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Depression Care and Treatment in a Chronically Ill Medicare Population

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Abstract

Objective—The purpose of this study is to examine depression care among chronically ill Medicare Advantage beneficiaries.

Methods—This study includes 5,898 Medicare Advantage members with a depression diagnosis enrolled between 2008 and 2010 in a care management program. Two depression care indicators were created: 1) *Any depression care* (1 antidepressant prescription or 1 specialty mental health visit) and 2) Among those receiving *any depression care*, those receiving an antidepressant prescription for 90 days or 2 specialty visits. Multivariable analysis using logistic regression was used to examine correlates of depression care.

Results—Among those < 65 years old, 72% received any depression care with 75% receiving 90 days of an antidepressant and/or 2 specialty visits. Among 65 years old, 65% received any depression care with 67% receiving 90 days of an antidepressant and/or 2 specialty visits. For both age groups, female gender, medical comorbidities, and dual eligibility were positively associated with an antidepressant prescription. In the older group, female gender was positively associated with at least a 90 day supply of an antidepressant prescription, while substance use disorders were negatively associated with receiving a minimum of 90 days of an antidepressant. Regional differences and certain psychiatric comorbidities were also associated with receiving depression care.

Conclusion—Two-thirds of the depressed patients in this Medicare Advantage population received depression care. Further studies are needed to examine the effects of quality improvement efforts in the context of care management programs for chronically ill older adults.

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Keywords

Depression care; antidepressant; Medicare; chronic medical conditions

Introduction

Major depressive disorder (MDD) is a prevalent and disabling illness that commonly co-occurs with other medical illnesses, especially among older adults (1). As the population continues to age, the number of older adults with multiple medical conditions is also increasing. Sixty-five percent of Medicare beneficiaries have more than 1 chronic medical condition with this subgroup accounting for the majority of Medicare costs (2, 3). MDD in the medically ill older adult has been shown to be associated with a higher risk of physical disability, increased health care utilization, and higher medical costs (4-7). Despite the high burden of depression in the medically ill older adult population and the availability of evidence-based psychosocial and pharmacological treatments (8), this disorder often remains both under recognized and undertreated (9, 10). For instance, among older fee-for-service traditional Medicare beneficiaries diagnosed with depression, the rate of depression treatment is approximately two-thirds (11).

Medicare Advantage plans (named under the Medicare Modernization Act of 2003) are private health plans paid by Medicare to provide benefits to their beneficiaries. As of 2012, 13.1 million Medicare beneficiaries have chosen to enroll in these private plans (12). In recent years, a number of care management programs have been developed and offered as part of Medicare Advantage services (13) to coordinate the care of high risk and high cost Medicare beneficiaries with multiple medical and behavioral health conditions. Since depression is a treatable condition, it is important to examine the type and extent of care and treatment for depression in this population. Findings would inform care management programs about identifying potential interventions to support members in adhering to the prescribed plan of care. The purpose of this study is to describe the pattern of depression care for Medicare Advantage members participating in a national care management program.

Methods

Study setting and participants

Humana Cares is an integrated care management program that provides telephonic and in-person support for chronically ill Medicare Advantage members. Humana Cares currently provides complex chronic care management for more than 180,000 members in various Medicare Advantage plans nationwide. The goal of the program is to identify issues that can be changed and improved, initiate appropriate interventions, and eliminate or mitigate complications, including the need for preventable emergent care and unnecessary hospitalizations. The program includes 1,300 care managers who are registered nurses (RNs), advanced registered nurse practitioners (ARNPs), behavioral health specialists, and social workers. The study sample includes Humana Cares members enrolled from November 2008 to January 2010 (n=5,898) who have an initial depressive disorder diagnosis (ICD-9 codes: 296.2, 296.3, 296.90, 300.4, 309.28, 311) and who have 180 days of available data following a depression diagnosis. Depressive type psychosis (298.0) has been excluded to avoid mis-classification that would include cases of psychosis such as schizophrenia, advanced dementia, or delirium. This study was approved by the institutional review board at the University of Washington, Seattle and by Humana Care's privacy and legal departments.

Measurements

Two provider-based outcome indicators were created to measure depression treatment: 1) *Any depression care* and 2) Receipt of at least 90 days of antidepressants or at least two specialty mental health visits (among members receiving *any depression care*). *Any depression care* was defined as the receipt of at least one antidepressant prescription or having had at least one specialty mental health visit (based on Current Procedure Terminology codes) within 180 days following the initial depression diagnosis. We also examined the receipt of a minimal course of depression treatment based on the Healthcare Effectiveness Data and Information Set (HEDIS) antidepressant management measure of a minimum of 90 days of treatment with an antidepressant medication (14) or at least two specialty mental health visits within 180 days of depression diagnosis (in order to measure a patient's engagement in mental health care after an initial assessment).

A broad definition for antidepressants was used for this study which included newer classes such as serotonin reuptake inhibitors as well as those from older classes such as tricyclic antidepressants to reflect real world prescribing practices. The following antidepressants were included in this study: amitriptyline, nortriptyline, imipramine, doxepin, clomipramine, desipramine, amoxapine, maprotiline, serzone, trazodone, bupropion, mirtazapine, fluoxetine, paroxetine, sertraline, fluvoxamine, citalopram, escitalopram, duloxetine, and venlafaxine. Although some of these medications are used for other indications such as neuropathic pain or insomnia, we applied an inclusive approach in order to capture all treatments that could potentially provide antidepressant benefit. The days supply of an antidepressant was calculated using the fill dates from claims data for these medications.

Member level factors include age, gender, hierarchical condition category (HCC) score, insurance type, and region of country. The HCC was introduced by the Center for Medicare and Medicaid Services as a risk adjustment method to adjust capitation payments to private Medicare plans. The HCC model takes into account demographic and diagnostic codes (based on ICD-9) to generate a summary risk score for patients (15, 16). HCC was used to adjust for medical complexity of patients in our analysis. Psychiatric comorbidities were based on ICD-9 diagnostic codes in claims diagnoses and included the following: dementia (290), bipolar disorder (296.0, 296.1, 296.4-8), schizophrenia (295.0-9), and substance use disorders (291-292, 303-305).

Statistical analyses

This study is a secondary analysis of prospectively collected administrative data. Data were analyzed using STATA version 11. The sample consisted of 5,898 members who had 180 days of data following a depression diagnosis. Two main age groups were created: those less than 65 years old and those 65 years old and older (an "old-old" group of those 75 years and older was also created and compared to those aged 65-74). People who qualify for Medicare before age 65 represent a distinctly different population than those who are eligible to enroll in Medicare upon reaching age 65 (e.g. younger Medicare beneficiaries are typically also eligible for Medicaid and thus are considered "dual eligible"). Descriptive analysis was performed comparing depressed individuals from these two main age groups. Student's t-test was used to compare the means of continuous variables, whereas chi-squared analysis was used for categorical variables. To describe the correlates of receipt of depression care, multivariable logistic regression models were constructed with the following independent variables: age, gender, hierarchical conditional categories, dual eligibility, dementia, schizophrenia, bipolar disorder, substance use disorder, and region (South, Northeast, Midwest, West, as defined by Humana Cares markets). The dependent variables were: 1) receipt of an antidepressant 2) receipt of a greater than 90 day supply of an antidepressant 3)

receipt of at least one specialty mental health visit and 4) receipt of at least 2 specialty mental health visits.

Results

Table 1 summarizes the demographic and clinical characteristics of depressed participants who are less than 65 years old and 65 years old or older. The mean age of the younger and older age groups was 54.5 (± 7.9) and 77.0 (± 7.6), respectively. The majority of participants in both groups were female (64% for the young and 65% for the old). As expected, participants under 65 years of age were less likely than those over 65 years to have dementia, but more likely to have other serious behavioral health conditions including schizophrenia, bipolar disorder, substance use disorders, and dual eligibility. The younger group also had significantly lower medical comorbidity as measured by HCC scores.

Table 2 summarizes the proportion of participants receiving *any depression care* as well as those receiving at least 90 days of antidepressants or two specialty visits in the two age groups. Overall, 67% of the sample received *any depression care*. Among participants receiving depression care, 70% received at least 90 days of antidepressants and/or two specialty visits.

Antidepressant Treatment

Table 3 shows the multivariable analyses, stratified by age (< 65 and ≥ 65 years) for the correlates of receiving an antidepressant prescription and the receipt of at least 90 days of an antidepressant. In both age groups, female gender, increased medical complexity, as measured by HCC, and dual eligibility are associated with increased likelihood of receiving an antidepressant.

Among those younger than 65 years of age, compared to those living in the South, living in the West was associated with a higher likelihood of receiving an antidepressant prescription. Among those older than 65 years of age, a dementia diagnosis was associated with a higher likelihood of receiving an antidepressant prescription. Among participants older than 65 who received an antidepressant medication, female gender was associated with receiving at least 90 days of an antidepressant, while those living in the Northeast (compared to those living in the South) and those with a substance use disorder were less likely to receive at least 90 days of an antidepressant.

Specialty Mental Health Visits

Table 4 shows the multivariable analyses for the correlates of having had at least one specialty mental health visit and of having at least two specialty mental health visits. Among those under 65 years of age, those living in the Midwest and West (compared to those living in the South), and those having a diagnosis of dementia, schizophrenia, or bipolar disorder were more likely to have at least one specialty visit. Among those who receive at least one specialty visit in the younger group, female gender and a diagnosis of bipolar disorder were independently associated with a higher likelihood of having at least two visits, while greater medical complexity, as measured by HCC score, was associated with a lower likelihood of receiving two or more specialty visits.

Among the group over 65 years of age, female gender, dual eligibility, and age greater than 75 years were associated with lower likelihood of specialty mental health service use. Compared to those living in the South, those living in the Midwest were more likely to have at least one specialty health visit. Having a concurrent psychiatric diagnosis (dementia, schizophrenia, or bipolar disorder) was associated with having at least one specialty visit. Among patients having had at least one specialty visit, all of the psychiatric diagnoses were

also associated with having at least two specialty visits. Of note, unlike patients with comorbid psychiatric illnesses, patients with substance use disorders in both age groups were not more likely to receive specialty care.

Discussion

The overall rate of depression treatment that was provided in the first 180 days after a depression diagnosis to this group of high acuity Medicare Advantage members was two-thirds (67%). Among those receiving any depression care, approximately two-thirds (70%) received at least 90 days of antidepressants and/or at least two specialty visits. Rates of any depression treatment were slightly higher among those under 65 years of age (72% versus 65% among those older than 65). An earlier study of older fee-for-service traditional Medicare beneficiaries also found a rate of depression treatment to be about two-thirds for those diagnosed with depression (11). Since this previous study used relatively more lenient criteria for depression care (antidepressant prescriptions and psychotherapy visits were counted if they occurred in the calendar year in which the depression diagnosis was documented), our study indicates that rates of depression treatment in this population may actually be higher than those seen in fee-for-service Medicare populations. This may be attributed to national trends of increasing rates of depression treatment (17) or to the fact that the population in our study was more severely medically ill. Only a quarter (23.4%) of the entire sample had a specialty visit in the 180 days following a depression diagnosis. Among those having had a specialty visit, only about half (55%) had two or more visits. The general preference of seeking mental health treatment in primary care over specialty care is consistent with past studies (18).

Some factors may contribute to the rate of depression treatment among our Medicare Advantage members compared with Medicare cohorts from previous studies. For example, in this highly medically complex patient population, chronic medical illnesses may 'crowd out' PCPs' concerns related to behavioral health issues. There are several factors associated with depression care examined in this population that are also worth highlighting: gender, age, region, medical comorbidities, psychiatric comorbidities, and substance use disorders. In general, depressed women in our sample were more likely to receive depression care than men. This finding is consistent with other studies of older adults (19). However, among those older than 65 years of age, women were less likely than men to receive at least one specialty visit.

Patients 75 and older were less likely to receive specialty mental health care than those aged 65-74. This disparity in depression treatment persists despite previous calls for improved depression care in late-life (20). It is possible that this old-old age group is physically frailer and less able to attend specialty appointments. Our study also showed that among those younger than 65 years of age, medical complexity was associated with lower likelihood of having two or more specialty visits. The finding that patients with chronic medical conditions are less likely to receive psychotherapy has been highlighted in another study (21). It has been hypothesized that these chronically ill patients may have developed a stronger relationship with their primary care providers, resulting in higher rates of antidepressant prescribing in primary care and less referral to mental health specialties. Our finding that the more medically ill in either age group were more likely to receive an antidepressant prescription is consistent with this hypothesis.

Compared to the respective age group living in the South, the younger age group living in the West was more likely to receive an antidepressant, while the older subjects living in the Northeast were less likely to receive at least 90 days of antidepressants. The younger age group residing in the Midwest and West were more likely to receive at least one specialty

visit, while older participants living in the Midwest were more likely to receive at least one specialty visit. These regional variations may reflect patient preferences, prescribing and referral preferences among PCPs, and differences in the availability of specialty services.

Among those 65 years and older, patients with dementia were more likely to receive an antidepressant prescription, while those with a substance use disorder were less likely to receive a minimum of 90 days of an antidepressant. Comorbid psychiatric disorders (dementia, schizophrenia, and bipolar disorder) were associated with at least one specialty visit in both age groups and associated with two or more specialty visits in those older than 65 years. This association is likely to be due to the management of the comorbid psychiatric disorder in specialty settings. However, it is not possible to rule out reverse causality in a cross-sectional analysis (i.e. specialty visits result in higher rates of recorded psychiatric diagnoses). In contrast, a pattern of suboptimal depression care emerges for those with substance use disorders in which these patients *are not* more likely to receive specialty care. Furthermore, among older depressed patients receiving an antidepressant, this group is less likely to have at least 90 days of antidepressant treatment. Patients with substance use disorders may have more difficulty adhering to recommended treatments such as attending medical appointments and continuing antidepressant treatments compared to patients without a comorbid substance abuse diagnosis.

Our findings suggest a number of opportunities that were not examined here for improving the scope and quality of depression care for chronically ill Medicare beneficiaries. For instance, care managers leading the multidisciplinary team can assist patients with depressive disorders by providing health support and education with the goal of both increasing patient empowerment and self-care management. Patients could be further assisted through identification of barriers to care, as well as through care coordination and referrals thus increasing their access to adequate depression treatment. Care managers may also support primary care providers' efforts to identify and treat depression by monitoring members' depressive symptoms and engaging these providers when depressive symptoms are not improving. In this model of stepped care, patients who are not improving would then either have an escalation in the intensity of their treatment (e.g. increased dosage of antidepressant) or a treatment change (referral to specialty care) (22). A focus on quality improvement may also have potential for improving the extent and quality of depression care in this population. A recent study has shown that a depression-focused care management program was able to shorten the time to depression improvement by approximately 50% by using pay for performance incentives (23).

The major strengths of this study include the nationally representativeness of the sample as well as the large sample size. Our study also has several limitations. The study is limited by its observational nature as well as limitations inherent in using claims data. Another limitation is that patients may have had a depressive disorder prior to program enrollment (which would not be captured in our analysis) and may either have had their depression adequately treated or be in remission. Also, this study did not address the potential impact of long-term care management services on depression care. Although we have information on antidepressant prescription fills, we do not have information on patient adherence to these medications. We were also unable to measure patient characteristics such as race/ethnicity, socioeconomic level, and medical diagnoses as well as health services factors that may influence the receipt of depression care.

Conclusion

Two-thirds of the depressed patients in this Medicare Advantage population received any depression care with approximately two-thirds of these patients receiving at least 90 days of an antidepressant and/or at least two specialty mental health visits. The old-old and older

females are less likely to receive depression care. Although the presence of psychiatric disorders is associated with depression care, the presence of substance use disorders is not associated with depression care. Further studies are needed to examine the effects of quality improvement efforts in the context of care management programs for older adults.

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Table 1

characteristics of sample with depression diagnosis (%(n) or mean±SD)

Sociodemographic characteristics	< 65 y.o. (n=1,727)	65 y.o. (n=4,171)
age (sd)	54.5±7.9	77.0±7.6
age %		
75 y.o.	n/a	58.5 (2441)
gender (F) %	64.0 (1105)	65.3 (2722)
Hierarchical conditional categories (sd)	2.1±1.7	2.2±1.6
Dual eligible %	30.7 (530)	18.3 (765)
Region %		
Northeast	3.13 (54)	3.7 (154)
Midwest	21.0 (363)	27.7 (1154)
South	68.4 (1181)	59.6 (2484)
West	7.5 (129)	9.1 (379)
Psychiatric Diagnoses		
Dementia %	8.9 (154)	31.1 (1299)
Schizophrenia %	6.4 (111)	1.4 (57)
Bipolar disorder %	19.0 (328)	4.9 (204)
Substance use disorder %	38.2 (660)	16.4 (684)

Table 2

Rates of depression care stratified by age groups (% (n))

Any Depression Care	Total (n=5898)	< 65 y.o. (n=1727)	65 y.o. (n=4171)
Received antidepressant prescription	58.1 (3426)	61.0 (1053)	56.9 (2373)
1 specialty mental health visit	23.4 (1378)	32.1 (554)	19.7 (824)
Antidepressant prescription and/or 1 specialty mental health visit	67.3 (3970)	72.4 (1250)	65.2 (2720)
Minimal Course of Depression Care ^a		< 65 y.o.	65 y.o.
90 days of antidepressant treatment ^b	69.6 (2386)	72.9 (768)	68.2 (1618)
2 specialty mental health visits ^c	55.0 (758)	66.8 (370)	47.1 (388)
90 days of antidepressant prescription and/or 2 specialty mental health visits ^d	69.8 (2771)	75.4 (943)	67.2 (1828)

^{a)} Minimal course of depression care was calculated only for participants who received any depression care.

^{b)} Rates of antidepressant treatment for those having an antidepressant prescription

^{c)} Rates of specialty mental health visits for those having had at least one specialty mental health visit

^{d)} Rates of depression care among those having had at least one specialty mental health visit and/or antidepressant prescription

Table 3

Multiple logistic regression models for the correlates of receiving antidepressant prescription within 180 days after depression diagnosis (stratified by age groups: <65 years old and ≥65 years old)

	<65 y.o.: received antidepressant	<65 y.o.: received 90 days of antidepressant ^b	≥65 y.o.: received antidepressant	≥65 y.o.: received 90 days of antidepressant ^b
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age (reference = 65-74 years)				
75 y.o.	n/a	n/a	0.91 (0.79-1.03)	0.96 (0.79-1.15)
gender (F)	1.48 (1.21-1.83) ^a	1.17 (0.87-1.57)	1.19 (1.04-1.35) ^a	1.22 (1.02-1.47) ^a
Hierarchical conditional categories	1.07 (1.01-1.14) ^a	1.04 (0.96-1.13)	1.07 (1.03-1.11) ^a	1.00 (0.95-1.06)
Dual eligible	1.40 (1.12-1.74) ^a	1.32 (0.98-1.79)	1.36 (1.15-1.61) ^a	1.22 (0.97-1.53)
Region (reference = South)				
Northeast	0.76 (0.44-1.32)	1.14 (0.47-2.73)	0.92 (0.66-1.29)	0.54 (0.34-0.85) ^a
Midwest	1.26 (0.98-1.62)	1.14 (0.81-1.61)	1.00 (0.86-1.15)	0.95 (0.78-1.17)
West	1.53 (1.03-2.27) ^a	1.07 (0.65-1.77)	0.95 (0.76-1.19)	0.84 (0.62-1.14)
Dementia	0.84 (0.59-1.17)	1.00 (0.61-1.64)	1.36 (1.18-1.56) ^a	1.14 (0.94-1.38)
Schizophrenia	0.80 (0.52-1.22)	0.96 (0.53-1.75)	1.16 (0.67-2.03)	0.70 (0.35-1.39)
Bipolar disorder	1.30 (0.99-1.71)	1.23 (0.85-1.78)	1.11 (0.83-1.49)	1.11 (0.74-1.66)
Substance use disorder	1.08 (0.87-1.33)	1.06 (0.80-1.42)	1.01 (0.85-1.20)	.72 (0.57-0.91) ^a

^a p<0.05

^b Among participants having had an antidepressant prescription

Table 4

Multiple logistic regression models for the correlates of receiving specialty mental health visits within 180 days after depression diagnosis (stratified by age groups: <65 years old and ≥65 years old)

	<65 y.o.: received 1 specialty mental health visit	<65 y.o.: received 2 specialty mental health visits ^b	≥65 y.o.: 1 specialty mental health visit	≥65 y.o.: 2 specialty mental health visits ^b
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age (reference = 65-74 years)				
75 y.o.	n/a	n/a	0.81 (0.68-0.96) ^a	0.88 (0.65-1.18)
gender (F)	1.00 (0.79-1.27)	1.53 (1.04-2.25) ^a	0.84 (0.71-0.99) ^a	1.04 (0.78-1.39)
Hierarchical conditional category	0.95 (0.88-1.01)	0.86 (0.76-0.96) ^a	1.04 (0.99-1.09)	0.93 (0.86-1.02)
Dual eligible	0.83 (0.65-1.07)	1.16 (0.76-1.76)	0.67 (0.54-0.85) ^a	0.96 (0.64-1.45)
Region (reference = South)				
Northeast	1.75 (0.96-3.18)	1.85 (0.65-5.30)	1.26 (0.84-1.90)	1.79 (0.86-3.70)
Midwest	1.36 (1.04-1.78) ^a	1.22 (0.77-1.95)	1.42 (1.19-1.70) ^a	1.04 (0.76-1.41)
West	1.55 (1.03-2.33) ^a	0.70 (0.37-1.32)	0.80 (0.57-1.06)	0.95 (0.54-1.66)
Dementia	1.49 (1.03-2.16) ^a	0.69 (0.39-1.22)	2.07 (1.75-2.45) ^a	1.39 (1.04-1.86) ^a
Schizophrenia	4.90 (2.99-8.03) ^a	1.30 (0.73-2.32)	2.98 (1.70-5.24) ^a	2.82 (1.21-6.58) ^a
Bipolar disorder	4.47 (3.40-5.88) ^a	2.92 (1.89-4.51) ^a	4.44 (3.30-5.98) ^a	2.14 (1.38-3.32) ^a
Substance use disorder	1.18 (0.93-1.48)	0.72 (0.49-1.06)	1.10 (0.89-1.37)	0.99 (0.69-1.43)

^a p<0.05

^b Among participants having had at least one specialty visit