Community Effects on Access to Behavioral Health Care

Carole Roan Gresenz, Susan E. Stockdale, and Kenneth B. Wells

Objectives. To explore the effects of community-level factors on access to any behavioral health care and specialty behavioral health care.

Data. Healthcare for Communities household survey data, merged to supplemental data from the 1990 Census Area Resource File, 1995 U.S. Census Bureau Small Area Estimates, and 1994 HMO enrollment data.

Study Design. We use a random intercept model to estimate the influences of community-level factors on access to any outpatient care, any behavioral health care conditional on having received outpatient care, and any specialty behavioral health care conditional on having received behavioral health care.

Data Collection. HCC data were collected in 1997 from about 10,000 households nationwide but clustered in 60 sites.

Principal Findings. Individuals in areas with greater HMO presence have better overall access to care, which in turn affects access to behavioral health care; individuals in poorer communities have less access to specialty care compared to individuals in wealthier communities.

Conclusions. Our findings of lower access to specialty care among those in poor communities raises concerns about the appropriateness and quality of the behavioral health care they are receiving. More generally, the findings suggest the importance of considering the current status and expected evolution of HMO penetration and the income level in a community when devising health care policy.

Key Words. Behavioral health, access, managed care, poverty

OBJECTIVES

Current efforts to improve access to care for mental health and substance abuse problems (i.e., behavioral health care problems) include federal and state parity acts, expansions of benefits for federal employees, and a variety of public education efforts to reduce stigma or provide information on treatment benefits. Not addressed in legislation or studies, however, are potentially important *local* issues in access to behavioral health care. Much of the current

information on access to mental health or substance abuse services is made up of national averages or relies on a few, not necessarily representative, communities (Katz et al. 1998; Regier, Narrow, Rae, et al. 1993).

Recent studies emphasize the importance of community factors in access to general medical care (Cunningham and Kemper 1998; Cunningham 1999) and to specialty services for behavioral health needs (Burnam et al. 1999; Rosenheck and Lam 1997). In this article, we examine ways in which community factors affect individuals' access to behavioral health care from general medical providers and specialty behavioral health care. We consider several key community factors that have been shown to be important in prior studies or that we hypothesize are likely to affect access to behavioral health care in the current environment. We analyze separately the effect of four related community factors (degree of urbanization, provider availability, managed care penetration, and community poverty) on access to any health services; use of services for mental health or substance abuse problems, given any use; and whether behavioral health services are obtained from specialty or general medical providers. Although each factor is important, we consider them jointly here, because they are associated and each may affect use of mental health services by individuals. For example, the growth of managed care is greater in urban centers, where there may also be greater provider availability. Greater community poverty may be associated with lower provider availability and, depending on the market, either greater or less managed care penetration. We comment separately on each factor.

The degree of urbanization in an area, first of all, has been shown to have an important influence on access to specialty behavioral health care. In a comparison of access to care across two sites, Yuen et al. (1996) find a positive correlation between urban setting and the use of specialty behavioral health care; likewise, Horgan (1986) finds a positive effect of urbanism on the use of specialty behavioral health services among all individuals.

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Regarding provider availability, the availability of both general medical providers and behavioral health specialists may be important, because both may provide mental health services (Regier, Narrow, Rae, et al. 1993). Horgan (1986) finds that the greater the supply of behavioral health specialists in a community, the more likely it is that individuals will use specialty behavioral health services.

An important change in health care delivery in recent years has been the growth of managed care, in both the general medical and the behavioral health sectors. About three-fourths of individuals with private health insurance have some form of managed care, and the share of traditional indemnity insurance has dropped by almost half between 1993 and 1995 (Jensen 1997). Similarly, membership in managed behavioral health organizations has more than doubled between 1992 and 1998, from 78 to over 162 million enrollees (Oss and Clary 1998). But the growth of managed care has varied across communities, states, and regions. Given these dramatic changes to the health care service delivery system and the variability of the changes across areas, we also explore effects of the penetration of managed care on access to behavioral health care.

The penetration of managed care at the community level may affect individuals' access to behavioral health care—beyond the individual-level effect of an individual having managed care—through a number of pathways. HMOs may affect access through advertising or education in the community. On the individual level, a person's use of behavioral health services may be affected when other individuals in the community use such care. For instance, neighbors may encourage each other to seek preventive and other types of primary care where they may also receive behavioral health services; alternatively, individuals may be less inclined to see a behavioral health specialist themselves if none of their friends or neighbors do so. Managed care at the individual level has been shown to increase access to primary care physicians but to decrease access to specialists (Newhouse 1993; Sturm, Meredith, and Wells 1996). We thus hypothesize that the higher the managed care penetration in a site, the greater the access will be to behavioral health services from primary care physicians but the lower the access will be to specialty behavioral health services among all community members.

Also, where HMO presence is high, consumers with unmanaged care are in shorter supply, and doctors may compete for these patients by reducing fees, thus lowering fee-for-service patients' copayments (typically a percentage of the cost of the visit) and increasing the probability that they will seek care. At the same time, other results have suggested that the presence of

managed care discourages charity care: Cunningham (1999) finds more access to general medical care in communities with low Medicaid HMO penetration rates among the uninsured. Among all individuals, therefore—insured and uninsured—we expect that some mediation of the positive effect of managed care penetration on access to behavioral health services may be taking place.

Prior studies have not found evidence of an effect of community income on access to behavioral health care, after controlling for individual income (Horgan 1986). We hypothesize that specialists, including behavioral health care specialists, may be unwilling to locate in lower-income areas, while general medical providers' focus in lower-income areas may be on primary care and not behavioral health care. Thus, we hypothesize that regional poverty will be associated with decreased access to behavioral health care in all sectors—over and above the effects of individual poverty and need. From a policy perspective, changes that affect community-level income, such as the significant growth of wage and family inequality during the 1970s, 1980s, and early 1990s (Economic Report of the President 1997; Weinberg 1996; Danziger and Gottschalk 1993) and recent changes to the social welfare system may thus be important factors to consider in developing policy prescriptives to improve access to behavioral health care.

DATA AND METHODS

We use data from the Healthcare for Communities (HCC) study, a national study that tracks the effects of the changing health care system for individuals at risk for alcohol, drug abuse, or mental health disorders. HCC links primary data collected from households, employers, and public agency administrators with secondary data sources (Sturm, Gresenz, Sherbourne, et al. 1999). The HCC household sample was selected from a random sample of 30,375 adult respondents to the Community Tracking Study (CTS) (Kemper et al. 1996), out of which 14,985 were selected for an expected completion of 10,000 interviews. The first wave obtained 9,585 eligible responses. Both the parent CTS and the HCC follow-up survey had moderate nonresponse rates of about 65 percent. The data are weighted for predictors of nonresponse on each survey.[1]

Demographic data collected by the main CTS were supplemented with additional HCC information specific to behavioral health issues. The HCC measures risk for several types of mental health conditions (including generalized anxiety disorder, major depression, dysthymia, mania, psychotic

disorder, and panic disorder), as well as alcohol and drug use and abuse; tracks behavioral health care utilization and quality of care from a variety of sources; gathers information about insurance status, wealth, and income; and covers life difficulties.

We use a random effects model (more specifically, a random intercept model) to evaluate the influences of community factors on access to care. Including community factors as determinants along with individual-level factors in a standard ordinary least squares (OLS) or probit model implicitly assumes that no community-level predictor variables are omitted (Rauch 1993). However, it is usually impossible to measure all relevant community characteristics, and the ones measured are subject to measurement error, so we anticipate that we have not captured all of the community characteristics that affect access to behavioral health care. Under this assumption, ordinary least squares or probit regression will underestimate the standard errors, resulting in an inflated false positive rate (type I error), that is, finding significant relationships where there are none (Moulton 1986). Thus, a more appropriate model is a random intercept model, which can be interpreted as a two-level model: the first level fits individual effects on access to care within sites, and in the second level, community-specific effects are fit on community-level characteristics. Intra-community correlation not accounted for by the included community characteristics is accounted for in such a model.[2]

We obtain standardized predictions from our models for different types of communities (for instance, communities with high, medium, or low HMO presence). We predict access to care under the assumption that all individuals in the sample reside in each of the communities of interest (e.g., with high, medium, or low HMO presence), and then average the predictions across individuals.

To separate the effects of factors on access to general medical care from access to behavioral health care and specialty behavioral health care, we model access to care in three stages: (1) access to any outpatient care, (2) access to any behavioral healthcare conditional on having received outpatient care, and (3) access to specialty behavioral health care conditional on having received any behavioral health care. We measure access to care in terms of utilization of services—specifically, utilization of outpatient services—in part because we have no data on use of inpatient general medical care.

"Any" behavioral health care use consists of outpatient mental health or substance abuse care received in a specialty setting *or* outpatient care with at least some treatment for a behavioral health problem from a primary care or general medical clinician. We define such treatment as an instance in which

the clinician suggests that the respondent cut down on alcohol or drugs, refers the respondent to specialty behavioral health care, suggests medication for a substance abuse or mental health problem, or counsels the respondent for five minutes or more about a mental health or substance abuse problem. Specialty behavioral health care is defined as visiting a mental health or substance abuse provider, such as a psychiatrist, psychologist, social worker, or psychiatric nurse, or attending an alcohol or drug program, inclusive of residential substance abuse treatment but exclusive of self-help groups such as Alcoholics Anonymous. In all cases, the dependent variable reflects utilization (at least one visit) over the 12 months prior to the survey interview.

   Our specification of the individual determinants of access to care follows previous studies (Crow et al. 1994). In addition to community determinants, we include demographic (age, education, race, family structure, and gender); economic (employment status and family income); health (mental and physical); and insurance measures (source, and for those with private insurance, HMO or non-HMO plan).[3] With regard to insurance, the household survey data are limited in that respondents are generally not knowledgeable about their behavioral health benefits specifically (Gresenz 1999); and thus we are unable to include measures of type of behavioral health care. The individual-level variables and their means are listed in Table 1.

   The two measures of mental health need include a dichotomous variable indicating whether or not the respondent screened positively for specific disorders based on the Composite Diagnostic Interview Schedule Screeners (CIDI-S) for generalized anxiety disorder (GAD), major depressive or dysthymic disorder; a one-item measure of lifetime manic symptoms; a measure of prior hospitalization for, or diagnosis of, psychotic disorder; and a screener for panic disorder, based on CIDI stem items and requiring a limitation in role functioning. In addition, we include an index of global mental health-related quality of life (MHRQOL), based on the SF-12.[4] The presence of an alcohol or drug problem is a dichotomous variable indicated by one of the following: (1) use in the past 12 months of sedatives, tranquilizers, amphetamines, prescription analgesics, inhalants, marijuana, cocaine, hallucinogens, or heroin not authorized by a physician, combined with having the need to use increasingly larger amounts to achieve the same "high," or having experienced emotional/psychological problems from drug use; or (2) a score of eight or higher on the Alcohol Use Disorders Identification Test. To control for general medical status, we include a count of the number of chronic conditions reported as present from a total of 17 items, as well as the global physical health-related quality of life (PHRQOL) scale of SF-12.

Table 1   Descriptive Statistics on Individual-level Independent
Variables

Variable	Mean (s.d.)	Variable	Mean (s.d.)
African American	0.12 (0.32)	Employed (currently or at any time over the prior 12 months)	0.74 (0.44)
Hispanic	0.09 (0.29)	Mental health problem	0.14 (0.35)
Other race	0.06 (0.25)	Alcohol or drug problem	0.07 (0.26)
High school	0.36 (0.48)	Mental Health Index of SF-12	45.7 (5.7)
Some college	0.25 (0.44)	Physical Health Index of SF-12	47.0 (6.2)
College	0.27 (0.44)	Count of chronic conditions	1.3 (1.6)
Age	46.7 (16.8)	Privately insured, HMO insurance plan	0.30 (0.46)
Age-squared	2465 (1713)	Privately insured, non-HMO insurance plan	0.31 (0.46)
Married	0.60 (0.49)	Privately insured, unsure of insurance plan	0.03 (0.16)
Male	0.46 (0.50)	Medicare	0.18 (0.38)
Any dependents	0.42 (0.74)	Medicaid	0.03 (0.17)
Log (family income over 1000)	3.83 (1.41)	Other insurance	0.04 (0.20)

Communities are defined as U.S. Census primary metropolitan statistical areas (PMSAs) where the population is more than 350,000 or, if less, as a group of counties within a state that are part of the same economic area as defined by the Bureau of Economic Analysis (BEA) (Kemper et al. 1996). Table 2 lists the community-level variables included in the analysis and their descriptive statistics.[5]

Our measures of degree of urbanization are derived from the 1999 Census Area Resources File (ARF). We apportion areas into metropolitan counties with a population of one million or more, metropolitan counties with a population of 250,000 to one million, and other counties. In addition, we include supply-side measures derived from the ARF: MD-to-population and psychologist-to-population ratios. These variables are designed to control for the availability of general medical doctors and behavioral health specialists and as indicators of the overall development of the service delivery

Table 2   Descriptive Statistics on Community-level Independent Variables

Community Variable	Mean	(s.d.)*
Median household income (in thousands)	37.7	(8.1)
HMO penetration rate (in percent)	20.6	(14.6)
Metro county with population of one million or more	0.53	(0.50)
Metro county with population of 250,000 to one million	0.25	(0.44)
Ratio of medical doctors/100,000 population	229	(79)
Ratio of psychologists/100,000 population	13	(8)

*Mean and standard deviation across the 60 communities.

system. Although community-level measures of behavioral health carve-out penetration are not available, we are able to analyze the effect of managed care penetration on access to care using data on the penetration of HMOs across counties. The HMO penetration rate is constructed from 1994 HMO enrollment data and population information (Baker 1997; Baker and Wheeler 1998). We include community-level income in our analysis, as measured by median household income from the 1995 Small Area Estimates (U.S. Census 1999).

Because the market penetration data are not available, we are unable to address ways in which market penetration of "specialty carve-out" behavioral health care affects access to care. Other limitations include our reliance on self-reported measures of need and access, and an analysis limited, in this case, to a cross-sectional investigation of community influences. Thus, although we are able to reveal those community factors that are correlated with access, our ability to make causal inferences is limited.

RESULTS

Neither the supply of physicians and specialists nor the degree of urbanization are significant determinants of access to any health services or behavioral health services. We experimented with several supply-side measures, including the ratios of the number of hospitals and number of psychiatric beds to the population, and with "urbanicity" specified as a continuous variable indicating the percentage of the population in a site residing in an urban area (as defined by the U.S. Census). However, the lack of statistical significance remained.

The effects of the penetration of managed care in a market and of the community income level on access to behavioral health care are strong and significant. Table 3 shows the predicted percentage of individuals who use different types of care across communities with varying levels of income and HMO presence.[6]

Access to any type of outpatient care is higher in areas that have a greater HMO presence, with nearly 80 percent of individuals using outpatient services in those communities with a significant HMO presence compared to 72 percent of persons in sites with little or no HMO presence. HMO penetration was not associated in the models with access to behavioral health care among those who receive outpatient care, nor with access to specialty care among those who receive behavioral health care. That is, the HMO penetration rate affects access to behavioral health care only through its effect on access to general medical care. We estimated a single regression that analyzed access to behavioral health care among all individuals and found that 13 percent of all persons in high HMO penetration sites received behavioral health care, compared to 12 percent in sites with average HMO penetration rates, and about 10.5 percent in sites with little or no HMO presence. This 2.5 percentage-point difference represents a 24 percent difference in access to behavioral health care in high HMO penetration sites compared to that in low HMO penetration sites.[7]

Table 3   Use of Care Among Individuals in Communities of Varying HMO Penetration and Income Levels

Use of	High HMO Presence	Medium HMO Presence	Low HMO Presence	High Income	Medium Income	Low Income
Any outpatient care	79.1%* $(t = 3.41)^{\dagger}$	76.1%* $(t = 2.55)$	71.7%*	76.1% $(t = .53)$	75.6% $(t = .34)$	75.0%
Any behavioral health care, given outpatient care	16.5% $(t = 1.05)$	16.4% $(t = 1.25)$	14.6%	17.4% $(t = 1.30)$	15.6% $(t = .34)$	15.1%
Any specialty behavioral health care, given any behavioral health care	47.9% $(t = .55)$	46.7% $(t = .46)$	44.3%	51.3%* $(t = 2.51)$	47.7%* $(t = 2.46)$	35.5%*

*Differences between high and low and medium and low categories are statistically significant at the 5 percent level.

†Reported *t*-values are for the coefficient of the high or medium income or HMO penetration variable compared to the reference ("low") category.

Persons in poorer communities do not appear less likely to receive outpatient care or behavioral health care from a primary care physician, but they are less likely to receive specialty behavioral health care. In high-income communities, more than half of individuals who receive behavioral health care receive specialty behavioral health care, compared to just over one-third of individuals in low-income communities. The 16 percentage-point difference represents a 45 percent difference in the proportion of users accessing specialty behavioral health care in wealthy communities compared to poor ones.

We investigated whether the average community income effect varied across poorer and wealthier individuals (i.e., whether the effect of the interaction between community- and individual-level income was significant); across individuals with different sources of insurance; and across individuals who were insured, insured in an HMO plan, or insured in a non-HMO plan.[8] Neither individual-level income nor source of insurance interacted with community-level income in affecting access to care. However, we found that the effect of neighborhood income was more pronounced for individuals insured in unmanaged plans compared with individuals in HMO insurance plans.[9] Among those insured and in unmanaged care, 50 percent of those in wealthier communities who used behavioral health services saw a behavioral health specialist, compared to 27 percent in less well-off communities, a difference of 23 percentage points. In comparison, the difference in access to behavioral health specialists for individuals in managed care in high-income versus low-income areas was five percentage points.

DISCUSSION

Our results illustrate the important influence of community factors on access to behavioral health care. Individuals in areas with greater HMO presence have better overall access to care, and this in turn affects access to some behavioral health care. Individuals in poorer communities—and not just poor or uninsured individuals in such communities—have less access to specialty care when they use behavioral health services than do individuals in wealthier communities. The lower access to specialty care for persons in poor communities is not a spillover effect of lower access to general health care. These results build on the prior literature and have important implications for policy, in that greater HMO presence is not, as some have feared, associated with lower access to specialty care for communities (after

adjusting for provider supply and other factors). Further, efforts to target increased access of mental health services for the poor need not only to take into account individuals in poverty, but regions in poverty as well.

Our HMO penetration rate findings are consistent with studies showing similar or greater access to any behavioral health care for individuals under staff model HMOs (Manning et al. 1987; Norquist and Wells 1991) and suggest that these effects spill over to other members of the community. HMOs may thus affect access by changing community help-seeking patterns; by promoting greater advertising or education in the community; or, in the case of doctors competing for a limited number of FFS patients, by reducing fees and, as a result, lowering the cost of obtaining care for FFS patients.

A complicating factor in interpretation of the HMO effect is the potential correlation between the site(s) where an HMO locates and other community factors such as supply of providers or economic health. We control for economic development in a community to the extent that it is reflected in the site-level income measure, development of the local clinician pool, and other community factors, but not all aspects of economic health or provider supply, and not all potentially correlated community factors, are accounted for by these variables. Thus, to the extent that HMO locate in areas with more established provider networks or in areas of greater economic growth, and to the extent that these factors are not completely accounted for, some of the effects of other community factors may be incorporated in the HMO effect we find. Further research is warranted on HMO locations and on reasons for HMO location choices.

Our finding of less access to specialty care among those in poor communities raises concerns about the appropriateness and quality of the behavioral health care they are receiving. Other studies suggest that for a common serious condition such as depressive disorder, appropriateness of care is lower for comparable patients receiving care only in the general medical sector compared to visiting mental health specialists (Wells et al. 1996; Katon et al. 1992). The findings speak to the importance of tracking need and access in local areas, as well as tracking national trends, when policies are being planned regarding behavioral health care services.

There are several possible explanations for lower specialty access in poor communities: one is specialist availability. (Although we controlled for availability of specialists, we did not have data on non-doctoral therapists nor on the adequacy of the public sector mental health and substance abuse systems.) In addition, primary care physicians in poorer communities may be less inclined to refer to specialists, or community cul-

tural differences in finding specialty treatment acceptable, may explain these findings.

CONCLUSION

Through greater access to any outpatient health care, access to any behavioral health care is greater in areas where HMOs have more of a presence. Access to care for mental illness or substance abuse from a specialist is especially limited in poor communities, both for poor and non-poor individuals. Thus, the community context for care matters in important ways for individual access to behavioral health care. Future research using time-series data on changes in HMO penetration over time and changes in access to behavioral health care could help to clarify causal links between community factors identified as important in this study and access to behavioral health care.

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NOTES

1. We performed non-response analyses for the HCC survey and developed weights that account for non-response bias. We analyzed a number and variety of variables and found our weighted national estimates to be within the sampling error of national estimates in surveys without similar levels of non-response. For example, HCC tracks the census numbers based on the Current Population Survey (CPS) well, suggesting that HCC can provide generalizable results. CPS estimates that 82.8 percent of adults have at least a high school education and that 24.4 percent have a college degree compared with 85.2 percent and 23.1 percent, respectively, in the HCC. Likewise, median family income is $37,005 in the CPS compared to $39,000 in the HCC.
2. The model is run using the SAS GLIMMIX procedure.
3. We do not have enough power to detect differences in the effect of type of insurance among persons with public insurance because of smaller sample sizes relative to those privately insured; in addition, many individuals publicly insured were unsure about whether their care was managed or not. The

HMO status recorded among persons privately insured reflects medical care, although not necessarily behavioral health care.

4. The SF-12 is a shorter version of the commonly used SF-36 developed in the Medical Outcomes Study. See Sturm, Gresenz, Sherbourne, et al. (1999) for more detail.

5. In cases where the community-level data are available only for a geography different from the one we employ in our definition of community, we construct a population-weighted average.

6. Sites are grouped into "high," "medium," and "low" HMO penetration rate and income sites based, respectively, on the distribution of the HMO penetration rate and the distribution of median household income across sites. Communities in the top quarter of the distribution are grouped as "high" sites, and those in the bottom quarter of the distribution are grouped as "low" sites. The models initially were run using the variables specified continuously and then were converted to categories to facilitate prediction.

7. The difference between the high- and low-penetration rate sites was significant at the 10 percent confidence level ($t = 1.8$, $p = .07$), as was the difference between the medium- and low-penetration rate sites ($t = 1.7$, $p = .09$).

8. A separate analysis of particular subgroups, such as persons uninsured or publicly insured, would allow all of the effects of community and individual variables to vary for each group, instead of just the interacted variables, providing a more flexible estimation approach. However, sample size considerations prevent us from separately analyzing these groups.

9. The differences between individuals in managed plans in high- and medium-income sites and those in unmanaged plans in high- and medium-income sites were significant at the 5 percent level ($t = 2.34$, $p = .02$; $t = 3.1$, $p < .01$).

REFERENCES

Baker, L. C. 1997. "The Effect of HMOs on Fee-for-Service Health Care Expenditures: Evidence from Medicare." *Journal of Health Economics* 16 (4): 453–81.

Baker, L. C., and S. K. Wheeler. 1998. "Managed Care and Technology Diffusion: The Case of MRI." *Health Affairs* 17 (5): 195–207.

Burnam, M. A., C. D. Sherbourne, and K. B. Wells. 1999. "Community Variations in Use of Mental Health Treatment Services." Unpublished manuscript, July.

Crow, M. R., H. L. Smith, A. H. McNamee, and N. F. Piland. 1994. "Considerations in Predicting Mental Health Care Use: Implications for Managed Care Plans." *Journal of Mental Health Administration* 21 (1): 5–23.

Cunningham, P. J. 1999. "Pressures on Safety Net Access: The Level of Managed Care Penetration and Uninsurance Rate in a Community." *Health Services Research* 34 (1, Part II): 255–70.

Cunningham, P. J., and P. Kemper. 1998. "Ability to Get Medical Care for the Uninsured: How Much Does It Vary Across Communities?" *Journal of the American Medical Association* 280 (10): 921–27.

Regier, D. A., W. E. Narrow, D. S. Rae, R. W. Manderscheid, B. Z. Locke, and F. K. Goodwin. 1993. "The de facto U.S. Mental and Addictive Disorder Service System: Epidemiologic Catchment Area Prospective One-Year Prevalence Rates of Disorders and Services." *Archives of General Psychiatry* 50 (2): 85–94.

Rosenheck, R., and J. A. Lam. 1997. "Client and Site Characteristics as Barriers to Service Use by Homeless Persons with Serious Mental Illness." *Psychiatric Services* 48 (3): 387–90.

Sturm, R., C. R. Gresenz, C. D. Sherbourne, J. Bhattarchaya, D. Farley, A. S. Young, K. Minnium, M. A. Burnam, and K. B. Wells. 1999. "The Design of Healthcare for Communities: A Study of Healthcare Delivery for Alcohol, Drug Abuse, and Mental Health Conditions." *Inquiry* 36 (2): 221–33.

Sturm, R., L. S. Meredith, and K. B. Wells. 1996. "Provider Choice and Continuity for the Treatment of Depression." *Medical Care* 34 (7): 723–34.

U.S. Bureau of the Census. 1999. *Small Area Estimates: Overview of the Project.* Washington, DC: U.S. Bureau of the Census, 29 March.

U.S. Council of Economic Advisors. 1997. *Economic Report of the President.* Washington, DC: Government Printing Office, February.

Wells, K. B., R. S. Sturm, C. D. Sherbourne, and L. S. Meredith. 1996. *Caring for Depression.* Cambridge, MA: Harvard University Press.

Weinberg, D. H. 1996. "A Brief Look at Postwar U.S. Income Inequality." *Current Population Reports. Household Economic Studies.* Census Bureau Pub. No. P60–191. Washington, DC: Government Printing Office, June.

Yuen, E. J., J. L. Gerdes, and J. J. Gonzales. 1996. "Patterns of Rural Mental Health Care: An Exploratory Study." *General Hospital Psychiatry* 18 (1): 14–21.