS, particularly with respect to prescription drug coverage.

Our study has several limitations that should be noted. First, although our multivariate analyses adjust for many patient characteristics, those who select MA plans versus FFS Medicare may differ in unmeasured ways. Our analyses could be biased to the extent that such unobserved differences are associated both with having depressive symptoms and with how beneficiaries assess the care that they receive. Second, although the PHQ-2 has high sensitivity and specificity in detecting major depression, it does not provide a definitive diagnosis of depressive disorder (Kroenke, Spitzer, and Williams 2003). Some of those who screen positive for symptoms of depression on this or any other screener may do so because of a life situation or a different medical condition rather than a mood disorder.

Finally, some of the differences (or difference of differences) that we observed may appear small on a 0–100 scale, with interactions generally being 1–2 points. It is worth bearing in mind, however, that the CAHPS composites and ratings presented have standard deviations of 2–3 points at the contract level (data not shown). Thus, an interaction of 1–2 points, while small at the person level, corresponds to a medium-sized effect at the contract level. This is a difference in quality that is large enough to be of practical importance to a beneficiary with depressive symptoms. For example, an MA contract that appears to be similar in quality to a corresponding FFS option might, in effect, be 1–2 points (or approximately half a standard deviation) lower in quality for a beneficiary with depressive symptoms. Likewise, what appears to be a moderate advantage for a particular MA contract over a corresponding FFS option might translate into no advantage at all for a beneficiary with depressive symptoms. Stratified analysis and reporting of patient experience data for beneficiaries with and without depressive symptoms (rather than pooled across all beneficiaries) could therefore help plans target quality improvement

initiatives to bring the experiences of beneficiaries with depressive symptoms in line with those of the average healthy beneficiary.

## ACKNOWLEDGMENTS

*Joint Acknowledgment/Disclosure Statement:* This study was funded by Centers for Medicare & Medicaid Services (CMS) contract HHSM-500-2005-000281 to RAND. Although prior approval and notification by CMS is not required, CMS was provided with an advanced copy of the manuscript as a courtesy. The authors would like to thank CMS Project Officer Elizabeth Goldstein for her support. The authors would also like to thank Erin Taylor for her helpful comments on an earlier version of this article.

*Disclosures:* None.

*Disclaimers:* None.

## REFERENCES

- Alexopoulos, G. S. 2005. "Depression in the Elderly." *Lancet* 365 (9475): 1961–70.
- Arroll, B., F. Goodyear-Smith, S. Crengle, J. Gunn, N. Kerse, T. Fishman, K. Falloon, and S. Hatcher. 2010. "Validation of PHQ-2 and PHQ-9 to Screen for Major Depression in the Primary Care Population." *Annals of Family Medicine* 8 (4): 348–53.
- Atkinson, M. J., and L. Caldwell. 1997. "The Differential Effects of Mood on Patients' Ratings of Life Quality and Satisfaction with Their Care." *Journal of Affective Disorders* 44 (2–3): 169–75.
- Ayanian, J. Z., B. E. Landon, A. M. Zaslavsky, R. C. Saunders, L. G. Pawlson, and J. P. Newhouse. 2013. "Medicare Beneficiaries More Likely to Receive Appropriate Ambulatory Services in HMOs Than in Traditional Medicare." *Health Affairs* 32 (7): 1228–35.
- Beekman, A. T. F., D. J. H. Deeg, T. van Tilburg, J. H. Smit, C. Hooijer, and W. van Tilburg. 1995. "Major and Minor Depression in Later Life: A Study of Prevalence and Risk Factors." *Journal of Affective Disorders* 36 (1–2): 65–75.
- Blazer, D. G. 2003. "Depression in Late Life: Review and Commentary." *Journal of Gerontology: Medical Sciences* 58A (3): 249–65.
- Blazer, D., B. Burchett, C. Service, and L. K. George. 1991. "The Association of Age and Depression among the Elderly: An Epidemiologic Exploration." *Journal of Gerontology* 46 (6): m201–5.
- Brennan, N., and M. Shephard. 2010. "Comparing Quality of Care in the Medicare Program." *American Journal of Managed Care* 16 (11): 841–8.

- Ciechanowski, P. S., W. J. Katon, and J. E. Russo. 2000. "Depression and Diabetes: Impact of Depressive Symptoms on Adherence, Function, and Costs." *Archives of Internal Medicine* 160 (21): 3278–85.
- DiMatteo, M. R., H. S. Lepper, and T. W. Croghan. 2000. "Depression Is a Risk Factor for Noncompliance with Medical Treatment: Meta-Analysis of the Effects of Anxiety and Depression on Patient Adherence." *Archives of Internal Medicine* 160 (14): 2101–7.
- Elliott, M. E., R. Swartz, J. Adams, K. L. Spritzer, and R. D. Hays. 2001. "Case-Mix Adjustment of the National CAHPS<sup>®</sup> Benchmarking Data 1.0: A Violation of Model Assumptions?" *Health Services Research* 36 (3): 555–73.
- Elliott, M. N., C. Edwards, J. Angeles, K. Hambarsoomian, and R. D. Hays. 2005. "Patterns of Unit and Item Nonresponse in the CAHPS Hospital Survey." *Health Services Research* 40 (6 Pt 2): 2096–119.
- Elliott, M. E., A. M. Haviland, N. Orr, K. Hambarsoomian, and P. D. Cleary. 2011. "How Do the Experiences of Medicare Beneficiary Subgroups Differ between Managed Care and Original Medicare?" *Health Services Research* 46 (4): 1039–58.
- Farley, D. O., M. N. Elliott, A. M. Haviland, M. E. Slaughter, and A. Heller. 2011. "Understanding Variations in Medicare Consumer Assessment of Health Care Providers and Systems Scores: California as an Example." *Health Services Research* 46 (5): 1646–62.
- Frasure-Smith, N., F. Lespérance, and M. Talajic. 1995. "Depression and 18-Month Prognosis after Myocardial Infarction." *Circulation* 91 (4): 999–1005.
- Gallo, J. J., and B. D. Lebowitz. 1999. "The Epidemiology of Common Late-Life Mental Disorders in the Community: Themes for the New Century." *Psychiatric Services* 50 (9): 1158–66.
- Gold, M., and G. Casillas. 2014. "What Do We Know about Health Care Access and Quality in Medicare Advantage versus the Traditional Medicare Program?" [accessed on December 9, 2014]. Available at <http://kff.org/medicare/report/what-do-we-know-about-health-care-access-and-quality-in-medicare-advantage-versus-the-traditional-medicare-program>
- Goldstein, E., P. D. Cleary, K. M. Langwell, A. M. Zaslavsky, and A. Heller. 2001. "Medicare Managed Care CAHPS: A Tool for Performance Improvement." *Health Care Financing Review* 22 (3): 101–7.
- Hargraves, J. L., R. D. Hays, and P. D. Cleary. 2003. "Psychometric Properties of the Consumer Assessment of Health Plans Study (CAHPS) 2.0 Adult Core Survey." *Health Services Research* 38 (1): 1509–23.
- Hays, R. D., J. A. Shaul, V. S. Williams, J. S. Lubalin, L. D. Harris-Kojetin, S. F. Sweeny, and P. D. Cleary. 1999. "Psychometric Properties of the CAHPS 1.0 Survey Measures." *Medical Care* 37 (Suppl 3): ms22–31.
- Kaiser Family Foundation. 2014. "Medicare Advantage Fact Sheet" [accessed on December 9, 2014]. Available at <http://kff.org/medicare/fact-sheet/medicare-advantage-fact-sheet>
- Katon, W. J., E. Lin, J. Russo, and J. Unützer. 2003. "Increased Medical Costs of a Population-Based Sample of Depressed Elderly Patients." *Archives of General Psychiatry* 60 (9): 897–903.



- Keenan, P. S., M. N. Elliott, P. D. Cleary, A. M. Zaslavsky, and B. E. Landon. 2009. "Quality Assessments by Sick and Healthy Beneficiaries in Traditional Medicare and Medicare Managed Care." *Medical Care* 47 (8): 882–8.
- Kivelä, S. L., and K. Pahkala. 2001. "Depressive Disorder as a Predictor of Physical Disability in Old Age." *Journal of the American Geriatrics Society* 49 (3): 290–6.
- Klein, D. J., M. N. Elliott, A. M. Haviland, D. Saliba, Q. Burkhart, C. Edwards, and A. M. Zaslavsky. 2011. "Understanding Nonresponse to the 2007 Medicare CAHPS Survey." *The Gerontologist* 51 (6): 843–55.
- Kroenke, K., R. L. Spitzer, and J. B. Williams. 2003. "The Patient Health Questionnaire-2: Validity of a Two-Item Depression Screener." *Medical Care* 41 (11): 1284–92.
- Landon, B. E., I. B. Wilson, and P. D. Cleary. 1998. "A Conceptual Model of the Effects of Health Care Organizations on the Quality of Medical Care." *Journal of the American Medical Association* 279 (17): 1377–82.
- Landon, B. E., A. M. Zaslavsky, S. L. Bernard, M. J. Cioffi, and P. D. Cleary. 2004. "Comparison of Performance of Traditional Medicare vs. Medicare Managed Care." *Journal of the American Medical Association* 291 (14): 1744–52.
- Landon, B. E., A. M. Zaslavsky, R. C. Saunders, L. G. Pawlson, J. P. Newhouse, and J. Z. Ayanian. 2012. "Analysis of Medicare Advantage HMOs Compared with Traditional Medicare Shows Lower Use of Many Services during 2003-2009." *Health Affairs* 31 (12): 2609–17.
- Li, C., B. Friedman, Y. Conwell, and K. Fiscella. 2007. "Validity of the Patient Health Questionnaire 2 (PHQ-2) in Identifying Major Depression in Older People." *Journal of the American Geriatrics Society* 55 (4): 596–602.
- Maeng, D. D., G. R. Martsof, D. P. Scanlon, and J. B. Christianson. 2012. "Care Coordination for the Chronically Ill: Understanding the Patient's Perspective." *Health Services Research* 47 (5): 1960–79.
- Martino, S. C., M. N. Elliott, P. D. Cleary, D. E. Kanouse, J. A. Brown, K. L. Spritzer, A. Heller, and R. D. Hays. 2009. "Psychometric Properties of an Instrument to Assess Medicare Beneficiaries' Prescription Drug Plan Experiences." *Health Care Financing Review* 30 (3): 41–53.
- Martino, S. C., M. N. Elliott, D. E. Kanouse, D. O. Farley, Q. Burkhart, and R. D. Hays. 2011. "Depression and the Health Care Experiences of Medicare Beneficiaries." *Health Services Research* 46 (6 Pt 1): 1883–904.
- Morrison, D. F. 2005. *Multivariate Statistical Methods*, 4th Edition. Belmont, CA: Duxbury Press.
- Pierluissi, E., K. M. Mehta, K. A. Kirby, W. J. Boscardin, R. H. Fortinsky, R. M. Palmer, and S. Landefeld. 2012. "Depressive Symptoms after Hospitalization in Older Adults: Function and Mortality Outcomes." *Journal of the American Geriatrics Society* 60 (12): 2254–62.
- Pourat, N., M. Kagawa-Singer, and S. P. Wallace. 2006. "Are Managed Care Medicare Beneficiaries with Chronic Conditions Satisfied with Their Care?" *Journal of Aging and Health* 18 (1): 70–90.
- Rovner, B. W. 1993. "Depression and Increased Risk of Mortality in the Nursing Home Patient." *American Journal of Medicine* 94 (5A): 19S–22S.

- Saliba, D., S. DiFilippo, M. O. Edelen, K. Kroenke, J. Buchanan, and J. Streim. 2012. "Testing the PHQ-9 Interview and Observational Versions (PHQ-9 OV) for MDS 3.0." *Journal of the American Medical Directors Association* 13 (7): 618–25.
- Schafer, J. L., and J. W. Graham. 2002. "Missing Data: Our View of the State of the Art." *Psychological Methods* 7 (2): 147–77.
- Shimada, S. L., A. M. Zaslavsky, L. B. Zaboriski, A. J. O'Malley, A. Heller, and P. D. Cleary. 2009. "Market and Beneficiary Characteristics Associated with Enrollment in Medicare Managed Care Plans and Fee-for-Service." *Medical Care* 47 (5): 517–23.
- Sofaer, S. 2009. "Navigating Poorly Charted Territory: Patient Dilemmas in Health Care 'Nonsystems'." *Medical Care Research and Review* 66 (1 Suppl.): 75S–93S.
- Spitzer, R. L., J. B. Williams, K. Kroenke, M. Linzer, F. V. deGruy III, S. R. Hahn, D. Brody, and J. G. Johnson. 1994. "Utility of a New Procedure for Diagnosing Mental Disorders in Primary Care: The PRIME-MD 1000 Study." *Journal of the American Medical Association* 272 (22): 1749–56.
- Swenson, S. L., M. Rose, E. Vittinghoff, A. Stewart, and D. Schillinger. 2008. "The Influence of Depressive Symptoms on Clinician-Patient Communication among Patients with Type 2 Diabetes." *Medical Care* 46 (3): 257–65.
- Thombs, B. D., R. C. Ziegelstein, and M. A. Whooley. 2008. "Optimizing Detection of Major Depression among Patients with Coronary Artery Disease Using the Patient Health Questionnaire: Data from the Heart and Soul Study." *Journal of General Internal Medicine* 23 (12): 2014–7.
- Unützer, J. 2007. "Clinical Practice: Late-Life Depression." *New England Journal of Medicine* 357 (22): 2269–76.
- Unützer, J., D. L. Patrick, G. Simon, D. Grembowski, E. Walker, C. Rutter, and W. Katon. 1997. "Depressive Symptoms and the Cost of Health Services in HMO Patients Aged 65 Years and Older: A 4-Year Prospective Study." *Journal of the American Medical Association* 277 (20): 1618–23.
- Unützer, J., D. L. Patrick, P. Diehr, G. Simon, D. Grembowski, and W. Katon. 2000. "Quality Adjusted Life Years in Older Adults with Depressive Symptoms and Chronic Medical Disorders." *International Psychogeriatrics* 12 (1): 15–33.
- Wolter, K. M. 2007. *Introduction to Variance Estimation*, 2nd Edition. New York: Springer.
- Zaslavsky, A. M., L. B. Zaboriski, L. Ding, J. A. Shaul, M. J. Cioffi, and P. D. Cleary. 2001. "Adjusting Performance Measures to Ensure Equitable Plan Comparisons." *Health Care Financing Review* 22 (3): 109–26.

## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

Appendix SA2: Detail on 11 CAHPS Measures of Patient Experience.

Appendix SA3: Details of Regression Model Assessing Whether the Association between Having Depressive Symptoms and Patient Experience Differs among Beneficiaries in MA versus FFS.

Appendix SA4: Characteristics of MA and FFS Beneficiaries with and without Depressive Symptoms.