Disparities in Antidepressant Treatment in Medicaid Elderly Diagnosed with Depression

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OBJECTIVES: To determine whether there were racial or ethnic disparities in the use of antidepressants in low-income elderly patients insured by Medicaid.

DESIGN: Examination of 1998 Medicaid claims data.

SETTING: Centers for Medicare and Medicaid Services Medicaid claims data for five U.S. states.

PARTICIPANTS: All Medicaid recipients aged 65 to 84 with a diagnosis of depression.

MEASUREMENTS: Treatment versus no treatment; in those treated, treatment with drugs was classified as old- or new-generation antidepressants.

RESULTS: In 1998, 7,339 unique individuals aged 65 to 84 had at least one outpatient encounter with depression as the primary diagnosis. Nearly one in four (24.2%) received no antidepressant drug therapy, and 22% received neither psychotherapy nor an antidepressant. African-American individuals were substantially more likely to be untreated (37.1%) than Hispanic (23.6%), white (22.4%), or Asian (13.8%) individuals. In logistic regression models adjusting for sex, state, long-term care status, and age group, African Americans with a primary diagnosis of depression were almost twice as likely as whites not to receive an antidepressant within the study period (odds ratio = 1.91, 95% confidence interval = 1.62–2.24). Patients in long-term care facilities and those aged 65 to 74 were less likely to receive treatment.

CONCLUSION: Substantial numbers of elderly Medicaid enrollees with a primary diagnosis of depression did not receive antidepressants or behavioral therapy. This gap in care disproportionately affected African-American patients. **J Am Geriatr Soc 53:456–461, 2005.**

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Depression is a common problem in older people—one that is often undetected, undiagnosed, untreated, or undertreated.[1,2] The National Institute of Mental Health estimates that 2 million adults aged 65 and older have major depression, with another five million affected by depressive symptoms.[3] Depression is even more prevalent in long-term care settings. Twenty percent of patients in long-term care have a diagnosis of depression recorded in the Minimum Data Set, which is considered to underestimate the true prevalence of depression as measured using clinical evaluation and diagnostic criteria.[4]

Despite the fact that depression causes impaired functional status and increased mortality in older people,[5,6] persons aged 65 and older may be less likely to be diagnosed or to receive treatment.[7] There are now a variety of treatment options for depression in older people, as well as emerging treatment guidelines.[8] Most of this treatment takes place in primary care settings.[9] Newer classes of drugs, such as selective serotonin reuptake inhibitors (SSRIs), have some advantages in side-effect profile over older tricyclic antidepressants (TCAs) in the treatment of geriatric depression, although both are clinically effective.[10] In primary care settings, antidepressants in general are commonly underused, underdosed, or prematurely discontinued.[11] Elderly persons of color are even less likely to be accurately diagnosed with depression or to receive treatment consistent with national guidelines.[12,13] Previous studies have suggested that African-American patients in particular are less likely to receive any pharmacological treatment for depression. If they are treated, elderly African-American patients are also less likely to receive newer agents such as SSRIs and more likely to receive older TCAs.[14] At least one study suggested a worsening of these disparities from the 1980s to the 1990s.[15] Fewer data are available for elderly persons from other minority populations.

Low-income elderly individuals often rely on Medicaid to pay for long-term care, physician and hospital

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copayments, and prescription medications. Within this Medicaid-insured population, insurance coverage and the ability to pay for medications should be equal between persons of different racial and ethnic groups, making it possible to control for these factors in assessing disparities in the treatment of depression. A study of one state's Medicaid population in 1989–1994 found that African Americans were less likely than whites to receive an antidepressant at the time of their initial depression diagnosis (27.2% vs 44.0%, $P<.001$). Of those receiving an antidepressant, whites were more likely than African Americans to receive SSRIs than TCAs.[16]

Medicaid data offer a unique opportunity to study racial and ethnic disparities in a low-income elderly population with a prescription drug benefit that is the same across all racial/ethnic groups. This study was therefore undertaken to determine whether there were racial disparities in the treatment of depression with antidepressant drugs or psychotherapy or disparities in the classes of drugs used to treat depression in low-income elderly patients insured by Medicaid.

METHODS

This study used 1998 Medicaid claims data for five states (Arkansas, Georgia, Indiana, New Jersey, and Washington) supplied by the Centers for Medicare and Medicaid Services (CMS) in a standardized state Medicaid research file format (SMRF). These states were selected from among all states for which 1998 SMRF data were available, to represent each geographic region in the United States, excluding very large or very small states and states with high managed care enrollment (>40%) because 1998 SMRF data lacked encounter-level claims for enrollees in capitated plans.

CMS produces SMRF data from quarterly claims data submitted by states to the CMS Medicaid Statistical Information System for production of required state-level reports and makes them available to researchers under specific data-use agreements to protect client confidentiality. SMRF files represent final action, paid claims for a single calendar year, based on date of service. Data in the SMRF files are divided into one personal summary or enrollment file (one record per unduplicated person) and four claims files (one record per billing claim or encounter). Race/ethnicity is self-reported in CMS SMRF files in five categories (white non-Hispanic, black non-Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Hispanic). Data fields and data dictionary are standardized from state to state, although differences in scope of coverage, reimbursement rates, billing practices, and fiscal intermediary procedures create significant state-level variations in Medicaid utilization rates. At the time of this project, 1998 files were the most recent data available. Data files are stored securely and confidentially, and the study was conducted with institutional review board approval.

The study sample was limited to individuals aged 65 to 84 who were continuously enrolled in Medicaid for all 12 months of 1998. A cohort of individuals with an outpatient claim that carried a primary diagnosis of depression using *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 296.2–296.39 was then extracted, to assure that there was at least one outpatient visit with depression as the first diagnosis, representing at least one opportunity to initiate appropriate treatment for documented depression. Patients with only bipolar illness or dysthymia were excluded, because the range of treatments would be more variable.

National Drug Codes were used to identify the main outcome variable, which was the prescription of an antidepressant drug. These drugs were further sorted by chemical class and then classified as old- or new-generation antidepressants. TCAs (secondary and tertiary amines) and monoamine oxidase inhibitors were classified as old-generation antidepressants.

Rates of drug treatment were calculated by percentage with 95% confidence intervals for the total population, as well as for each subgroup (categorized by race, sex, state, and days in long-term care). Rates and confidence intervals were also calculated for those receiving any a new drug, an old drug, both, or neither during the calendar year (Table 1) for each subgroup. Logistic regression was performed to assess the affect of multiple factors on any drug treatment (Table 2) and on new versus old drug treatment (Table 3). Current procedural terminology codes 90801, 06, 08, 43, 47, 53, 62; 99203, 04; 99211–15; and Y0601 were used to establish whether patients had a paid claim for behavioral counseling or psychotherapy. SMRF files do not record the specialty of the provider treating the patient for any of the paid claims.

RESULTS

In the five target states, there were 4,163,124 individual persons in the Medicaid personal summary (enrollment) files in 1998, with 352,900 (8.5%) aged 65 to 84. For individuals included in this cohort, there were 72,581 events or service encounters in which depression was listed as the primary diagnosis. These claims represented 7,339 (2.1%) unique individuals aged 65 and older diagnosed with depression, with an average of 9.9 total claims per person. A diagnosis of depression was found in 2.7% of white individuals (5,498/203,001), 1.0% of African Americans (811/78,922), 2% of Asians (196/9,984), and 2.2% of Hispanics (191/8,692). Median age of elderly individuals diagnosed with depression was 73, and 75.4% were female.

Of those with a primary diagnosis of depression on at least one visit, 1,777 (24.2%) received no drug treatment for depression (neither old nor new antidepressant drugs). Four thousand seven hundred eighteen individuals (64.3%) received new antidepressant drugs alone or in combination, whereas 1,932 (26.3%) received old antidepressant drugs alone or in combination. More than half (56.3%) of individuals receiving old antidepressant drugs also received new antidepressant drugs in the same calendar year, representing 1,088 individuals, or 14.8% of all persons diagnosed with depression.

Drug treatment rates varied by patient demographics, long-term care status, and state, as shown in Table 2. Overall, 75.8% of patients received new or old antidepressants or both (24.2% with no drug treatment). Men were somewhat more likely than women to receive no antidepressant drug treatment (27.3% vs 23.2%). African-American individuals were substantially more likely to receive no antidepressant treatment (37.1%) than Hispanic (23.6%), white

Table 1. Drug Treatment Rates for Depressed Patients by Demographic Characteristic

Characteristic	Not Treated*	Old Drugs†	New Drugs‡	Both§	Any Drug‖	New Out of All Treated¶
	n (%) [95% CI]					% [95% CI]
Sex						
Male	493 (27.3) [25.0–29.6]	351 (19.4) [18.0–20.8]	1,164 (64.5) [62.0–67.0]	203 (11.2) [9.8–12.6]	1,312 (72.7) [71,0–74.4]	88.7 [87.0–89.4]
Female	1,283 (23.2) [22.0–24.4]	1,581 (28.6) [27.0–30.2]	3,554 (64.2) [63.0–65.4]	885 (16.0) [15.0–17.0]	4,250 (76.8) [76.0–77.6]	83.6 [83.0–84.2]
Ethnicity						
White	1,231 (22.40) [21.0–23.8]	1,448 (26.3) [25.0–27.6]	3,660 (66.6) [65.0–68.2]	841 (15.3) [14.0–16.6]	4,267 (77.6) [77.0–78.2]	85.8 [85.0–86.6]
Black	301 (37.1) [34.0–40.2]	171 (21.1) [18.0–24.2]	417 (51.4) [48.0–54.8]	78 (9.6) [7.6–11.6)]	510 (62.9) [60.2–65.8]	81.8 [78,.0–85.6]
Asian	27 (13.8) [8.9–18.7]	68 (34.7) [28.0–41.4]	144 (73.5) [67.0–80.0]	43 (21.9) [16.0–27.8]	169 (86.2) [81.0–91.4]	85.2 [80.0–90.4]
Hispanic	45 (23.6) [17.0–30.2]	60 (31.4) [25.0–38.4]	120 (62.8) [56.0–69.6]	34 (17.8) [12.0–23.6]	146 (76.4) [70.0–82.8]	82.2 [76.0–88.9]
State						
Arkansas	209 (30.6) [27.0–34.2]	175 (25.6) [22.0–29.2]	391 (57.2) [53.0–61.4]	91 (13.3) [11.1–15.5]	475 (69.4) [66.0–72.8]	82.3 [79.0–85.6]
Georgia	118 (23.4) [20.0–26.8]	184 (36.4) [32.0–40.8]	290 (57.4) [53.0–61.8]	87 (17.2) [14.0–20.4]	387 (76.6) [73.0–80.2]	74.9 [71.0–78.8]
Indiana	462 (21.2) [20.0–22.4]	488 (22.4) [21.0–23.8]	1,527 (70.1) [68.0–72.2]	300 (13.8) [12.0–16.6]	1,715 (78.8) [77.0–80.6]	89.0 [88.0–90.0]
New Jersey	796 (29.1) [27.0–31.2]	690 (25.2) [24.0–26.4]	1,599 (58.5) [57.0–60.0]	352 (12.9) [12.0–13.8]	1,937 (70.9) [69.0–72.8]	82.6 [81.0–84.2]
Washington	192 (15.5) [13.0–18.0]	395 (31.9) [29.0–34.8]	911 (73.5) [71.0–76.0]	258 (20.8) [19.0–22.6]	1,048 (84.5) [82.0–87.0]	86.9 [85.0–88.8]
Long-term care days						
None	1,059 (25.4) [24.0–26.8]	1,225 (29.4) [28.0–30.8]	2,548 (61.2) [60.0–62.4]	670 (16.1) [15.0–17.2]	3,103 (74.6) [73.0–76.2]	82.1 [81.0–83.2]
1–119	102 (25.4) [21.0–29.9]	92 (22.9) [19.0–26.8]	263 (65.6) [61.0–70.2]	56 (14.0) [11.0–17.0]	299 (74.6) [70.0–79.2]	88.0 [84.0–92.0]
≥120	616 (22.2) [21.0–23.4]	615 (22.2) [21.0–23.4]	1907 (68.7) [67.0–70.4]	363 (13.0) [12,0–14.0]	2,159 (77.8) [76.0–79.6]	88.3 [87.0–89.6]
Total	1,777 (24.2) [23.0–25.4]	1,932 (26.3) [25.0–27.6]	4,718 (64.3) [63.0–65.6]	1,088 (14.8) [14.0,15.6]	5,562 (75.8) [75.0–76.6]	84.8 [84.0–85.6]

* Not treated with any antidepressant.
† Treated with old drug (tricyclic antidepressant or monoamine oxidase inhibitor) alone or in combination.
‡ Treated with new drug alone or in combination.
§ Treated with both new and old drugs.
‖ Treated with any drug (old, new, or both).
¶ Treated with new drugs as a % of total treated.
CI = confidence interval.

(22.4%), or Asian individuals (13.8%). Rates of nontreatment also varied significantly by state (ranging from a low of 15.5% in Washington to 30.6% in Arkansas). Logistic regression analysis (Table 2) showed that race/ethnicity remained a significant risk factor for not receiving antidepressant drug treatment after controlling for state of residence, sex, long-term care status, and age (odds ratio = 1.91). State of residence, male sex, younger age group, and long-term care days (1–119) were also significant predictors of nontreatment.

For patients who did receive antidepressant therapy, there were minor variations in the class of drug used across different subpopulations. For example, more than 80% of all patients receiving any antidepressant drug received at least one prescription of a *new* antidepressant drug in 1998 (ranging from a low of 81.8% for African Americans to a high of 85.8% for whites). Of all drug-treated patients, 88.7% of men had at least one paid claim for a new drug, compared with 83.6% of women. At the state level, rate of new drug antidepressant prescriptions for all treated patients ranged from a low of 74.9% in Georgia to a high of 89.0% in Indiana. This state-level variability became somewhat less pronounced after controlling for age, race, and sex. Logistic regression showed persistent state-to-state variations (Table 3). Only 2.4% of all depressed patients had a paid claim for behavioral counseling or psychotherapy. A total of 21.8% of patients (1,601/7,339) with a primary diagnosis of depression had no paid claims for any appropriate depression treatment (neither psychotherapy nor an antidepressant).

Table 2. Logistic Regression: Factors Predicting No Drug Treatment (Neither Old Nor New Antidepressant)

Variable	Odds Ratio (95% Confidence Interval)	*P*-value
Constant	0.146	<.001
Sex		
Female	1.00	
Male	1.29 (1.13–1.47)	<.001
Race		
White, non-Hispanic	1.00	
Black, non-Hispanic	1.91 (1.62–2.24)	<.001
Asian	0.73 (0.47–1.12)	.15
Hispanic	0.91 (0.64–1.29)	.59
State		
Washington	1.00	
Arkansas	2.15(1.71–2.72)	<.001
Georgia	1.37 (1.03–1.82)	<.05
Indiana	1.50 (1.23–1.83)	<.001
New Jersey	2.18 (1.80–2.64)	<.001
Days in long-term care		
0	1.00	
1–119	1.40 (1.22–1.59)	<.02
≥120	1.36 (1.06–1.74)	<.001
Age		
65–74	1.0	
75–84	0.86 (0.76–0.97)	.01

Table 3. Logistic Regression: Factors Predicting New-Drug Antidepressant Usage

Variable	Odd Ratio (95% Confidence Interval)	*P*-value
Constant	8.17	<.001
Sex		
Female	1.00	
Male	1.41 (1.185–1.72)	<.001
Race		
White, non-Hispanic	1.00	
Black, non-Hispanic	0.89 (0.69–11.4)	.35
Asian	0.88 (0.57–1.37)	.67
Hispanic	0.90 (0.57–143)	.57
State		
Washington	1.00	
Arkansas	0.71 (0.52–0.97)	.03
Georgia	048 (0.34–0.66)	<.001
Indiana	1.07 (0.83–1.374)	.61
New Jersey	0.68 (0.54–0.87)	<.01
Days in long-term care		
0	1.00	
1–119	0.93 (0.64–1.37)	.72
≥120	0.70 (0.58–0.84)	<.001
Age		
65–74	1.0	
75–84	0.98 (0.83–1.15)	<.001

DISCUSSION

One major finding of this study is that, across all racial and ethnic groups, nearly one in four low-income elderly Medicaid patients diagnosed with depression did not receive drug therapy, despite having insurance coverage for medications. More than 21% received neither psychotherapy nor an antidepressant. This is consistent with previous studies suggesting inadequate treatment of depressed individuals, even when they are diagnosed with depression and have insurance.[17,18]

Only about 2% of this Medicaid sample met the inclusion criteria for a primary diagnosis of depression, which implies a specific moment of opportunity when the patient and provider had interacted around the issue of depression and had an opportunity to discuss or initiate treatment. The most recent wave of the National Comorbidity Survey found a 6.6% 12-month prevalence of depression in the general population, with higher rates in poor and disabled groups.[19] The low prevalence of depression in this sample may reflect the strictness of the inclusion criteria (not including dysthymia or bipolar disorder) or the limitations of this Medicaid data set in having only a primary diagnosis for each outpatient visit, or it may actually reflect missed diagnoses of depression. The National Institute of Mental Health has recently begun a major public initiative to address the issue of underdiagnosis of depression.[20]

Epidemiological surveys indicate that the rate of 12-month prevalence of major depression and depressive symptoms[20–22] is similar between African-American and white individuals, especially after controlling for age and income, but African Americans are less likely than white patients to be diagnosed accurately in primary care and emergency room settings.[23,24] These Medicaid data do not allow the prevalence of undiagnosed depression to be assessed in this low-income population, but approximately one in four individuals who received a primary diagnosis of depression received no pharmacological treatment for this disorder, even though the strict use of only the primary diagnosis implies that each patient had at least one opportunity for the provider to initiate appropriate treatment for documented depression. Undertreatment of depression is a particular problem in elderly patients, for whom providers are managing the competing demands of multiple medical complaints and various medication interactions. Unfortunately, it was impossible to control for differing rates of comorbid illness because the outpatient claims included only one primary diagnosis code for each encounter. There is some evidence that some physicians underdiagnose depression because they may regard depressive symptoms as normal aspects of aging, rather than as a disorder requiring treatment.[25]

The nontreatment of depression in the elderly Medicaid population was significantly worse in African-American individuals than in whites, with more than one in three depressed African-American patients in these Medicaid data going untreated throughout 1998. These differences persisted in spite of the fact that patients of each racial/ethnic group within each state had exactly the same prescription drug benefit, even after controlling for age, sex, state, and long-term care status. State-to-state variations are more easily explained, especially in the type of antidepressant

used, because each state administers its own drug benefit and may set its own rules regarding formulary lists and other restrictions.

How can these racial and ethnic disparities be explained? First, it must be acknowledged that the data do not have explanatory power. However, causes of disparities in care are often broken down into patient-, provider-, and system-level factors. For example, as a patient-driven factor, African-American persons may find medication treatment less acceptable than whites[26] and may prefer counseling to drug therapy.[27] They are more likely to seek care from informal sources such as pastors, spiritual healers, family, and friends[28] and may be more likely to mistrust a physician's recommendation of drug treatment for depression.[29] There are also problems of patient compliance—the data do not show the rate of prescribing these medications, but rather the rate of completed prescriptions as measured by paid claims.

Provider factors must also be considered, and the possibility of unconscious stereotypes or bias (e.g., "the strong black woman" image) cannot be excluded.[30] Ultimately, the pivotal relationship is the physician-patient dyad, where trust and effective communication must occur for appropriate diagnosis and treatment of depression to be completed.

Systemic or institutional issues may also be a factor, although in this study, patients of all racial/ethnic groups had the same insurance coverage for providers and medications. Still, Medicaid providers may be less likely to locate in minority neighborhoods, or there may be uneven distribution of mental health professionals. The recent Institute of Medicine report, *Unequal Treatment,* has outlined a series of strategies needed to address disparities in healthcare delivery, including efforts to improve care financing, allocation of care, community-based care, and educational programs targeted at improving provider-patient communication.

Equality of prescription drug coverage by itself was not sufficient to eliminate racial disparities in receiving drug treatment for depression. Medicaid covers 28% of the African-American population, including a significant number of low-income elderly, suggesting this as an important focus of interventions designed to reduce racial and ethnic health disparities.

These data also suggest that there is significant state-to-state variation between treatment and nontreatment of depression in the Medicaid population. Given that rates of depression are comparable across different regions of the United States, the finding suggests that state Medicaid policies, reflected as differences in scope of coverage, fee structures, and practice patterns, may result in substantial differences in rates of treatment.

The good news from this study is that the majority of elderly Medicaid patients diagnosed with depression received drug therapy, although one in four did not. There is further good news in that, at least by 1998, the diffusion of technology was significant enough to assure that 80% or more of Medicaid clients from almost all of the population subgroups who received drug treatment were treated at least once with a newer-class antidepressant drug. This is a change from the old- versus new-drug treatment disparities found previously.[15] One possible explanation is that, by 1998, the newer treatments had finally diffused to all segments of the population. An alternative explanation is that new versus old disparities still exist in the larger elderly population covered by Medicare but that perhaps the added prescription drug benefit enjoyed by this low-income, dually eligible (Medicare- and Medicaid-insured) segment of the elderly population helped to eliminate economic barriers or financial incentives to differential prescribing.

There are a number of limitations to this study. Because Medicaid claims data rely on physician diagnosis, they do not allow for the identification of patients who were depressed but who were undiagnosed or never had an outpatient claim for which depression was the primary diagnosis. It is also possible that some of the patients listed as untreated in this analysis received counseling from non-Medicaid providers, pastors, or lay-counselors for their depression, a pattern of care that is more common with minority patients. Medicaid managed mental healthcare "carve-outs" may also have limited the ability to identify behavioral counseling or psychotherapy across all racial/ethnic groups. By looking only at a single calendar year, it was also impossible to discern the timing of the onset of depression from the initiation of treatment. In addition, only clients aged 65 to 84 were included because of potential differences in primary care approaches to patients in this age group, as well as black-white survival differences.

CONCLUSIONS

The high rates of untreated depression and persistent racial disparities in antidepressant therapy in this elderly Medicaid population suggest important areas of policy concern. Efforts to expand prescription coverage, such as the new Medicare drug prescription benefit, may help diminish differences between use of older and newer drugs for low-income elderly but may not be sufficient to eliminate all disparities. Continued vigilance will be needed to ensure that vulnerable populations receive high-quality care.

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