Beyond Parity: Primary Care Physicians' Perspectives On Access To Mental Health Care

More PCPs have trouble obtaining mental health services for their patients than have problems getting other specialty services.

by Peter J. Cunningham

ABSTRACT: About two-thirds of primary care physicians (PCPs) reported in 2004–05 that they could not get outpatient mental health services for patients—a rate that was at least twice as high as that for other services. Shortages of mental health care providers, health plan barriers, and lack of coverage or inadequate coverage were all cited by PCPs as important barriers to mental health care access. The probability of having mental health access problems for patients varied by physician practice, health system, and policy factors. The results suggest that implementing mental health parity nationally will reduce some but not all of the barriers to mental health care. [Health Affairs 28, no. 3 (2009): w490–w501 (published online 14 April 2009; 10.1377/hlthaff.28.3.w490)]

Dispose, it has been estimated that only about one-third of Americans with mental health problems actually receive treatment for their condition. Lack of access to mental health services is generally considered to be an important contributor to the underuse of services. The Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 addressed this lack of access by requiring group health plans with mental health benefits to provide the same level of coverage as provided for physical health problems. However, shortages of mental health providers in some areas and managed care restrictions on the use of mental health services have also been mentioned as potential access barriers. Problems with mental health care access are especially severe for low-income uninsured people and even some Medicaid enrollees, as public mental health services are seriously underfunded in many areas, and few private mental health care providers are willing to accept such patients.

Nevertheless, reasons for the underuse of mental health services are not well understood. In this regard, the perspective of primary care physicians (PCPs)

Peter Cunningham (pcunningham@hschange.org) is a senior fellow at the Center for Studying Health System Change in Washington, D.C.

w 4 9 0

14 April 2009

"PCPs have become the gateway to the mental health system for many patients by screening for mental health problems."

would be helpful in understanding the health system barriers that patients encounter in gaining access to specialized mental health services. PCPs are an increasing source of mental health care for many patients, and more people with mental health problems see them than see mental health specialists.⁴ PCPs have become the gateway to the mental health system for many patients by increasingly screening for mental health problems and providing referrals for patients whom they are unwilling or unable to treat in their own practices.

Using data from a nationally representative survey of physicians, this paper examines the proportion of PCPs who report problems obtaining outpatient mental health services for patients, as well as the reasons for these problems. The paper also examines how such problems differ by important practice and patient characteristics and by policy and health system factors.

Study Data And Methods

- Data source. The 2004–05 Community Tracking Study (CTS) Physician Survey—funded by the Robert Wood Johnson Foundation—includes a nationally representative sample of about 6,600 nonfederal physicians (including those with medical and osteopathy degrees) who spend at least twenty hours per week in patient care. The survey samples were drawn from practicing physicians in sixty randomly selected communities nationwide, defined as Primary Metropolitan Statistical Areas (PMSAs) or nonmetro parts of Bureau of Economic Analysis (BEA) Economic Areas (nine nonmetro sites were selected overall). All interviews were conducted by telephone, and the final response rate was 52 percent. Survey weights used to produce nationally representative estimates account for the probability of selection and correct for differential survey nonresponse. Standard errors of the estimates used in tests of statistical significance take into account the complex survey design (for example, the clustering of physician samples in the sixty communities). The sample includes a subsample of about 2,900 PCPs: those in family medicine, general internal medicine, and pediatrics.
- **Survey questions.** The survey asked, "During the last 12 months, were you unable to obtain any of the following services for your patients when you thought they were medically necessary?" Specific services asked about included high-quality outpatient mental health services (which includes psychiatrists as well as other mental health care providers such as psychologists); referrals to specialists of high quality; high-quality diagnostic imaging services; and nonemergency hospital admissions. A "yes" response indicated problems getting needed services.

Physicians who reported that they were unable to get the service were asked to rate the importance of each of the following reasons: (1) there aren't enough quali-

fied service providers or facilities in my area; (2) health plan networks and administrative barriers limit patients' access; and (3) patients lack health insurance or have inadequate insurance coverage. Response categories included very important, moderately important, not very important, and not at all important.

■ **Analysis.** Variation by physician practice, health system, and policy factors. Because access to mental health services is considered to be especially poor for low-income uninsured and Medicaid patients, the analysis examines whether problems getting services differ depending on the relative number of Medicaid (measured as the percentage of practice revenue derived from Medicaid) and low-income uninsured patients in the physician's practice. The latter is measured as the number of charity-care hours in the prior month, or the number of hours of care provided for free or reduced fees because of the patient's financial need.

Other physician and physician practice characteristics include specialty (pediatricians versus family practitioners and general internists), physician's sex and race, international medical graduate (IMG) status, board certification, practice size, and the amount of practice revenue that is capitated.

Health system characteristics of primary interest include the supply of mental health care providers. Ideally, such a measure should include all mental health providers in an area (psychiatrists and other providers); however, the study includes only a measure of the supply of psychiatrists in the county where the physician practices. This is obtained from the Area Resource File and reflects the number of psychiatrists per 100,000 people in the county.⁷

The analysis also includes a measure of the percentage of underinsured and uninsured residents in the community where the physician practices. High numbers of under- and uninsured people may reflect unmeasured attributes of patients' coverage as well as "spillover" effects because of health system capacity constraints. The measure is constructed from the 2003 CTS Household Survey, which was conducted in the same sixty communities as the CTS Physician Survey. As in other studies, underinsured people are identified as insured people whose out-of-pocket expenses are high relative to their family income (that is, greater than 5 percent of income for those with incomes below 200 percent of the federal poverty level, and greater than 10 percent of income for all others). ¹⁰

Because the survey preceded passage of the federal 2008 Mental Health Parity Act, the analysis includes a state-level measure of whether the state mandated parity of mental health benefits with other medical services (copayments, deductibles, and utilization limits) as of the end of 2004. The source of data for this measure is the Health Policy Tracking Service as reported on the Kaiser Family Foundation's statehealthfacts.org online database. States that required mental health parity for state employees only were not classified as having implemented parity for the purpose of this analysis.

Finally, the analysis examines the extent of health maintenance organization (HMO) penetration in the community where the physician practices. Higher

w492 14 April 2009

HMO penetration may increase access as a result of lower cost sharing and greater care coordination and integration. Alternatively, greater use of gatekeeping, restrictions on out-of-network referrals, and utilization review in HMOs that are designed to contain costs may also create barriers to care. HMO penetration in the community where the PCP practices is indicated by the percentage of insured people (both public and private) enrolled in an HMO, constructed from the 2003 CTS Household Survey.

Regression analysis. Ordinary least squares (OLS) regression analysis was used to examine how physician practice and market characteristics are associated with the probability of PCPs' reporting inability to obtain outpatient mental health services for patients. Dependent variables included one binary variable that reflects the inability to obtain mental health services (for any reason), as well as three binary variables indicating the probability of not getting such services for specific reasons: shortage of providers; health plan barriers; and lack of or inadequate coverage of patients. The samples for all four regressions are equivalent.

Study Results

- **Extent of problem getting outpatient mental health referrals.** PCPs have far more difficulty obtaining mental health services for patients than they do obtaining other commonly used services. Two-thirds of PCPs reported that they were unable to get outpatient mental health services for patients (Exhibit 1). This is more than twice the rate reported for any of three other common referrals: other specialists, imaging services, and nonemergency hospital admissions.
- Reasons for not getting mental health referrals. Among PCPs who reported that they were unable to get outpatient mental health referrals, 59 percent cited lack of or inadequate insurance coverage as a very important reason (Exhibit 2). A similar number cited lack of providers as being very important, while 51 per-

EXHIBIT 1
Ability Of Primary Care Physicians (PCPs) To Get Services For Patients, 2004–05

Percent of PCPs	All services	Specified service only ^b
Unable to get high-quality outpatient mental health services Unable to get high-quality specialist referrals	66.8% 33.8***	25.1% 2.5***
Unable to get nonemergency hospital admissions Unable to get high-quality imaging services	16.8*** 29.8***	0.9*** 2.1***
Unable to get at least one of the four services Unable to get all four services	76.9 5.5	_c

SOURCE: Community Tracking Study Physician Survey, 2004–05.

NOTE: Statistical significance denotes difference from percentage unable to get outpatient mental health services.

[°] PCPs could report that they were unable to get more than one service.

^b PCPs were unable to get only the specified service.

^c Not applicable.

^{***}p < 0.01

EXHIBIT 2
Reasons Given By Primary Care Physicians (PCPs) For Not Getting Needed Services
For Patients, 2004–05

Reason/Importance	Outpatient mental health services	Specialist referrals	Nonemergency hospital admissions
Lack of or inadequate coverage			
Not at all important	4.5%	6.7%	17.7%**
Not very important	10.7	10.3	16.1**
Moderately important	25.7	35.6**	31.6
Very important	59.0	47.5**	34.6**
Health plan barriers			_
Not at all important	7.0	6.7	10.7
Not very important	12.3	9.1	15.8
Moderately important	29.6	37.3**	35.2
Very important	51.1	46.9	38.3**
Shortage of providers			
Not at all important	12.2	21.0**	41.8**
Not very important	7.6	23.3**	23.0**
Moderately important	21.3	30.0**	16.5
Very important	58.9	25.7**	18.8**
At least one of the three reasons was very			
important	88.7	75.2**	62.7**
All three reasons were very important	23.7	9.3**	6.4**

SOURCE: Community Tracking Study Physician Survey, 2004-05.

NOTE: Statistical significance denotes difference from estimate for outpatient mental health services.

cent cited health plan barriers as being very important. High percentages of PCPs also cited health plan barriers and lack of or inadequate coverage as being very important reasons for not getting specialty referrals and nonemergency admissions. However, reasons for not getting these latter two services differed from those related to mental health services, and overall they were less intense (that is, fewer reported the reason as being very important). In particular, shortages of providers were cited much less frequently as important reasons for not obtaining specialist referrals or hospital admissions than for not obtaining outpatient mental health services.

■ Differences by physician practice, patient, and health system factors. Exhibit 3 presents the results of the OLS regression analysis for selected variables of interest, expressed as marginal probabilities. Separate regressions were run for office-based PCPs (in solo or group practices) and those practicing in hospitals or other institutional settings. The results of these regressions are not shown; they are discussed only when the results differ for the primary variables of interest.

PCP specialty. Pediatricians were more likely than other PCPs to report not getting outpatient mental health services because of health plan barriers (9.2 percentage points higher) and because of a shortage of providers (15 percentage points higher), but not as a result of lack of or inadequate coverage. The results are

w494 14 April 2009

^{**}p < 0.05

EXHIBIT 3
Results Of Ordinary Least Squares (OLS) Regressions On Primary Care Physicians (PCPs) Not Getting Outpatient Mental Health Services For Their Patients, 2004–05

		Probability of not getting outpatient mental health services for patients				
	Percent distribution of PCPs	Overall (any reason)	Due to lack of coverage or inadequate coverage	Due to health plan barriers	Due to shortage of providers	
Overall percent	100.0	66.8%	39.4%	34.0%	39.1%	
Pediatrics specialty (versus general internist and family medicine)	23.5	3.8	3.4	9.2**	15.0**	
Charity care hours in past month 0 (ref.) 1-10	35.0 47.1	_ 12.0**	- 7.7**	- 7.7**	10.2**	
10+	17.9	14.4**	16.8**	15.3**	7.3*	
Percent of practice revenue from Medicaid O (ref.) 1–24% 25% or higher	14.1 56.5 29.4	- 5.1 4.1	- 1.4 6.0	- -0.1 -4.4	- 1.1 4.9	
Number of psychiatrists per 100,000 in county ^a <8 (ref.) 8~24 25 or higher	28.3 60.5 11.2	- -5.2 1.2	- -0.9 7.8*	- -2.1 11.6**	- -12.0** -11.7**	
State has mandated mental health parity ^b	37.3	-2.1	-5,2*	-8.1**	5.0	
Percent of HMO members in CTS site ^o <30% (ref.) 30-50% >50%	25.2 52.9 21.9	- 1.4 -6.6	- -0.5 -8.6**	3.5 6.4	-2.6 -6.7	
Percent of practice revenue from capitation	17.6	-0.07	-0.01	0.02	-0.15**	
In 15 CTS sites with highest percent of under- and uninsured ^c	19.7	4.3	2.8	-2.1	5.1	

SOURCES: Community Tracking Study (CTS) Physician Survey, 2004-05; and see below.

NOTES: Estimates based on ordinary least squares (OLS) regression that included the following additional control variables: sex and race of physician, board certification, international medical graduate (IMG) status, owner of practice, size of practice, number of years in practice, and weeks worked in the year prior to the survey.

consistent with other reports indicating severe shortages of child and adolescent psychiatrists in many areas.¹² Coverage concerns are less of an issue for children (relative to adults), because children generally have higher rates of coverage from Medicaid and the Children's Health Insurance Program (CHIP).

^{*}Health Resources and Services Administration, Area Resource File.

^b Health Policy Tracking Service, as reported on statehealthfacts.org.

[°]CTS Household Survey, 2003.

^{*}p < 0.10 **p < 0.05

"Parity laws may exacerbate problems with provider shortages to the extent that they increase demand."

Number of charity-care and Medicaid patients in the practice. PCPs with a relatively high number of charity-care patients were consistently more likely than physicians with no charity-care patients to be unable to get outpatient mental health services for patients, regardless of the reason. By contrast, the percentage of revenue from Medicaid had no statistically significant effect on a physician's ability to get mental health services for all PCPs, as well as for office-based PCPs. However, having a relatively large number of Medicaid patients increased the likelihood of not getting mental health services among institutionally based PCPs, especially for reasons having to do with inadequate coverage (findings not shown). Medicaid patients among hospital-based PCPs may have more serious psychiatric disorders that require more intensive and expensive services, for which there may be shortages of providers willing to accept Medicaid patients.

Supply of psychiatrists in the community. Problems getting mental health services stemming from a shortage of providers were consistent with the supply of psychiatrists in the community.¹³ PCPs in counties with moderate or large numbers of psychiatrists (8 or more per 100,000) were about 12 percent less likely to report provider shortages as reasons for mental health access barriers than were PCPs in counties with fewer than 8 psychiatrists per 100,000.

Unexpectedly, PCPs in counties with a high number of psychiatrists had a greater probability of not getting mental health services because of plan barriers, as well as because of lack of or inadequate coverage among patients. Areas with a large number of psychiatrists were likely to have greater mental health care utilization overall, which health plans may attempt to control through greater restrictions on utilization or less generous benefits. Also, lack of coverage and plan barriers could be overshadowed by lack of capacity in areas with a relatively small number of psychiatrists.

State-mandated mental health parity. Compared to states with no mental health parity laws, PCPs in states with mandatory parity were eight percentage points less likely to report access problems due to health plan barriers and about five percentage points less likely to report problems stemming from lack of or inadequate coverage. Interestingly, PCPs in states with parity laws were more likely than PCPs in states with no parity laws to report problems due to a shortage of providers, although the results were not statistically significant ($\mathfrak{p}=0.12$). Parity laws may exacerbate problems with provider shortages to the extent that they increase the demand for mental health services.

HMO penetration. Access problems due to health plan barriers were greater in communities with higher HMO penetration, although the effects were not statistically significant among all PCPs. However, among office-based PCPs, moderate

w496 14 April 2009

and high HMO penetration in communities was associated with a significantly higher likelihood of encountering plan barriers to mental health services (about twelve percentage points greater than in communities with low penetration).

Greater restrictions and gatekeeper requirements may be somewhat offset by other advantages of HMOs. Specifically, lack of or inadequate coverage was less of a factor in areas with high HMO penetration, which likely reflects the lower deductibles and copays in HMOs for mental health and other services. Also, PCPs who derived a greater percentage of their revenue from capitation were less likely than PCPs with low capitation to report access barriers due to a shortage of providers. Consistent with other studies, greater coordination and integration of care in managed care settings may negate problems with referrals resulting from a provider shortage.

Number of uninsured and underinsured people in the community. PCPs in communities with high numbers of uninsured and underinsured people were more likely than PCPs in other communities to report problems getting mental health services for patients, although the difference with other communities was not statistically significant for all PCPs. However, office-based PCPs in high uninsured/underinsured communities were nine percentage points more likely than physicians in other communities to report problems getting mental health services for patients, a result that was statistically significant.

High numbers of uninsured/underinsured people reflect either unmeasured characteristics of the physician's practice (for example, patients' coverage attributes) or "spillover" effects that reduce system capacity because of low levels of third-party coverage. PCPs in communities with the highest number of underand uninsured people reported problems with provider shortages as frequently as they did inadequate coverage as a very important reason for mental health access problems (about 62 percent for both reasons; findings not shown). There is a strong correlation between the relative number of psychiatrists and psychologists in a community and the number of under- and uninsured people there. In communities with the fewest such people, there are about twice as many psychiatrists and psychologists per 100,000, on average, compared to communities with the most such people (Exhibit 4). Although it is unclear whether or not high numbers of uninsured/underinsured people are a direct cause of provider shortages (for example, as a result of spillover effects), high numbers of uninsured/under-insured people will likely make it much more difficult to increase mental health capacity in areas where there are shortages.

Discussion And Policy Implications

■ Lack of agreement on extent of underuse. Although there is general agreement among researchers and mental health experts that mental health care is underused, there is much disagreement as to the extent and nature of this underuse. Many believe that a "crisis" in mental health services exists in this country, as seen in re-

EXHIBIT 4
Differences in Key Physician And Community Characteristics By Size Of Uninsured And Underinsured Populations, 2004–05

	Percent who are under- or uninsured			
Characteristic	High	Moderate	Low	
Average number of physician charity-care hours in previous month Average percent of practice revenue from Medicaid	8.2	5.9**	5.2**	
	18.7%	18.3%	13.1%**	
Average number of psychiatrists per 100,000 ^b	12.5	15.6**	24.7**	
Average number of psychologists per 100,000 ^b	44.6	57.2*	100.8**	
Average percent of insured people in HMOs ^a Percent in state with mental health parity law ^c	32.2%	40.2%**	48.6%**	
	19.3%	40.1%**	52.7%**	

SOURCES: Community Tracking Study (CTS) Physician Survey, 2004-05; and see below.

NOTES: Statistical significance denotes difference from communities with high numbers of uninsured and underinsured residents. HMO is health maintenance organization.

ports of wide disparities between mental health care use and prevalence, as well as deficiencies in the delivery, coverage, and financing of mental health services. ¹⁴ Others believe that the problem has been overstated, pointing to trends over the past fifteen years showing increases in utilization, treatment options, coverage for mental health services, service providers, and declining social stigma. ¹⁵

■ Lack of consensus over causes of underuse. Similarly, there is lack of consensus over the major causes of the underuse of mental health services, an understanding of which is important for designing effective policies to increase use. Continuing stigma of mental illness, lack of awareness of treatment options, and other personal inhibitions still appear to be major factors in people's failure to seek care. Others stress lack of access to mental health care, focusing especially on the lack of coverage or inadequate insurance coverage, shortages of psychiatrists and other providers, fragmentation of service delivery, and severe underfunding of community mental health services for the uninsured as well as Medicaid patients. If

From the perspective of PCPs, the findings from this study strongly suggest that lack of access to mental health services is a serious problem—much more serious than for other commonly used medical services. It is striking that two-thirds of PCPs in this study could not obtain mental health services for at least some of their patients, a rate that was twice as high as for referrals to other specialists.

The fact that a high percentage of PCPs cited health plan barriers or inadequate

w498 14 April 2009

Based on estimates from the CTS Household Survey, 2003. Of the sixty CTS communities, those with "high" numbers of under- or uninsured people include the fifteen communities (upper quartile) with the highest percentage of the population who were under- or uninsured (about 41 percent of the population or more). Communities with "low" numbers of under- or uninsured people include the fifteen communities (lowest quartile) with the smallest percentage of the population who were under- or uninsured (30 percent or fewer). "Moderate" communities are the two quartiles in between.

^b Health Resources and Services Administration, Area Resource File.

^e Health Policy Tracking Service, as reported on statehealthfacts.org.

^{*}p < 0.10 **p < 0.05

"Even with national parity legislation, large gaps in mental health access will likely remain."

coverage as important reasons for the lack of access is consistent with much of the recent policy focus on parity in mental health benefits. Indeed, these concerns are lower in states that implemented parity legislation prior to the 2008 federal parity legislation, although the effects are relatively modest. Even with national parity legislation, large gaps in mental health access will likely remain, and the new law will have no effect on the severe access problems for the uninsured as well as problems related to the shortage of mental health care providers. In fact, these shortages could be exacerbated to the extent that parity in benefits results in increased demand for services.

Also, the findings show that the specific reasons for mental health access problems vary depending on the characteristics of the health care system, the extent of insurance coverage in the community, and the policy environment. Some of these factors are overlapping and may reinforce or compound access problems. For example, communities that have a high number of under- and uninsured people also tend to be in states that had no mandatory parity legislation (Exhibit 4). These communities also have a much smaller number of psychiatrists and psychologists, on average, compared to communities with high levels of insurance coverage and greater mental health parity, which may be (at least in part) a spillover effect of low coverage levels, but which also results in additional problems in obtaining mental health services. To further compound matters, communities with high numbers of under- and uninsured people also tend to have a relatively small percentage of their insured populations enrolled in HMOs; enrollment in HMOs might otherwise offset some of the coverage and provider shortage problems through greater coordination and integration of care and lower cost sharing.

■ **Study limitations.** The primary limitation of this study is that the questions on mental health care access asked of PCPs did not ascertain the severity of patients' conditions, the number of patients who needed but did not get mental health services, or the specific types of outpatient mental health care they tried but failed to get. Thus, the findings might be overstating the extent of barriers to mental health referrals if the physician's response to the survey questions reflects only a small minority of patients presenting with mental health problems.

However, a review of other research indicates that this is unlikely. For example, visits related to the treatment of mental disorders constitute only 3.1 percent of office-based physicians' total caseload. Thus, responses to the question on barriers to referral are likely based on only a small number of patients for most PCPs. Also, the average number of visits in the general medical sector for people with mental health problems is much smaller (two to three visits per year) than in the specialty mental health sector (about eighteen visits per year), and the adequacy of treat-

ment is much lower in the general medical sector.¹⁹ This suggests that the mental health care provided by PCPs is quite limited and that PCPs prefer to attempt to refer most patients requiring long-term or more intensive treatment to specialists.

THE VIEWS OF PRIMARY CARE PHYSICIANS provide unique insights into the limitations of the mental health care system. In fact, although there is still debate over the appropriate role of PCPs and the general medical care sector in providing mental health services, it's likely that the lack of access to specialty mental health providers is itself a contributing factor to the relatively high and rising rate of mental health problems being treated in the general medical sector. That so many identify access to mental health services as a problem is alarming and should be of great concern to policymakers.

This research was supported by the Commonwealth Fund, a national, private foundation based in New York City that supports independent research on health care issues and makes grants to improve health care practice and policy. The views presented here are those of the author and not necessarily those of the Commonwealth Fund, its directors, officers, or staff. The Community Tracking Study Physician Survey used in the analysis was funded by the Robert Wood Johnson Foundation. The author thanks Paul Ginsburg and Sara Collins for reviewing an earlier draft. Cynthia Saiontz-Martinez of Social and Scientific Systems Inc. provided excellent programming assistance.

NOTES

- R.C. Kessler et al., "Prevalence and Treatment of Mental Disorders, 1990 to 2003," New England Journal of Medicine 352, no. 24 (2005): 2515–2523.
- W. Goldman, "Is There a Shortage of Psychiatrists?" Psychiatric Services 52, no. 12 (2001): 1587–1589; M.A. Burnam and J. Escarce, "Equity in Managed Care for Mental Disorders," Health Affairs 18, no. 5 (1999): 22–31; and C.L. Barry, R.G. Frank, and T.G. McGuire, "The Costs of Mental Health Parity: Still an Impediment?" Health Affairs 25, no. 3 (2006): 623–634.
- P. Cunningham, K. McKenzie, and E.F. Taylor, "The Struggle to Provide Community-Based Care to Low-Income People with Serious Mental Illnesses," Health Affairs 25, no. 3 (2006): 694–705.
- P.S. Wang et al., "The Primary Care of Mental Disorders in the United States," chap. 14 in Mental Health, United States, 2004, ed. R.W. Manderschied and J.T. Berry (Rockville, Md.: U.S. Department of Health and Human Services, 2006).
- S. Williams et al., Community Tracking Study Physician Survey Methodology Report 2004–05, Statistical Design and Tracing for the Community Tracking Study Physician Survey, Technical Pub. no. 70, 2006, http://www.hschange.org/CONTENT/888/888text.pdf (accessed 11 March 2008).
- 6. Design of the weights follows the two-stage sampling strategy—that is, probability of selection for the individual CTS sites, and probability of selection of physicians within those sites. Adjustments to the weights were made to account for survey nonresponse. The sample frames (American Medical Association [AMA] and American Osteopathic Association [AOA] Masterfiles) and a panel of physicians surveyed in the previous round provided information on characteristics of nonresponders, which was used in the nonresponse adjustments to the survey weights. For an extensive description of the weight development, see ibid.
- 7. Data from the Health Resources and Services Administration, Area Resource File, are available through query search at http://www.arfsys.com. The presence of other mental health workers—specifically, the number of psychologists in the county—was also considered and tested in the analyses. However, this measure was dropped from the final analysis because it was highly correlated with the number of psychiatrists, and there was no independent association with the percentage of PCPs reporting problems getting needed mental health services for their patients.
- 8. M.V. Pauly and J.A. Pagán, "Spillovers and Vulnerability: The Case of Community Uninsurance," Health Af-

w500 14 April 2009

- fairs 26, no. 5 (2007): 1304-1314.
- R. Strouse, B.L. Carlson, and J. Hall, Community Tracking Study: Household Survey Methodology Report 2003 (Round 4), Technical Pub. no. 62, March 2005, http://www.hschange.org/CONTENT/757/757.pdf (accessed 23 March 2009).
- P.J. Cunningham, Overburdened and Overwhelmed: The Struggles of Communities with High Medical Cost Burdens, Issue Brief no. 28 (New York: Commonwealth Fund, 2007); and C. Schoen et al., "Insured but Not Protected: How Many Adults Are Underinsured?" Health Affairs 24 (2005): w289–w302 (published online 14 June 2005; 10.1377/hlthaff.w5.289).
- L. Meredith et al., "Treating Depression in Staff-Model versus Network-Model Managed Care Organizations," Journal of General Internal Medicine 14, no. 1 (1999): 39–48; and S. Trude and J.J. Stoddard, "Referral Gridlock: Primary Care Physicians and Mental Health Services," Journal of General Internal Medicine 18, no. 6 (2003): 442–449.
- 12. C.R. Thomas and C.E. Holzer III, "The Continuing Shortage of Child and Adolescent Psychiatrists," *Journal of the American Academy of Child and Adolescent Psychiatry* 45, no. 9 (2006): 1023–1031.
- 13. Although the measure includes only psychiatrists, the results likely reflect the availability of mental health services more generally, as indicated by the high correlation between number of psychiatrists and psychologists in the county.
- 14. P.S. Appelbaum, "The 'Quiet' Crisis in Mental Health Services," Health Affairs 22, no. 5 (2003): 110-116.
- 15. D. Mechanic and S. Bilder, "Treatment of People with Mental Illness: A Decade-Long Perspective," *Health Affairs* 23, no. 4 (2004): 84–95; and R.G. Frank and S. Glied, "Changes in Mental Health Financing since 1971: Implications for Policymakers and Patients," *Health Affairs* 25, no. 3 (2006): 601–613.
- D. Mechanic, "Is the Prevalence of Mental Disorders a Good Measure of the Need for Services?" Health Affairs 22, no. 5 (2003): 8–20.
- 17. R. Mojtabai, "Trends in Contacts with Mental Health Professionals and Cost Barriers to Mental Health Care among Adults with Significant Psychological Distress in the United States: 1997–2002," American Journal of Public Health 95, no. 11 (2005): 2009–2014; Goldman, "Is There a Shortage of Psychiatrists?"; Cunningham et al., "The Struggle to Provide Community-Based Care"; and Appelbaum, "The 'Quiet' Crisis in Mental Health Services."
- 18. D.K Cherry et al., "National Ambulatory Medical Care Survey: 2005 Summary," Advance Data from Vital and Health Statistics no. 387 (Hyattsville, Md.: National Center for Health Statistics, 2007).
- 19. Wang et al., "The Primary Care of Mental Disorders in the United States."