
Provider Specialty Choice Among Medicare Beneficiaries Treated for Psychiatric Disorders

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This study estimates the probability of mental health specialist use among elderly and disabled Medicare beneficiaries treated for a primary psychiatric diagnosis, based on the 1991 Medicare Current Beneficiary Survey (MCBS) and physician claims. Beneficiaries with psychotic and affective disorders or multiple psychiatric diagnoses had a higher probability of specialty use, as did beneficiaries in counties with greater psychiatrist density. Elderly in counties with greater general practitioner density and disabled in counties with greater psychologist density were less likely to see a specialist, suggesting possible provider substitution. Government programs to recruit and retain mental health professionals in underserved areas may change provider specialty choices among Medicare beneficiaries treated for psychiatric disorders.

INTRODUCTION

Because of the high level of mental health needs among elderly and disabled Medicare beneficiaries and the primary role of the Medicare program in paying the costs of psychiatric care for these populations, policymakers have an important interest in understanding beneficiaries' access to mental health services. Among many important components of access,

one is the availability and use of clinicians with specialty training in mental health, such as psychiatrists, psychologists, and psychiatric social workers. Use of mental health specialists is of interest to policy-makers because mental health care provided by specialists has been shown to be more costly (Wells et al., 1987), yet, some argue, of higher quality than mental health care provided in the primary care sector (Mechanic, 1990).

In an optimal health care system, patients with the greatest clinical need for specialty care would receive it, while patients whose clinical needs could be met by less costly non-specialists would use non-specialty care instead. In contrast, under the current health care system, mental health specialist use is influenced by numerous factors, both on the demand side and on the supply side. This study examines the probability of mental health specialist use (versus mental health care provided by non-specialists only) among elderly and disabled Medicare patients treated for psychiatric disorders, focusing on the roles played by both clinical and non-clinical factors, including beneficiary sociodemographics and area concentrations of specialists and non-specialists.

Although a sizable literature exists on mental health specialist use, its conclusions may not generalize to the Medicare population. Samples used in previous studies typically were not nationally representative and included Medicare beneficiaries only insofar as they were part of the general population, in some cases excluding them altogether. The failure to examine elderly

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and disabled Medicare beneficiaries as separate subpopulations of interest is a major limitation, since certain characteristics of Medicare beneficiaries may make the processes governing provider specialty choices quite different for them than for the general population. For example, education, physical health, and provider accessibility may be particularly important in determining mental health specialty use by the elderly, who may have poorer understanding of psychiatric disorders or be faced with greater transportation difficulties than younger persons. On the other hand, Medicare beneficiaries have fairly uniform and generous mental health benefits when compared with the population as a whole, and the majority of beneficiaries are still insured within the fee-for-service sector (Faulkner and Gray, 1996a). These factors may increase rates of mental health specialty use among Medicare beneficiaries relative to less well-insured populations.

The current study attempts to address the limitations of the existing literature by focusing specifically on nationally representative samples of elderly and disabled Medicare beneficiaries. Analyses are based on data from the 1991 MCBS, linked to Medicare physician/supplier claims. The study questions are as follows: Among elderly and disabled Medicare beneficiaries receiving services for a psychiatric condition, what proportion receive at least some care in the mental health specialty sector? What are the observed clinical, sociodemographic, and supply factors associated with specialty use? Is use of specialty care associated with indicators of greater clinical need? To what extent do non-clinical factors, such as patient sociodemographics and area concentrations of specialists and non-specialists, influence patterns of specialty care use?

BACKGROUND AND LITERATURE REVIEW

Medicare Population

Medicare is the primary insurer of 95 percent of persons 65 years of age or over, as well as one of the main insurers of the non-elderly who become chronically impaired relatively late in life, after having acquired a work history that qualifies them for the program. (Disabled children or adults without sufficient work history tend to be covered through Medicaid instead.) Both the elderly and disabled Medicare populations have characteristics that make them a high priority for research on the delivery of mental health services and access to care (Wilkinson and Williams, 1985).

The elderly are of interest because, despite high prevalence of certain disorders, they have been shown to be disproportionately underdiagnosed, undertreated and understudied (German, Shapiro, and Skinner, 1985; Leaf et al., 1985; German et al., 1987; NIH Consensus Panel, 1992; Faulkner and Gray, 1996b). They face special challenges in obtaining needed mental health care, including impairments in mobility, inadequate transportation, geographic inaccessibility, poor financial resources, patient attitudes (including greater perception of stigma), lack of clinician expertise, and reluctance to treat the elderly (Butler and Lewis, 1982; NIH Consensus Panel, 1992).

Medicare disabled are important for mental health policy because a high proportion are likely to be eligible on the basis of psychiatric conditions. The Medicare disabled population consists primarily of former workers who have received Social Security Disability Insurance (SSDI) for 2 or more years. In turn, these SSDI recipients are persons

who paid into the Social Security system for a sufficient period of time, became unable to work because of a physical or mental impairment expected to last at least a year (or result in death), and went through a 5-month waiting period. In 1994, 24.8 percent of new SSDI enrollees qualified on the basis of a mental disorder other than mental retardation (Social Security Administration, 1995), so the proportion of Medicare disabled beneficiaries who qualify on the basis of mental impairment is likely to be similar.

Medicare Coverage of Ambulatory Mental Health Services

Medicare is usually the primary insurer for its beneficiaries, although the vast majority of Medicare beneficiaries have supplemental insurance coverage, either through Medicaid or private medigap policies. In contrast to the 20-percent copayment required for medical visits, Medicare imposes a 50-percent copayment on most outpatient psychiatric services, and medigap policies generally do not eliminate the 30-percent point differential. The services subject to the higher copayment rate include psychotherapy, but exclude physician visits for the management of psychotropic medications. Prescription drugs themselves, however, are excluded entirely from coverage under the Medicare program, although Medicaid and many medigap policies cover pharmaceuticals.

Rates of Mental Health Specialist Use

Low rates of specialty use have long been documented in the mental health services literature (Regier, Goldberg, and Taube, 1978; Schurman, Kramer, and Mitchell, 1985; Regier et al., 1993). Diagnostic interview schedule data from the Epidemiologic Catchment Area study and National

Comorbidity Survey show that only one-fourth of persons diagnosed with a psychiatric disorder in a given year receive treatment, and of these, only about one half are treated in the specialty sector (Howard et al., 1996). Elderly persons with a psychiatric disorder are only one-third to one-half as likely as other age groups to see a mental health specialist (Schurman, Kramer, and Mitchell, 1985; Goldstrom et al., 1987; Wells et al., 1987; Leaf et al., 1988; Mechanic, Angel, and Davies, 1992; Cooper-Patrick, Crum, and Ford, 1994; Howard et al., 1996; Wells, Burnam, and Camp, 1995). Less is known about the rates of specialist use among disabled Medicare beneficiaries receiving mental health services. In one analysis, beneficiaries qualifying for Medicare on the basis of psychiatric impairment were shown to have similar levels of overall physician use as beneficiaries eligible on the basis of medical conditions (Rubin, Wilcox-Gök, and Deb, 1992). However, this study did not examine the conditions for which the care was received or the specialty of the provider.

Correlates of Mental Health Specialist Use

In determining the correlates of mental health specialty use, earlier studies have sought to distinguish between two models of utilization: a "clinical" model in which clinical characteristics alone determine who gets specialty services, and an "economic" model postulating that, in addition to the patient's need for such services, provider supply and additional factors related to demand, such as financial resources and demographic characteristics, will affect patterns of care. With a few notable exceptions (Wells et al., 1987; Frank and Kamlet, 1989), evidence from earlier literature generally supported a clinical model in which the mentally ill

patients seen in the general medical sector are the least impaired (Schurman, Kramer, and Mitchell, 1985; Knesper, Pagnucco, and Wheeler, 1985; Leaf et al., 1988; Cooper-Patrick, Crum, and Ford, 1994; Wells, Burnam, and Camp, 1995). Greater physical disability reduced the use of mental health specialty services or had an insignificant effect (Schurman, Kramer, and Mitchell, 1985; Leaf et al., 1988; Sturm, Meredith, and Wells, 1996; Frank and Kamlet, 1989).

Yet, at the same time, evidence was found to support the economic model as well. The use of specialty services was higher among respondents who were wealthier, better educated and white (Schurman, Kramer, and Mitchell, 1985; Mechanic, Angel, and Davies, 1992; Cooper-Patrick, Crum, and Ford, 1994; Wells, Burnam, and Camp, 1995; Sturm, Meredith, and Wells, 1996). Health maintenance organization enrollees were shown to have significantly lower rates of specialty use in the Medical Outcomes Study (Sturm, Meredith, and Wells, 1996) but not the RAND Health Insurance Experiment (Wells, Manning, and Benjamin, 1986; Wells et al., 1987).

Historically, there has been a severe geographic maldistribution of mental health resources (Knesper, Wheeler, and Pagnucco, 1984), and our own analysis of 1990 data from the Area Resource File (ARF) shows a coefficient of variation (equal to the standard deviation divided by the mean) in the density of psychiatrists per capita across counties in the United States equal to 2.38. The coefficient of variation is a measure of dispersion (Folland, Goodman, and Stano, 1993) that has been used to examine geographic variation in clinical practice patterns (Paul-Shaheen, Clark, and Williams, 1987). The 2.38 value for the variation in psychiatrists per capita is quite high; in comparison, the coefficient of variation in

the density of general practitioners per capita was 0.62, implying much less variability across counties.

Provider supply has been shown to be an important determinant of utilization in general populations. In an extensive review of empirical findings, Shannon, Bashshur, and Lovett (1986) concluded that distance from the provider was negatively correlated with the use of mental health services, at least within certain ranges. Several recent studies also found evidence that the number of psychiatrists per county was associated with increased use of mental health services in the specialty sector and reduced use in the general medical sector (Horgan, 1985; Horgan and Salkever, 1987), although provider supply effects were insignificant in Frank and Kamlet (1989). In related work, Lambert and Agger (1995) found that, while rural Aid to Families with Dependent Children Medicaid beneficiaries were more likely than urban beneficiaries to obtain their mental health services from primary care providers rather than a specialist, much of the difference was accounted for by the area concentration of specialists. In recognition of the importance of geographic access, Federal Government programs such as the National Health Service Corps (NHSC) have made the recruitment and retention of mental health professionals in underserved areas the focus of special policy initiatives.

Implications of Mental Health Specialty Use

The extent to which general medical providers can act as technical substitutes for mental health specialists has been the subject of some debate. Mechanic (1990) argues that describing the general medical sector as the "de facto mental health care system" (Regier, Goldberg, and Taube, 1978) may represent a potentially harmful illusion. Mechanic's assertion is based on

his interpretation of earlier utilization studies as showing that psychiatric treatment in the general medical sector is shallow and poorly matched to patient needs.

DATA AND METHODS

Overview

We define a sample of beneficiaries who are receiving Medicare-covered services associated with a primary psychiatric diagnosis. Among these enrollees, we first determine the proportion receiving any services from a mental health specialty provider. We then use regression analysis to examine the roles of clinical characteristics, beneficiary sociodemographics, and health system factors in determining specialty use.

Data

The study is based on survey data from the 1991 MCBS, a national survey of Medicare beneficiaries sponsored by HCFA linked to all Part B physician claims incurred by the beneficiaries during 1991. Geographical identifiers were then used to link the beneficiary-level data to ARF data on the number of general practitioners and psychiatrists in patient care who were practicing in the beneficiary's county of residence in 1990. The ARF was also used to obtain data on the number of persons residing in each county and State in 1990. In a small number of cases, the county code was missing, so the respondent was assigned State instead of county averages. Data on the number of licensed psychologists in each State in 1993 were obtained from the American Psychological Association (APA).

Exclusion criteria included participation in group health plans, institutional residence, eligibility for Medicare on the basis of end stage renal disease, less than 12 months participation in Medicare Part A or B, and Puerto Rican residence. These exclusions reduced the sample size from 12,677 to 10,007. The inclusion criterion was the receipt of at least one Part B physician/supplier service for a primary psychiatric diagnosis during 1991; this definition excludes services provided by hospital staff that were not billed separately under Part B. This criterion yielded a sample size of 773 beneficiaries. Psychiatric diagnoses were defined as *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) codes in the range 290 to 316, which includes dementia and substance abuse but excludes mental retardation.

Because the processes underlying provider specialty choices are likely to differ significantly among Medicare subpopulations, the regression models were estimated separately for beneficiaries currently eligible for Medicare on the basis of age ($n=427$) versus disability ($n=346$). Stratification was empirically supported by the rejection of the null hypothesis of pooling the samples in the regression analyses but allowing for a separate intercept ($p < 0.01$). Because the basis of Medicare eligibility changes to age for disabled beneficiaries who turn 65 years of age, the elderly subsample is likely to include some beneficiaries whose original reason for entitlement was disability. The subsample of disabled Medicare beneficiaries who received a psychiatric diagnosis during 1991 is likely to overlap with, but is not necessarily the same as, the subsample of beneficiaries who qualify for Medicare on the basis of a psychiatric disorder.

Construction of the Outcome Measure

Based on all Part B physician/supplier services associated with a primary psychiatric diagnosis that were received by the beneficiary during 1991, we constructed an indicator variable equal to 1 if the beneficiary saw a mental health specialist during any of these visits and 0 otherwise (i.e., if all of the services were provided by a non-specialist). Because the question of interest is whether the beneficiary is ultimately seen by a specialist, we do not distinguish between beneficiaries who always saw a specialist for their psychiatric disorder and those who only sometimes saw one. Mental health specialists are defined here as psychiatrists and psychologists billing independently. The use of 1991 MCBS data makes it difficult to distinguish between psychiatrists and other mental health specialists who bill through psychiatrists, because only recently were psychologists and certain other non-physician mental health specialists allowed to bill independently. The use of codes for these types of providers was still relatively uncommon in 1991, so apart from psychiatrists, almost all providers who billed for services to beneficiaries diagnosed with a psychiatric condition were other physicians. Finally, for a small number of claims submitted by group practices, we were unable to distinguish the type of provider. We assumed these providers to be generalists and then controlled separately for whether the beneficiary had any claims with unknown provider specialty.

Choice of Explanatory Variables

The choice of treatment in the specialty versus general medical sector among beneficiaries treated for psychiatric diagnoses was hypothesized to depend on

clinical characteristics, provider density, information regarding psychiatric illness and treatment, perceived stigma (or other psychological factors affecting the propensity to use specialty care), and income. Because the sample includes only beneficiaries who received services, the relevant factors are those that differentially affect generalist and specialist care. For example, income may matter if specialty care is expensive relative to care provided by a generalist, and medical care is a normal good, that is, demand for medical care increases with income.¹ Clinical characteristics include medical as well as psychiatric conditions. Poor physical health may be associated with lower use of psychiatric specialty services if beneficiaries who need to visit general practitioners on a regular basis for medical reasons find it easier to obtain psychiatric services from the same provider than to pay separate visits to a specialty provider. Although characteristics of the referring physician (in cases in which the patient was referred) are also likely to play a role, they could not be examined in this study.

To control for mental health, we first aggregated all ICD-9-CM primary physician diagnoses in the range 290-316 into major disorders. Beneficiaries with multiple primary psychiatric diagnoses were assigned the disorder recorded most often as the reason for the service provided, using a hierarchical ranking system to break ties. These disorders were further aggregated into the following psychiatric condition categories: psychotic, organic, affective, anxiety, substance abuse, and all other disorders. A comorbidity indicator was then created to indicate whether the beneficiary received services for any

¹ Supplemental insurance may also influence provider specialty choices. Empirically, however, medigap and Medicaid coverage were not significant predictors and did not change any of the other estimates. For brevity, the results shown here exclude these regressors from the model.

psychiatric or substance abuse disorder other than the beneficiary's main psychiatric condition. The comorbidity indicator was based on both primary and secondary diagnoses. Beneficiaries with psychotic disorders were used as the omitted comparison category for the multiple regression analyses.

To control for physical health, we included information on self-assessed health status (excellent, very good, good, fair, poor), functional limitations (activities of daily living [ADLs] and instrumental activities of daily living [IADLs]), and medical comorbidities. The medical comorbidity indicators are based on whether the beneficiary reported ever having been told by a physician that he or she had a medical condition affecting each of five body systems: cardiovascular, neurological, endocrine, musculoskeletal, and respiratory. A separate indicator was used for whether the beneficiary had been previously diagnosed with cancer. Use of medical comorbidity scales that weighted for the relative severity of the conditions in each category yielded similar results.

Provider density is proxied by three measures constructed from the area-level data: (1) the number of general practitioners per 1,000 county residents in 1990, (2) the number of psychiatrists in patient care per 1,000 county residents in 1990, and (3) the APA census of licensed psychologists in the State in 1993, divided by the population of the State in 1990. The third measure serves as an approximation for the total number of licensed psychologists per 1,000 State residents in 1990. The measurement error in this approximation² is likely to bias the coefficient of this variable towards zero, i.e., the estimated effect of psychologist density will be smaller than the true effect.

These density measures are expected to influence provider specialty choice in two ways. First, the total costs of care include

the time and monetary costs of transportation, which may differ by the type of provider. For example, beneficiaries living in areas with a large supply of general medical practitioners but few mental health specialists will face higher transportation costs if they are treated in the specialty sector. Under the assumption that different provider types are seen by patients to be at least partially substitutable, such beneficiaries are expected to have a relatively low probability of specialist use. Second, the waiting time for appointments is likely to be longer in areas in which there are few providers relative to the number of patients; some persons seeking services may even give up entirely on trying to get an appointment if the wait is too long.

The MCBS does not have any direct measures of the extent of the beneficiary's information regarding psychiatric illness and treatment, the beneficiary's perception of stigma associated with the use of mental health specialists, or other psychological factors that may affect the beneficiary's propensity to use specialty care. However, certain sociodemographic characteristics, such as education (high school and college versus less than high school), age, sex, marital status (married versus divorced, separated, widowed, or never-married) and race/ethnicity (non-white or Hispanic versus white non-Hispanic), may be correlated with these factors. For example, the elderly and their families are more likely than the young to stigmatize psychiatric treatment (German, Shapiro, and Skinner, 1985; Lasoski, 1986) and among those diagnosed with disorders, males are less likely than females to seek care (Robins and

²First, county-level data were not available and State-level data may not adequately capture local provider supply, particularly in large States. Second, only members of the APA were included in their census of licensed psychologists, so the APA census is an underestimate of the total number of licensed psychologists. Third, numerator data (the APA census of licensed psychologists) were available only for 1993, while the denominator data (numbers of State residents) were from 1990.

Regier, 1991). Sociodemographic factors may affect the use of mental health specialists for other reasons as well, such as correlation with unmeasured wealth or (in the case of marital status) unmeasured severity.

We also controlled for the calendar week during which the beneficiary first received a service associated with a psychiatric diagnosis, because beneficiaries diagnosed later in the year have less time to see a specialist during the remaining measurement period. Finally, the model controls for whether the beneficiary received any psychiatric services for which the type of provider could not be distinguished, as happens, for example, with claims submitted by certain group practices. For brevity, these two variables were not included in the tables or discussion, but their effects were significant and in the expected direction.

Estimation

The population characteristics are first described. Proportions are given for the categorical regressors and means and standard deviations for the continuous regressors. The proportions of the elderly and disabled samples using mental health specialty services in 1991 are then calculated, stratifying by main psychiatric condition. The probability that the respondent used a mental health specialty provider during 1991 was then estimated using multiple logistic regression. The tables report the relative risks and *p*-values associated with each regressor. The *p*-values are from asymptotic *t*-tests of the null hypothesis that the coefficient on each regressor is zero. The relative risk of the outcome associated with each dichotomous explanatory variable is defined as the probability of using specialty services when the factor is present, divided by the probability when the factor is not present. The relative risk

associated with each continuous explanatory variable is defined as the probability of using specialty services when the regressor is set equal to the sample mean plus one standard deviation, divided by the probability when the regressor is set equal to the mean. MCBS sample weights were used for all of the above calculations, and test statistics were adjusted for sample design effects using SUDAAN.

Limitations of Claims Data

Claims data are subject to certain inherent limitations when used for research purposes. The ability to describe a beneficiary's clinical status based on claims data is restricted, due to a number of factors discussed by Iezzoni (1990). For example, clinicians may limit the number of diagnoses they code, or may change the order of the diagnoses in response to payment incentives. In our data, less than 6 percent of the physician claims coded the maximum number of diagnoses, and estimates were very similar when using all line-item diagnoses instead of primary diagnoses to define the sample.

Nonetheless, many clinical characteristics may not be observable through the use of claims. Imperfect measurement of health poses two concerns. The first issue is the definition of the study population. Sensitivity is likely to be a greater problem than specificity, because false positive labeling of beneficiaries who have no evidence of psychiatric distress is rare (Robbins et al., 1994). Although specificity will be lower when trying to identify a particular type of psychiatric disorder, studies of schizophrenia have also shown that specificity is higher than sensitivity (Lurie et al., 1992; McLaughlin, Soumerai, and Ross-Degnan, 1993).

Because under-recognition of psychiatric disorders is common among both

generalists and specialty providers (Anderson and Harthorn, 1989), our sample of beneficiaries with psychiatric diagnoses is likely to exclude some persons with disorders. The study sample may be sicker than the population excluded from the sample (Kessler, Amick, and Thompson, 1985), although differences in severity between persons with detected and undetected depression have been shown to be small (Wells, Burnam, and Camp, 1995). If generalists are less likely to recognize or less willing to code psychiatric disorders out of concerns about stigmatizing patients, then our sample may disproportionately exclude beneficiaries visiting primary care physicians. For this reason, our estimate of the proportion of the Medicare psychiatric population that receives treatment from a specialty provider is likely to be high.

The second concern with imperfect health measures is that the estimated effects of any regressors in the model that are correlated with unmeasured severity may be biased. The MCBS does allow us to supplement the claims information with survey data on the beneficiary's functional status, self-assessed health, and self-reported medical conditions. Although not equivalent to the "gold standard" of medical chart reviews, the comprehensive health data collected in the survey, together with the diagnostic information from the physician claims, provide reasonable proxies. Nonetheless, the regressor results should be interpreted in light of possible omitted variable bias.

The final concern with claims data is that the only services measured are those paid partially or entirely by the insurer. Services paid for entirely out-of-pocket by the beneficiary will be missed in studies based on claims. This problem may be major for databases maintained by private insurers, which tend to place caps on the total amount

of mental health reimbursement, but should be less of a concern with Medicare claims (Loranger and Rogal, 1995).

RESULTS

Characteristics of the Study Populations

Tables 1 and 2 present data describing the characteristics of the aged and disabled beneficiaries who were treated for a psychiatric disorder during 1991. The main psychiatric conditions appearing most frequently among the elderly were anxiety disorder (38 percent), affective disorder (21 percent), and organic disorder (14 percent). Twenty-three percent had a psychiatric comorbidity. Medical comorbidities were also common among the elderly, particularly cardiovascular conditions (67 percent) and musculoskeletal conditions (60 percent).

Table 1
Characteristics of the Study Populations—
Weighted Proportions

Characteristic	Aged (n=427)	Disabled (n=346)
	Percent	
Female**	66	43
Non-White or Hispanic**	12	28
Married**	47	27
Main Psychiatric Condition:		
Psychotic Disorders**	14	36
Organic Disorders**	14	3
Substance Abuse*	2	6
Affective Disorders	21	25
Anxiety Disorders**	38	22
All Other Disorders	11	8
Any Psychiatric Comorbidity	23	30
Self-Reported Lifetime Medical Conditions:		
Cardiovascular Condition**	67	50
Neurological Condition	18	18
Musculoskeletal Condition**	60	41
Respiratory Condition**	13	20
Endocrine Condition	14	16
Cancer**	29	13

* Difference between elderly and disabled is significant at $p < .05$.

** Difference between elderly and disabled is significant at $p < .01$.

NOTES: Omitted categories in regressions are male, white non-Hispanic, never married/separated/divorced/widowed, psychotic disorders, no psychiatric comorbidity, and no self-reported medical conditions.

SOURCE: Health Care Financing Administration, Office of the Actuary: Medicare Current Beneficiary Survey, 1991.

Table 2
Characteristics of the Study Populations—
Weighted Means and Standard Deviations

Characteristic	Aged (n=427)	Disabled (n=346)
Annual Household Income (in Thousands of Dollars)*	16.59 (13.29)	9.77 (7.95)
Years of Schooling	10.15 (4.18)	10.57 (3.51)
Age*	74.60 (6.84)	45.40 (11.70)
Self-Assessed Health Status (5 is Best)*	2.80 (1.17)	2.24 (1.17)
Activities of Daily Living	1.34 (1.75)	1.23 (1.70)
Instrumental Activities of Daily Living*	1.30 (1.67)	1.65 (1.63)
General Practitioners per 1,000 County Residents	26.11 (10.79)	27.34 (11.64)
Psychiatrists in Patient Care per 1,000 County Residents	13.77 (16.99)	12.35 (15.47)
Licensed Psychologists per 1,000 State Residents	18.14 (8.08)	17.25 (8.44)

* Difference between elderly and disabled is significant at $p < .01$.

SOURCE: Health Care Financing Administration, Office of the Actuary: Medicare Current Beneficiary Survey, 1991.

Among the disabled, the most frequently occurring main psychiatric conditions were psychotic disorder (36 percent), affective disorder (25 percent), and anxiety disorder (22 percent). Thirty percent of the disabled sample had a psychiatric comorbidity in addition to the main condition. Medical comorbidities were also common among the disabled.

Rates of Specialty Use

Table 3 gives the weighted proportions of elderly and disabled beneficiaries with each type of psychiatric disorder who saw a mental health specialist during the year. Among beneficiaries who received a physician service for any psychiatric condition, 29 percent of the elderly and 70 percent of the disabled saw a specialist at least once. The rate of specialist use among disabled Medicare beneficiaries treated for psychiatric disorders is higher than the rates for other populations in previous studies. Methodologic differences among studies make direct comparisons difficult to interpret. However, if actual specialty use among

Table 3
Weighted Proportions of Aged and Disabled
Samples That Saw a Mental Health
Specialist During 1991

Main Psychiatric Condition	Aged (n=427)	Disabled (n=346)
	Percent	
Any Disorder**	29	70
Psychotic Disorders**	26	84
Organic Disorders	28	55
Substance Abuse Disorders	25	26
Affective Disorders**	55	83
Anxiety Disorders**	17	53
All Other Disorders*	33	59

* Difference between elderly and disabled is significant at $p < .05$.

** Difference between elderly and disabled is significant at $p < .01$.

SOURCE: Health Care Financing Administration, Office of the Actuary: Medicare Current Beneficiary Survey, 1991.

this population were higher, it may be the result of greater illness severity in this population, more generous mental health benefits, or other unmeasured factors.

The difference in proportions between the two groups was statistically significant ($p < 0.01$). Although part of this difference may be due to greater prevalence of the more severe illnesses among the disabled, a comparison of specialty use by aged and disabled beneficiaries shows that the disabled are consistently (and for the more common disorders, significantly) more likely to use specialty services within every diagnostic category. This result may reflect a variety of factors, for example, differential severity for a given condition or greater stigmatization of mental illness by the elderly (German, Shapiro, and Skinner, 1985; Lasoski, 1986).

Furthermore, some of the disabled in our sample are likely to qualify for Medicare on the basis of psychiatric disorders. In this case, they would be chronically ill by definition, and probably experienced earlier episodes of care prior to the observation period, thereby increasing their awareness of mental health specialty services. Although some of the elderly will be chronically ill as well, particularly those whose original basis of Medicare eligibility was psychiatric impairment, the chronically ill

may constitute a lower proportion of the elderly population treated for psychiatric disorders. The disabled may also visit mental health specialists for their initial or periodic re-evaluation of Medicare eligibility, although eligibility determination is not typically required on an annual basis and need not be performed by a specialist, but by the beneficiary's usual provider of care.

Determinants of Specialty Use

Table 4 shows the relative risks and *p*-values from a multiple logistic regression of whether or not the beneficiary saw a mental health specialist at any time during 1991, controlling for how late in the year the beneficiary was diagnosed. Relative to elderly beneficiaries with psychotic disorders, elderly diagnosed with affective disorders were more than twice as likely to see a mental health specialist and the effect was highly significant. Relative to disabled beneficiaries with psychotic disorders, disabled beneficiaries who were diagnosed with all other psychiatric conditions except affective disorders were about one- to two-thirds less likely to see a specialist. These effects were also highly significant.

The results for the elderly and disabled are consistent with one another, as well as with the sample proportions given in Table 2, and may suggest clinically appropriate specialty use patterns. The two categories with the highest specialty use for both samples—psychotic and affective disorders—are among the most severe yet treatable categories of psychiatric conditions. Furthermore, among both samples, beneficiaries with multiple psychiatric diagnoses, which suggests more complex illness, had a higher probability of seeing a mental health specialist. This finding again suggests selection into the specialty sector of patients with the greatest clinical need.

None of the self-reported medical comorbidities had a significant effect on provider choice, perhaps because they reflect self-reports of lifetime, rather than current, illness. In contrast, greater functional impairment, as measured by ADLs, actually increased the probability of specialty use among both samples. It may be, however, that functional impairment captures mental as well as physical health. If mental illness reduces the patient's ability to take care of their own personal needs, then functional limitations might serve partially as a proxy for severity of psychiatric illness. An alternative explanation is that beneficiaries with functional impairments have more frequent contacts with the medical system and thus greater opportunity to be referred to a specialist for treatment of comorbid psychiatric illness or admitted to tertiary hospitals, which rely predominantly on specialty providers.

Education was a highly significant predictor among the disabled, with better educated beneficiaries somewhat more likely to obtain specialty services. This result is unlikely to be an artifact of imperfect measures of mental illness severity, because, on average, greater severity would be expected to be associated with lower educational attainment. Instead, greater use of specialty care among the higher educated may reflect a greater understanding of mental illness and compliance with treatment on the part of the beneficiaries, leading them to seek out or retain specialty care. It is unlikely that education serves as a proxy for socioeconomic status and thus the financial resources with which to obtain specialty care, because household income per se did not have a significant effect. The education effect was not significant among the elderly, and other demographic characteristics had no statistically significant effect among either group.

Table 4
Relative Risks and p-Values From Logit Models of the Probability of Having
Seen a Mental Health Specialist During 1991, by Basis of Medicare Eligibility

Explanatory Variable	Aged (n=427)	Disabled (n=346)
Female	1.08 (p=0.69)	1.03 (p=0.75)
Non-White or Hispanic	0.71 (p=0.17)	0.96 (p=0.51)
Married	1.21 (p=0.22)	0.87 (p=0.14)
Organic Disorders	1.06 (p=0.81)	0.51 (p=0.00)
Substance Abuse Disorders	1.11 (p=0.87)	0.39 (p=0.01)
Affective Disorders	2.04 (p=0.00)	0.97 (p=0.72)
Anxiety Disorders	0.69 (p=0.13)	0.64 (p=0.00)
All Other Psychiatric Disorders	1.23 (p=0.42)	0.62 (p=0.00)
Psychiatric/Substance Abuse Comorbidity	1.48 (p=0.02)	1.32 (p=0.00)
Cardiovascular Condition	0.97 (p=0.83)	1.07 (p=0.30)
Neurological Condition	0.72 (p=0.11)	0.99 (p=0.93)
Musculoskeletal Condition	0.99 (p=0.26)	1.00 (p=0.10)
Respiratory Condition	1.22 (p=0.32)	0.98 (p=0.79)
Endocrine Condition	0.88 (p=0.57)	0.90 (p=0.27)
Cancer	0.80 (p=0.15)	0.94 (p=0.51)
Annual Household Income	1.00 (p=1.00)	0.95 (p=0.36)
Years of Schooling	0.97 (p=0.81)	1.13 (p=0.00)
Age	0.76 (p=0.19)	0.96 (p=0.65)
Self-Assessed Health Status	1.11 (p=0.33)	0.98 (p=0.75)
Activities of Daily Living	1.21 (p=0.02)	1.11 (p=0.02)
Instrumental Activities of Daily Living	0.98 (p=0.85)	1.02 (p=0.59)
General Practitioners per 1,000 County Residents	0.71 (p=0.00)	0.97 (p=0.56)
Psychiatrists in Patient Care per 1,000 County Residents	1.34 (p=0.00)	1.12 (p=0.00)
Licensed Psychologists per 1,000 State Residents	0.88 (p=0.28)	0.86 (p=0.01)

NOTES: Regressions are weighted and standard errors corrected for sample design clustering. Regressions also control for a constant term, the first week the patient received a service associated with a psychiatric diagnosis, and indicators for missing income, missing area supply measures, and the existence of claims on which provider specialty could not be identified. Patients with psychotic disorders are the omitted category for main psychiatric condition.

SOURCE: Health Care Financing Administration, Office of the Actuary. Medicare Current Beneficiary Survey, 1991.

Provider density was an important determinant of specialty choice for both the elderly and disabled in the MCBS. Beneficiaries living in counties with greater psychiatrist density had a higher probability of seeing a mental health specialist. For example, increasing psychiatrist density by one standard deviation above the mean would have increased the probability of specialist use by about one-third for the elderly and one-tenth for the disabled in our sample. Furthermore, elderly beneficiaries living in counties with a greater density of general practitioners were less likely to see a specialist.³ Disabled beneficiaries living in States with more licensed psychologists per 1,000 residents were also significantly less likely to see a specialist. Although this last result seems surprising because psychologist services are ostensibly included in our outcome measure, it is perhaps less so in light of the earlier discussion of Medicare reimbursement. This apparent substitution effect could be explained if many disabled beneficiaries were paying psychologists out-of-pocket for their services, or if the psychologists were billing Medicare through group practices or providers other than psychiatrists. However, the conclusion that there may be substitution between psychiatrists and psychologists is inconsistent with the findings of Klevorick and McGuire (1987), who show that psychiatrist supply does not predict usual hourly fees for psychologists in private practice.

DISCUSSION

Our study has shown that, among Medicare beneficiaries treated for mental

³Analyses using the ratio of psychiatrists to general practitioners instead of the separate density measures yielded consistent results; beneficiaries living in counties with more psychiatrists relative to general practitioners were more likely to have seen a specialist, and the effect was highly significant for the elderly.

and substance abuse disorders during 1991, about one-third of the elderly and two-thirds of the disabled saw a mental health specialist at some point during the year. The higher rates of specialist use among the disabled may reflect a variety of factors, including the likelihood that a higher proportion of the psychiatric disorders of the disabled are chronic illnesses.

Elderly and disabled Medicare beneficiaries with affective and psychotic disorders or multiple psychiatric diagnoses were more likely to see a specialist during the course of the year. These findings suggest that specialty care use is at least in part based on clinical priorities, which assumes patients with more severe or complex conditions would be more likely to need specialty care. Of course, one cannot draw firm conclusions about the appropriateness of specialty care use from claims data. An individual patient with an uncomplicated depression may be well-suited for treatment by a well-trained primary care practitioner. On the other hand, a patient with a severe, treatment-refractory anxiety disorder will likely require treatment beyond the primary care sector. More detailed sources of clinical data are needed to study this issue further.

Specialty use was also influenced by factors other than measured psychiatric status, such as functional impairment, basis of Medicare eligibility and education. Greater functional impairment increased the use of specialty services among beneficiaries, although this may be because functional status measures mental as well as physical health. Rates of specialty use among elderly Medicare beneficiaries were low in comparison with both the younger populations examined in the studies described earlier and the disabled Medicare beneficiaries, who are by definition under 65 years of age. Both the low rates of specialty use among the elderly,

who may perceive mental illness to be particularly stigmatizing, and the increased rate of specialty use among the disabled associated with better education, suggest that beneficiary attitudes may be influential. The finding of significant education effects is consistent with earlier literature regarding provider specialty choices among other subpopulations. Unlike some of the previous studies, we did not find a significant effect of income or (in unreported results) insurance coverage.

The finding of area supply effects is also consistent with the past literature. The number of psychiatrists per 1,000 county residents was an important determinant of specialty use, as was the number of general practitioners per 1,000 county residents among the elderly subsample and the number of licensed psychologists per 1,000 State residents among the disabled subsample. These results support the economic model. It is also possible that provider density is correlated with unmeasured severity of illness, for example, if providers move to areas of greatest need, or severely ill patients move to be closer to providers. However, it seems unlikely that this phenomenon could entirely account for the effect, because measures of mental and physical health status were included in the model. Furthermore, both general practitioners and mental health specialists tend to locate in similar areas, yet had opposite effects on the rates of specialty use, even though psychiatric and medical morbidity tend to be positively correlated.

The significantly lower probability of seeing a mental health specialist among elderly living in counties with more general practitioners per 1,000 residents suggests that provider substitution may be occurring. Provider substitution needs to be defined in the context of our particular study. Because all of the beneficiaries in the sample were receiving at least some services for a

psychiatric diagnosis, by definition those who did not see a specialist received all of their services from general practitioners. Thus one explanation of our results is as follows: Among beneficiaries being treated for psychiatric disorders, both the elderly and the disabled see specialists when they perceive themselves to have "reasonable" access to such providers; when they do not, they obtain all of their mental health care from general practitioners. The crucial difference is that, among the elderly but not the disabled, the threshold for determining how easily accessible specialist services must be in order to procure them depends on whether their access to generalist services is also limited. Thus an elderly person might not be as willing as a disabled person to travel long distances or wait as long for an appointment in order to see a mental health specialist when a general practitioner is readily available. This explanation is consistent with the conjecture that transportation poses greater difficulties for the elderly, or that the disabled are more likely to have had previous episodes of care in which they formed preferences for specialist care.

Provider supply is a policy tool used by Federal programs such as the NHSC to improve access to care in underserved communities. The NHSC uses loan repayment and scholarship programs to promote the recruitment and retention of mental health professionals in areas of shortage, defined among other criteria by having a high population-to-provider ratio. Our findings suggest that if such programs are effective in increasing the density of mental health specialists in underserved areas, then they are likely to increase the proportion of Medicare beneficiaries treated for psychiatric conditions who see a mental health specialist during the course of their care. Yet another longstanding goal of manpower programs is to increase the

availability of general practitioners in areas with few medical providers, and certain communities (especially those in rural areas) are likely to be the focus of both efforts. Based on our results, increases in the availability of generalists and specialists will tend to have offsetting effects on the probability of mental health specialist use among elderly treated for psychiatric disorders.⁴ In contrast, the proportion of disabled beneficiaries who receive at least part of their psychiatric treatment in the specialty sector is unambiguously predicted to increase.

It is not possible to determine from this study alone whether psychiatric specialty services are being overused or underused by the Medicare population in the aggregate. However, unless the non-clinical variables are correlated with unmeasured health status, the finding that some of these measures have significant effects on provider specialty choices implies that mental health specialty use among some individual Medicare beneficiaries differs from specialty use if the treatment decision were based purely on clinical need for specialty care.

Although our results provide evidence that the Medicare population experiences uneven access to psychiatric specialty care, the implications of reduced access have not been adequately studied and must be established before policy recommendations can be made. Numerous options exist that would plausibly increase the rates of mental health specialist use among the Medicare population. Educational programs could be aimed at dispelling notions of stigma among the elderly or increasing awareness of mental disorders and psychiatric treatment. Medicare could provide a financial incentive

for mental health specialists to practice in underserved areas through area adjustments to the Medicare fee schedule.

Yet the degree to which influencing provider specialty choices should be a priority for policymakers depends on whether the quality of psychiatric care provided in the specialty and general medical sectors differs. Our conclusion that the elderly may be substituting general practitioner services for mental health specialty care corresponds to the notion of "demand substitution" rather than "technical substitution." Thus our findings say nothing about whether the services provided by generalists and specialists are equivalent in the sense of a production function for mental health outcomes. The research literature remains inadequate to evaluate in any detail how much value specialty care adds and for which patient populations. Nonetheless, policy initiatives, such as the Agency for Health Care Policy and Research guidelines for the treatment of major depression in primary care settings, explicitly recognize and attempt to address limitations of mental health care in the primary care setting.

Subsequent studies should further assess the relationship between specialist treatment use and clinical outcomes, to identify whether, and for what populations, more costly specialty care is warranted. Naturalistic studies of utilization, such as this report, can shed further light on differences between sectors as well. We are using subsequent waves of the MCBS data to follow beneficiaries over time to examine differences in treatment patterns and costs of care by mental health specialist use. A deeper understanding of these issues can inform future policy choices to come.

⁴This statement is not incompatible with the possibility that visits to all types of providers may increase as a result of the supply changes; however, the MCBS data do not allow us to examine the factors influencing the decision of beneficiaries to make initial visits.

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