ORIGINAL ARTICLE

Does Medicare Managed Care Provide Equal Treatment for Mental Illness Across Races?

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Background: While disparities in access to care are well documented, little is known about the quality of mental health care received by racial and ethnic minorities. We examined the quality of mental health care received by elderly enrollees in Medicare+Choice plans.

Methods: An observational study was performed using individual-level Health Plan Employer Data and Information Set data. From 4182 to 5 016 028 individuals 65 years or older and enrolled in Medicare+Choice plans in 1999 were involved in different measures. Rates of mental health inpatient discharges, average length of stay, percentage of members receiving mental health services, rates of follow-up after hospitalization for mental illness, optimal practitioner contacts for antidepressant medication management, and effective acute- and continuation-phase treatment were assessed.

Results: Compared with whites, minorities received substantially less follow-up after hospitalization for mental illness. The 30-day follow-up rates for whites, African Americans, Asians, and Hispanics were 60.2%, 42.4%, 54.1%, and 52.6%, respectively. Minorities also had lower rates of antidepressant medication management for newly diagnosed episodes of depression. The rates of optimal practitioner contacts for whites, African Americans, Asians, and Hispanics were 12.5%, 12.0%, 11.1%, and 10.6%; the rates of effective acute-phase treatment were 60.1%, 48.5%, 40.7%, and 57.6%; and the rates of effective continuation-phase treatment were 46.7%, 32.7%, 31.9%, and 39.6%, respectively. The statistically significant disparities persisted after adjusting for effects of age, sex, income, plan model, profit status, and region of the country.

Conclusions: The overall quality of mental health care for people enrolled in Medicare+Choice managed care plans is far from optimal. There are large and persistent racial differences that merit further attention to better understand their underlying causes and solutions.

Arch Gen Psychiatry. 2004;61:201-205

MENTAL ILLNESS IS A COMmon, debilitating problem for the elderly. It is estimated that about 20% of the adult population 55 years and older experience some mental disorder, including depression, anxiety, and age-related cognitive impairment.[1] Treating mental illness in the elderly is complicated because of stigma, financial barriers, underrecognition of disease, and challenges inherent in distinguishing mental illness from other disease processes. Effective treatment is complicated by comorbidities, age-related physiological changes, and risk of polypharmacy.

The recent Surgeon General's supplemental report *Mental Health: Culture, Race, and Ethnicity*[2] reported that " . . . racial and ethnic minorities bear a greater burden from unmet mental health needs and thus suffer a greater loss to their overall health and productivity."[2(p3)] This report further documented how little is known about quality of care received by racial and ethnic minorities with mental health needs. Subsequent research has documented disparities in treatment for patients with schizophrenia and for Medicaid patients with depression.[3-6] Treating minority elderly persons with mental illnesses poses the combined challenges associated with race and age.[7] However, to date, very little research has focused on this population.

In 1999, approximately 6.2 million elderly persons (or 16% of all beneficiaries) were enrolled in Medicare managed care plans, also known as Medicare+Choice (M+C) plans.[8] However, the quality of care received by mentally ill M+C beneficiaries is largely unstudied. The factors that affect differences in quality of care for minorities, in general, are poorly understood. Likewise, it is not fully understood whether minorities experience a different quality of mental health care than whites and, if they

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Table 1. Number of Plans Submitting Data Available for Analysis

	Plans Submitting Results	Plans Available for Analysis	Subjects Available for Analysis (%)
Inpatient facility utilization (No. of hospitalizations, inpatient days)	270	214	5 089 251 (82)
Any mental health facility utilization	275	228	5 621 601 (90)
Follow-up after hospitalization for mental illness (7 d, 30 d)	143	112	4578 (79)
Antidepressant medication management (3 measures)	141	118	18 990 (93)

do, why such differences exist. Several studies have reported significant problems with utilization and quality of mental health care for racial and ethnic minorities[9,10] in the general population. A recent Institute of Medicine report comprehensively catalogued studies documenting differences in treatment between whites and minorities.[7] However, by and large, the Institute of Medicine report addressed differences in treatment, in contrast to quality of care. Three recent studies on racial variation in quality of care provided in M+C plans reported large racial differences in the rate of follow-up after hospitalizations for mental illness between African Americans and whites, as well as differences in quality of care for the general M+C population, including differences in the likelihood of seeing a primary care provider or a specialist, and differences in experience with care.[7,11,12] Such studies naturally raise the question of whether the racial differences in M+C plans are greater or lesser than the racial disparities in fee-for-service Medicare, especially in view of the hypothesis that quality improvement programs in managed care organizations are likely to reduce disparities in care. While this study cannot address that question, it does explore the disparities in M+C plans in greater detail.

The Health Plan Employer Data and Information Set (HEDIS) offers a way to study health services provided to Medicare beneficiaries enrolled in managed care plans. These standardized performance measures are selected to assess the adequacy and effectiveness of care.[13] The M+C plans are required to submit annual HEDIS reports that include plan-level (often referred to as summary) and individual-level data. This analysis extends previous work[11,12] to more completely examine racial differences in the use of mental health services and more completely describe the effectiveness of mental health care provided to enrollees in M+C plans.

This analysis links individual-level HEDIS data with the beneficiary's demographic information, allowing the impact of age and race on receipt of specific mental health services to be examined.

METHODS

DATA

Individual-level HEDIS data for reporting year 2000 (based on 1999 experience) were merged with demographic data obtained from the Centers for Medicare and Medicaid Services. The 301 M+C plans that submitted individual-level HEDIS data included information on 7 498 496 persons. The average number of records per contract was 27 875 (range, 1189 to 484 738 persons per contract).

Individual records were identified via the Health Insurance Claim (HIC) number, a unique identification number used by Medicare. The HICs were merged with the 1999 Medicare Denominator file to obtain information on the age, race, sex, and state and county of residence. The HICs were also merged with the Group Health Plan master file to confirm that each submitted record showed corresponding plan enrollment during the contract year of question.

Individuals were excluded from this analysis if they did not have a valid HIC, if their race was classified as unknown or other, if there was no evidence of managed care enrollment in either the denominator or Group Health Plan master file, or if they were younger than 65 years in 1999. Entire contracts were excluded from this analysis if their submitted records failed to achieve at least 95% match on HIC.

STUDY MEASURES

The analysis focused on the HEDIS 2000 measures related to mental health services,[14] listed below.

- **Mental health inpatient discharges:** Number of inpatient discharges from a hospital or treatment facility with any mental health diagnoses except alcohol- and drug-related diagnoses or mental retardation.
- **Average length of stay for mental health inpatient stay:** Number of days in a hospital or treatment facility with any mental health diagnoses except alcohol- and drug-related diagnoses or mental retardation.
- **Percentage of members receiving mental health services:** Percentage of members receiving any inpatient, day/night (ie, partial hospitalization), or ambulatory mental health services during the measurement year.
- **Seven-day and 30-day follow-up after hospitalization for mental illness:** The percentage of members hospitalized for treatment of depression, schizophrenia, attention-deficit disorder, or personality disorders who were seen on an ambulatory basis or were in day/night treatment with a mental health provider within 7 days or 30 days of hospital discharge.
- **Antidepressant medication management optimal practitioner contacts:** The percentage of members who were diagnosed as having a new episode of depression, treated with antidepressant medication, and who had at least 3 follow-up contacts with a primary care practitioner or mental health practitioner.
- **Antidepressant medication management effective acute- or continuation-phase treatment:** The percentage of members who were diagnosed as having a new episode of depression, were treated with antidepressant medication, and continued taking an antidepressant drug during the entire 12-week acute-treatment phase or for at least 6 months of continuation-treatment phase.

The number of plans reporting mental health utilization varied from measure to measure (**Table 1**), in part because of rules that require reporting only for measures with a total eligible population of 30 or more. Measures such as utilization rates require the denominator to be the entire covered population and, as a result, all plans report the measure. In contrast, when the denominator is defined as users of services (eg, 7-day follow-up rate), measures are not reported by plans with fewer than 30 users of inpatient mental health care. This reporting rule generally affects small plans rather than large plans. The final column in Table 1 indicates that the percentage of

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Table 2. Rate of Mental Health Care Use

	White	African American	Asian	Hispanic	Overall
Denominator size	4 319 145	486 696	68 865	141 322	**5 016 028**
Rate per 1000 members*					
Any mental health care	24.6	16.6†	11.7†	24.1	23.6
Ambulatory	21.7	12.5†	8.2†	21.3	20.6
Day/night	1.0	1.9†	2.8†	1.1	1.1
Inpatient	3.6	3.4	1.1†	2.9†	3.5
Average inpatient days	7.9	8.4	8.1	6.4	7.9

*Rates are age and sex adjusted.
†$P<.05$ vs white.

submitted records that are included in the analysis ranges from 79% to 93%.

Race was obtained directly from the 1999 Medicare denominator file. The categories included in this analysis were white, African American, Asian, and Hispanic. Persons whose race was listed as Native American were not included in this analysis because of small numbers of M+C enrollees. Every plan had at least some minority representation, ranging from 1.6% to 68.0% overall. All but one plan had at least some African American members, with a median of 5.5% African American and a maximum of 68%. Similarly, 97.8% of plans had at least some Asian members, with a median of 0.5% and a maximum of 40%, and 97.8% of plans had at least some Hispanic members, with a median of 1.8% and a maximum of 29.6%.

We imputed indirectly on the basis of the median disposable household income by ZIP code for households with persons 65 years and older with the use of figures from the 1990 US Census Bureau, because data from the 2000 census were not yet available.[15,16]

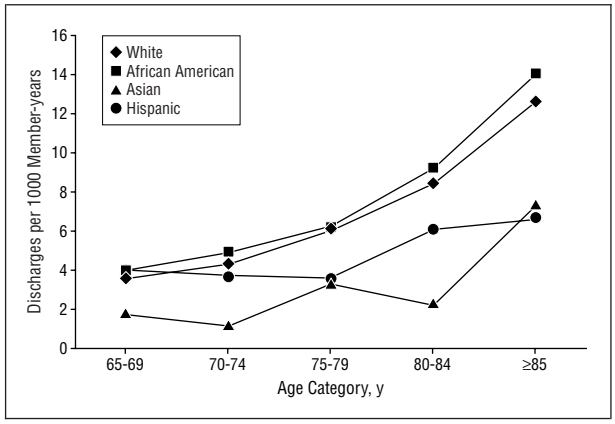
Medicare plan structure and profit status were obtained from Health Care Financing Administration's Monthly Report on Medicare Managed Care Plans for December 1999,[17] which reflects information that specific plans provided to the Health Care Financing Administration. Plan structure was defined as group, staff, and independent practice association. Profit status was defined as for-profit and not-for-profit. Region of the country was defined by means of a 4-level census designation: Northeast, South, Midwest, and West.

STATISTICAL ANALYSIS

All analyses were conducted with the SAS system (SAS Institute Inc, Cary, NC). All measures were age and sex adjusted by direct standardization methods.[18] Logistic regression models were used to estimate adjusted odds ratios and to test for the presence of interactions between race and other model elements. Bonferroni corrections were used to adjust for multiple comparisons.

RESULTS

In 1999, 2.4% of M+C enrollees received at least some mental health care. Overall, 0.35% of persons received inpatient care and 2.06% received their mental health care solely in ambulatory settings. The discharge rate from inpatient facilities was 5.8 per 1000 enrollees per year. The average length of stay was 7.9 days. Day/night care was the least frequently used form of mental health services, with approximately 0.11% of beneficiaries receiving care in that setting. The percentage of M+C enrollees receiving mental health care showed considerable racial variation and ranged from 11.7 per 1000 members for Asians to approximately 24 per 1000 for whites and Hispanics (**Table 2**). Because most persons receiving mental health care did so in an ambulatory setting, racial variation in ambulatory mental health care followed similar patterns. The percentage of members receiving inpatient and day/night care was substantially lower than rates of ambulatory care.



Inpatient mental health facility utilization.

Although inpatient utilization increased with age, African Americans and whites had similar inpatient mental health utilization across age groups (**Figure**). Asians, in contrast, used less inpatient mental health care than African Americans and whites for all age groups. Hispanics also had less inpatient mental health care, and it did not increase with age to the degree that it did for African Americans and whites.

FOLLOW-UP AFTER HOSPITALIZATION FOR MENTAL ILLNESS

The 7-day and 30-day follow-up rates for individuals after inpatient mental health admissions were 35.5% and 58.2%, respectively, and there was strong variation across racial groups in follow-up rates (**Table 3**). African Americans and, to a lesser degree, Hispanics and Asians had lower follow-up rates than did whites.

Multivariate regression analysis confirmed significant differences between African Americans and whites after adjusting for other factors such as plan profit status, health maintenance organization (HMO) model type,

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Table 3. Percentage Receiving Follow-up After Hospitalization for Mental Illness

	White	African American	Asian	Hispanic	Overall
Denominator size	3728	310	35	109	**4182**
Follow-up rate, %*					
7 d	38.2	24.6†	32.0	31.2	35.5
30 d	60.2	42.4†	54.1	52.6	58.2

*Estimates are age and sex adjusted.
†$P<.05$ vs whites.

Table 4. Antidepressant Medication Management (Percentage of Patients Taking Antidepressants Receiving Care)

	White	African American	Asian	Hispanic	Overall
Denominator size	16 433	648	132	548	**17 761**
Patients receiving care, %*					
Optimal practitioner contacts	12.5	12.0	11.1	10.6	11.7
Effective acute-phase treatment	60.1	48.5†	40.7†	57.6	58.6
Effective continuation-phase treatment	46.7	32.7†	31.9†	39.6†	43.1

*Estimates are age and sex adjusted.
†$P<.05$ vs whites.

and region of the country. The odds ratio associated with a 30-day follow-up visit for African Americans compared with whites was 0.5 (95% confidence interval, 0.4-0.6), controlling for age, sex, income, number of admissions, average length of stay, plan profit status, HMO model type, and region of the country. The coefficients for interaction terms were not statistically significant for race and age, plan profit status, HMO model, or region of the country. These associations were maintained when plans were stratified by percentage of minority enrollment.

For persons with only one inpatient stay (96.6%), aggregate inpatient days (which may be summed across multiple stays) equals length of stay for the single hospitalization. This allows for an examination of the relationship between length of stay and posthospitalization follow-up. Overall, length of stay was positively related to follow-up rate. The 30-day follow-up rate for persons with a 4-day length of stay was 47.6%, compared with 55.2% for a 7-day stay and 59.2% for a stay longer than 14 days ($P<.01$). The association between length of stay and 30-day follow-up did not vary by race. In addition, racial variation in 7-day and 30-day follow-up rates was not explained by differences in length of stay.

ANTIDEPRESSANT MEDICATION MANAGEMENT

For individuals diagnosed as having a new episode of depression, the rates of optimal practitioner contacts, effective acute-phase treatment, and effective continuation-phase treatment were low, at 11.7%, 58.6%, and 43.1%, respectively. Racial variation in the 2 effective acute- and continuation-phase treatments showed a pattern consistent with global rates of ambulatory mental health care; whites were more likely to receive effective acute-phase and continuation-phase treatment for antidepressant use. Despite these strong patterns associated with age, racial differences persisted after age and sex adjustment. The coefficients for interaction terms between race and other predictors were not statistically significant (**Table 4**).

Multivariate regression analyses confirmed these findings. For effective acute-phase and continuation-phase antidepressant medication management, the differences between African Americans and whites and between Asians and whites remained highly significant after controlling for age, sex, income, number of inpatient admissions, average length of inpatient stay, plan profit status, HMO model type, and region of the country. The odds ratios for effective acute- and continuation-phase treatment for African Americans compared with whites were 0.64 ($P<.01$) and 0.54 ($P<.01$), respectively; for Asians compared with whites, 0.41 ($P<.01$) and 0.45 ($P<.01$), respectively; and for Hispanics compared with whites, 0.87 ($P=.12$) and 0.72 ($P=.04$). The coefficients for interaction terms between race and age, plan profit status, HMO model, and region of the country were not statistically significant. These associations were maintained when plans were stratified by percentage of minority enrollment.

COMMENT

Consistent with 2 recent Surgeon General's reports,[1,2] these data show that the mental health care for the elderly is suboptimal and that the quality of care is worse for racial and ethnic minorities than it is for white elderly persons. Particularly telling are the different patterns for inpatient hospitalizations and their follow-up. Rates of inpatient hospitalization were comparable across racial groups, but rates of follow-up were significantly different across races. Once outpatient care had been accessed, the proportions with an optimal number of visits were similar. However, the use of antidepressants associated with those visits varied dramatically across racial groups. This suggests that the quality of ambulatory care is particularly problematic for racial and ethnic minorities. Like follow-up rates, antidepressant medication management varied considerably across racial groups. While whites had rates of effective management that were of concern, they were, nonetheless, significantly higher than the rates for African Americans, Hispanics, and Asians. The suboptimal mental health care experienced by elderly patients in M+C plans ought to be a source of concern because undertreated mental health care needs are associated with increased rates of long-term institutionalization, increased levels of health care use in all areas, and increased mortality rates.[7]

This study based its assessment on HEDIS measures. These measures are the result of a consensus process but may not represent complete agreement within the mental health community. The low overall rates of antidepressant management may be attributed to this sort of professional disagreement. Less clear, however, is whether low follow-up rates after inpatient stays or dif-

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ferences in antidepressant use across racial groups can be dismissed as professional disagreement.

There are some limitations to this analysis. First, our study was limited to Medicare enrollees in M+C plans. We have no information on the quality of care received by beneficiaries in fee-for-service Medicare. The M+C enrollees are healthier than fee-for-service enrollees,[19] are more likely to live in urban areas,[20] and may differ in other, unmeasured ways. Second, there is no information available about reasons for failure to receive adequate follow-up care. It is likely that several factors related to access to and quality of care play a role, including receipt of a recommendation for follow-up and adherence to physician-recommended follow-up visits.[7] Likewise, it is possible that generalists are providing this mental health care and that follow-up ambulatory care visits are listed with some other diagnosis or are somehow part of a bundling arrangement and are not recorded by the plan's administrative data. Similarly, out-of-plan use will not be reflected in HEDIS measures. Third, HEDIS data report on rates of services received, not necessarily services needed. The lack of variation in inpatient hospitalization rates may not mean that there was no variation in the underlying level of need for inpatient care. Similarly, the variation in rates of ambulatory care does not imply that appropriate care was received. Measures of antidepressant management were limited to people taking prescription antidepressants and, while there may be legitimate professional disagreement about appropriate use of antidepressants in the elderly, there is less disagreement about management for persons taking antidepressant medications. These quality measures do not examine whether all persons who might benefit from antidepressant therapy are receiving it; they examine the patterns of care for persons taking prescription antidepressant medications. There is always concern about the coding of race by Medicare sources. However, studies of the accuracy of Medicare's race code suggest that the primary error is mistakenly identifying some persons as white who should be classified in another racial group.[21] The effect of this misclassification, if any, is likely to be bias toward finding fewer racial differences. However, the true impact of this potential misclassification on this study is not known.

CONCLUSIONS

This study documents strong racial differences in HEDIS indicators of quality of mental health care for persons receiving antidepressant medication therapy and inpatient hospital care. The results of the analysis are disturbing in terms of both the racial disparities and the overall low quality of mental health care. Recent Surgeon General's reports highlight the need to take the quality of mental health care of the elderly seriously and emphasize the importance of measuring and addressing racial disparities in care. This study provides evidence of how much improvement is still needed.

Submitted for publication July 2, 2002; final revision received July 21, 2003; accepted July 22, 2003.

This study was supported by a contract from the Centers for Medicare and Medicaid Services, Baltimore, Md.

This study was presented in part as a poster at the annual meeting of the Academy for Health Services Research; June 23-25, 2002; Washington, DC.

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