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Factors that Affect Choice of Mental Health Provider and Receipt of Outpatient Mental Health Treatment

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Abstract

According to the US Department of Health and Human Services, 91 million adults live in mental health professional shortage areas and 10 million individuals have serious mental illness (SMI). This study examines how the supply of psychiatrists, severity of mental illness, out-of-pocket costs, and health insurance type influence patients' decisions to receive treatment and the type of provider chosen. Analyses using 2012–2013 MarketScan Commercial Claims data showed that patients residing in an area with few psychiatrists per capita had a higher predicted probability of not receiving follow-up care (46.4%) compared with patients residing in an area with more psychiatrists per capita (42.5%), and those in low-psychiatrist-supply areas had a higher predicted probability of receiving prescription medication only (10.2 vs 7.6%). Patients with SMI were more likely than those without SMI to obtain treatment. A $25 increase in out-of-pocket costs had marginal impact on patients' treatment choices.

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Introduction

Approximately 44 million American adults experience mental illness in a given year.[1] Policymakers have expressed concern about the lack of an adequate supply of mental health specialists to treat individuals with mental illness.[2] According to the US Department of Health and Human Services, 91 million adults live in a mental health professional shortage area, where it is difficult to obtain timely treatment.[2]

Access to a psychiatrist is particularly critical for the 10 million[1] individuals with a serious mental illness (SMI).[3, 4] The National Survey on Drug Use and Health defines SMI as a mental disorder that causes substantial functional impairment (i.e., a disorder that substantially interferes with or limits one or more major life activities).[1] Timely and recurring visits with a psychiatrist can reduce the likelihood of developing various psychiatric and physical comorbidities and of embracing life-threatening and life-altering self-treatments (such as substance abuse)[5, 6] that affect work productivity and activities of daily living. Establishing a relationship with a psychiatrist also may support better care coordination among providers and improve treatment plans.[7, 8] Unfortunately, individuals with an SMI are likely to experience delays in obtaining care averaging 5 years or longer from onset of illness to initial treatment.[6, 9]

For some types of conditions that are not considered SMI, and for some treatment approaches, consumers can receive appropriate treatment from non-psychiatrist mental health specialists, such as social workers, psychologists, and primary care physicians. For example, a subset of patients with a non-complex, stable mental health condition may be treated adequately by a primary care physician.

The type of provider that patients select is influenced by their preferences, such as whether they prefer psychotherapy or medication only, a primary care office enviornment, or a psychiatrist.[10, 11] This choice may be affected by the supply of providers in their area, the number of those providers who participate in their insurance plan's provider network,[12] and the costs associated with receiving services from an out-of-network provider.[13] Some insurance plans have a narrow provider network that limits in-network provider options available to patients. Those plans often require higher out-of-pocket payments for providers who are out of the plan's network.[12]

The purpose of this study was to examine how the supply of psychiatrists, severity of mental illness, out-of-pocket costs, and health insurance type influence whether patients receive treatment, the type of provider they choose, and whether the provider is in network. This study tests the hypothesis that individuals with SMI, those who live in a low-psychiatrist-supply area, those who have higher out-of-pocket costs, and those in health maintenance organizations (who receive care within a defined network of providers) are most at risk for not receiving specialty treatment.

Methods

Data Sources and Sample Selection

The 2012–2013 Truven Health MarketScan® Commercial Claims and Encounters Database was used for this study; 2012–2013 was the most recent time period for which data were available. At the time of the analysis, the database contained the de-identified health care claims of approximately 43 million enrollees and their dependents annually and captured approximately 30% of people in the USA with private health insurance. It has longitudinal, patient-level data on insurance plan enrollment, inpatient hospital stays, outpatient and emergency department (ED) visits, and prescription drugs.

The sample was limited to adults aged 18–64 years who were newly diagnosed with a mental illness in 2013. Individuals aged 65 years and older were excluded because MarketScan does not capture all Medicare claims. Children and adolescents were excluded because their provider choice

likely is determined by factors other than those that influence the provider choice of adults seeking care. Enrollees in healthcare plans in which provider in-network or out-of-network status was missing for more than 10% of the medical claims were excluded. Patients with missing network status were similar demographically to those with a network status indicator.

Because there is no definitive test for mental health in claims data, all individuals who had a mental health diagnosis in the primary or secondary field on an inpatient or outpatient insurance claim were selected for inclusion in the study. These individuals were identified by International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes of 290xx, 291xx, 293xx,294xx, 295xx, 296xx, 297xx, 298xx, 299xx, 300xx, 301xx, 302xx, 306xx, 307xx, 308xx, 309xx, 310xx, 311xx, 312xx, 313xx, 314xx, 315xx, 316xx, 317xx, 318xx, 319xx, V402, V409, V663, V673, or V701. To identify new cases, individuals were excluded if their initial mental health diagnosis was not preceded by a 12-month period without a mental health diagnosis or a prescription fill for a psychiatric medication.

Primary Outcomes

Choice of provider for a follow-up outpatient visit in the 3-month period after the initial 2013 diagnosis was measured.[14] Providers were characterized as a psychiatrist (including psychiatric nurses who are predicted to play a critical role in mental health service delivery in the future),[15] other mental health professional (e.g., psychologist, psychotherapist, social worker, care provided in an outpatient mental health facility), or general practitioner (e.g., family practice, internal medicine, obstetrics, and gynecology). Internal MarketScan taxonomy was used to assign provider group definitions, which are based on consolidation of internal specialty codes used by insurance companies.

In the 3-month follow-up period after initial diagnosis, individuals were classified as having either an office visit follow-up, pharmacy-only follow-up, or no follow-up. Mental health office visits were defined as non-ED outpatient visits associated with a mental health diagnosis. Patients with no office visit but with a prescription for a mental health medication were classified as receiving pharmacotherapy only. Individuals with no office-based visits for mental health or mental health prescriptions were classified as having no follow-up care.

The provider choice of individuals who had multiple visits with different providers within the 3-month period was categorized using a hierarchy. First, if the individual received out-of-network care at least once, he or she was assigned to that provider. Second, if the individual received care from a psychiatrist at least once, he or she was assigned to that provider. The full prioritization used was as follows: out-of-network psychiatrist, in-network psychiatrist, out-of-network other mental health specialist, in-network other mental health specialist, out-of-network general practitioner, in-network general practitioner, mental health prescription, no mental health office visit or prescription. For example, a patient who saw both an in-network psychiatrist and an in-network general practitioner was assigned to the in-network psychiatrist category. The most expensive choice was purposefully assigned to the patient to capture the greatest elasticity of demand relative to price.

Primary Independent Variables

A dichotomous measure of psychiatrist supply based on psychiatrists per 100,000 individuals was created using data from the Area Health Resources Files,[16] a county-level database assembled by the Health Resources and Services Administration (HRSA). The most recent calendar year for which this measure was available was 2012. The distribution of psychiatrists across counties was examined, and an approximate midpoint of psychiatrists per capita (20 psychiatrists per 100,000)

was identified. Counties with psychiatrists per capita at or below that point were identified as low-psychiatrist-supply areas.

SMI was identified by the presence of one of the following ICD-9-CM mental health diagnosis codes at the index visit: 295.xx, schizophrenic disorders; 296.2× and 296.3×, major depressive disorder; 296.0× and 296.1×, manic disorder; 296.4×–296.7×, bipolar affective disorder; 296.8×, other and unspecified manic-depressive psychoses; 296.9×, other and unspecified affective psychoses; 293.xx, transient organic psychotic conditions; 294.xx, other organic psychotic conditions (chronic); 297.xx, paranoid states or delusional disorders; 298.xx, other nonorganic psychoses; and 299.xx, psychoses with origin specific to childhood.[17]

To estimate the costs a consumer would consider prior to treatment, costs were estimated both in and out of network by employer. To calculate these consumer costs, all 2013 MarketScan outpatient records associated with office-based mental health treatment and follow-up as identified by Current Procedural Terminology, 4th Edition (CPT-4) codes were selected. Out-of-pocket costs in dollars for in-network providers were defined as the sum of the copayment, coinsurance, and deductible. Out-of-pocket costs for out-of-network providers were defined as the sum of the copayment, coinsurance, and deductible plus any difference between the allowed amount (insurance payment, copay, coinsurance, and deductible) and the amount charged, because the patient might be liable for that entire amount. To estimate out-of-pocket costs for employer-sponsored insurance coverage, average in- and out-of-network out-of-pocket costs by employer were calculated for each choice: in-network general practitioner, out-of-network general practitioner, in-network psychologist, out-of-network psychologist, in-network psychiatrist, out-of-network psychiatrist, and prescription therapy only.

Control Independent Variables

Individual patient characteristics included sex, age group (18–25, 26–45, and 46–64 years), and region of residence (Northeast, North Central, West, and South). In addition, four categories of insurance plan type were identified: preferred provider organization (PPO), which was the reference group in multivariate analyses; point-of-service (POS) plan; consumer-directed health plan (CDHP) grouped with high-deductible health plan (HDHP), and exclusive provider organization (EPO) grouped with health maintenance organization (HMO). A variable for presence of substance use disorders at the index encounter was created because this comorbidity may influence treatment choice.[18]

Analytic Methods

A nested logistic (NL) regression approach was utilized to estimate follow-up mental health office visits in the 3-month period following an initial mental health diagnosis by provider type (i.e., psychiatrist, other mental health provider professional or facility, or general practitioner) and network status (i.e., in network or out of network). NL regression is an integrated model that allows groups of alternatives to be similar to each other in unobserved ways[19] (e.g., they can share error terms so that the decision to go to an in-network or out-of-network psychiatrist is correlated with the overall choice of seeing a psychiatrist). Figure 1 presents the structure of treatment options and the sample size associated with each option.

SAS version 9.4 (SAS Institute Inc., Cary, NC) was used to create the analytic database and conduct descriptive analyses. STATA version 12 was used for the NL multivariate regression analyses (STATACorp LLP, College Station, Texas), including the marginal impact of an increase in out-of-pocket spending on choice. For ease of interpretation, results are presented as predicted probabilities derived from the NL regression (detailed STATA code and methodology are available on request).

Fig. 1

Number of patients in each treatment choice. Abbreviations: *Avg.* average, *GP* general practitioner, *MH* mental health, *OOP* out-of-pocket, *RX* prescription
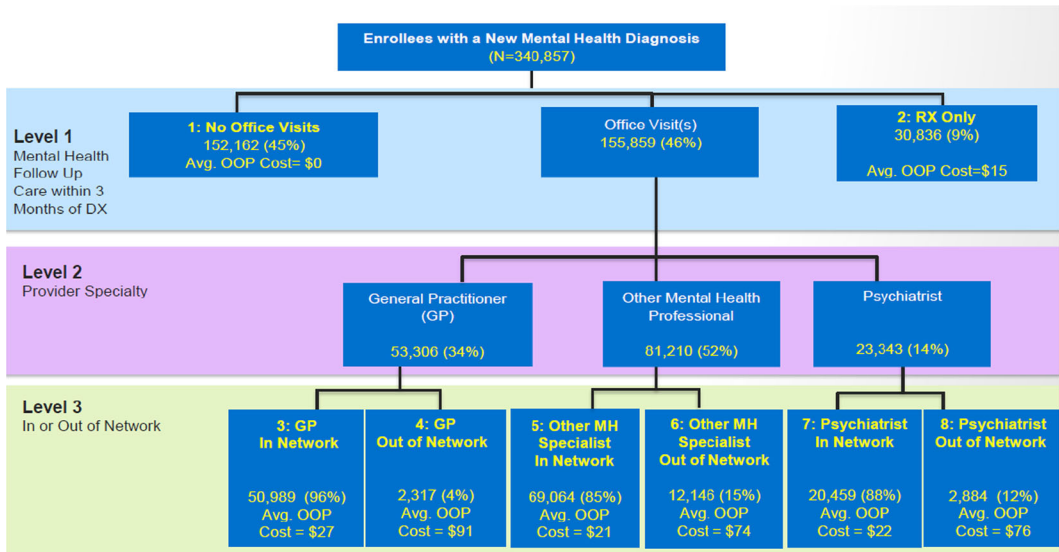
Results

Demographic Characteristics

There were 4,649,607 unique individuals with a mental health diagnosis out of 43,737,217 enrollees in MarketScan. There were 340,857 individuals newly diagnosed with a mental illness who met the study inclusion criteria. Table 1 contains a description of patient characteristics. The majority of patients (86.6%) did not have SMI. Only 3.8% had a reported co-occurring substance use disorder diagnosis at the time of the mental health diagnosis. The majority of patients were female (58.4%); 41.4% were 26–45 years old, and 39.9% were 46–64 years old. Most patients (61.3%) had a PPO plan. The sample was distributed fairly evenly across geographic regions. A vast majority of enrollees (89.3%) were active employees.

Figure 1 shows that 46% of individuals in the study sample had at least one mental health office visit within 3 months following their diagnosis. Nine percent had no mental health office visits but did have a prescription medication for a mental health condition. The remaining 45% did not have any mental health office visits or prescriptions. Of those who had a mental health office visit, 34% saw a general practitioner, 14% saw a psychiatrist, and 52% saw another mental health professional. Four percent of patients who saw a general practitioner, 12% of those who saw a psychiatrist, and 15% of those who saw another type of mental health professional went out of network.

Nested Logit Regression

Regression-adjusted predicted probabilities and 95% confidence intervals (CIs) calculated from nested logit (NL) parameter estimates are provided in Table 2. After adjusting for patient age, sex, insurance type, and SMI status, the results indicated that patients who lived in an area with few psychiatrists had a higher predicted probability of not receiving follow-up care (46.4%, CI = 31.7–

Table 1

Descriptive statistics of dependent and primary independent variables and patient demographic characteristics for individuals with a mental disorder, 2012–2013 ($N = 340,857$)

Covariate	Frequency	%
SMI diagnosis at index		
No	295,206	86.6
Yes	45,651	13.4
Substance abuse diagnosis at index		
No	327,771	96.2
Yes	13,086	3.8
Psychiatrist supply		
Not low (> 20 psychiatrists per 100,000)	162,568	47.7
Low (≤ 20 psychiatrists per 100,000)	178,289	52.3
Age group, years		
18–25	63,654	18.7
26–45	141,136	41.4
46–64	136,067	39.9
Sex		
Male	141,906	41.6
Female	198,951	58.4
Insurance status		
PPO	208,787	61.3
EPO or HMO	49,654	14.6
POS	34,264	10.1
CDHP or HDHP	46,111	13.5
Missing or unknown	2041	0.6
Region		
Northeast	69,113	20.3
North Central	72,973	21.4
South	118,911	34. 9
West	77,957	22.9
Unknown	1903	0.6
Employee type		
Active (full time, part time)	304,269	89.3
Long-term disability	866	0.3
Retiree	30,097	8.8
Surviving spouse, COBRA, other, or unknown	5625	1.7
Employee relationship		
Employee	198,408	58.2
Spouse	85,904	25.2
Child or other	56,545	16.6

CDHP consumer-directed health plan, *COBRA* Consolidated Omnibus Budget Reconciliation Act, *EPO* exclusive provider organization, *HDHP* high-deductible health plan, *HMO* health maintenance organization, *POS* point of service, *PPO* preferred provider organization (including comprehensive insurance category), *SMI* serious mental illness

The data source was the Truven Health MarketScan® Commercial Claims and Encounters Database, 2012–2013

Table 2

Nested logit predicted probabilities overall in percentages, by serious mental illness status, psychiatric supply, and health maintenance organization enrollment, 2012–2013 (N = 340,857)

Measure	Psychiatrist		Other mental health specialist or facility		General practitioner		Rx only	No follow-up
	In network	Out of network	In network	Out of network	In network	Out of network		
Overall predicted probability	6.0	0.9	20.0	4.0	14.8	0.8	9.0	44.5
SMI status								
SMI	16.4*	2.1*	20.5*	3.4*	13.7	0.8*	8.8*	34.3*
No SMI (ref)	4.4	0.7	19.9	4.1	15.0	0.7	9.0	46.1
Supply of Psychiatrists								
Psychiatrist-low-supply area	5.3*	0.6*	17.9*	2.7*	16.3	0.6*	10.2*	46.4*
Not a psychiatrist-low-supply area (ref)	6.8	1.2	22.3	5.5	13.2	0.9	7.6	42.5
HMO enrollment								
PPO (ref)	6.0	1.0	19.6	4.5	14.2	0.8	9.1	44.4
EPO or HMO	6.1*	0.2*	18.5*	0.8*	19.9	0.4*	7.9*	46.2*
POS	6.0	1.2*	20.4	3.8	14.0	0.5*	9.1*	45.0*
CDHP or HDHP	5.7	1.0*	23.1*	5.2*	12.6	0.7*	9.3*	42.4*
Missing or unknown	6.1	1.0	15.1	5.0	13.2	2.7*	9.6	47.2

CDHP consumer-directed health plan, *EPO* exclusive provider organization, *HDHP* high-deductible health plan, *HMO* health maintenance organization, *POS* point of service, *PPO* preferred provider organization, *psych* psychiatrist, *ref.* reference, *Rx* prescription, *SMI* serious mental illness

*Nested logistic regression estimates were statically significant ($p \leq 0.05$); general practitioner in-network was the reference category

The data source was the Truven Health MarketScan® Commercial Claims and Encounters Database, 2012–2013

57.8%) compared with patients residing in an area with a larger supply of psychiatrists (42.5%, CI =26.6–54.5%). Moreover, compared with patients in areas with a larger supply of psychiatrists, those in low-psychiatrist-supply areas had a higher predicted probability of having prescription medication only (10.2%, CI = 8.0–13.3% vs. 7.6%, CI = 6.0–10.0%), a lower probability of follow-up care with a psychiatrist (5.3%, CI = 2.1–16.1% in network and 0.6%, CI = 0.1–1.6% out of network vs. 6.8%, CI = 2.7–19.7% in network and 1.2%, CI = 0.1–3.2% out of network), and a lower probability of seeing a mental health professional other than a psychiatrist (17.9%, CI = 11.7–24.9% in network and 2.7%, CI = 0.3–4.7% out of network vs. 22.3%, CI = 15.6–29.7% in network and 5.5%, CI = 0.7–9.3% out of network).

Patients with SMI had a significantly lower predicted probability of having no follow-up treatment (34.3%, CI = 23.3–47.9%) compared with patients without SMI (46.1%, CI = 36.7–57.2%). Their predicted probability of seeing a psychiatrist was significantly higher (16.4%, CI = 8.7–26.3% in network; 2.1%, CI = 0.3–4.6% out of network) compared with those without SMI (4.4%, CI = 2.2–7.5% in network; 0.7%, CI = 0.1–1.7% out of network). Patients with SMI also were more likely than those without SMI to visit an in network mental health specialist other than a psychiatrist (20.5%, CI = 7.0–29.6% in network and 3.4%, CI = 0.4–7.9% out of network vs. 19.9%, CI = 12.6–28.3% in network and 4.1%, CI = 0.4–8.8% out of network).

The most notable differences between health plans were between HMO or EPO plans and CDHPs or HDHPs. Patients with an HMO or EPO plan were more likely to have no follow-up treatment (46.2%, CI = 30.9–57.6%) compared with those with a PPO plan (44.4%, CI = 29.8–56.9%). Patients with a CDHP or HDHP plan, by contrast, were less likely (42.4%, CI = 28.0–55.8%) to receive no follow-up care compared with those with a PPO plan.

Use of out-of-network care was similar across insurance plans for all provider types, with some exceptions. Patients with an HMO or EPO plan were significantly less likely to see an out-of-network general practitioner (0.4%, CI = 0.1–1.0%) compared with patients with a PPO plan (0.8%, CI = 0.2–2.2%). Patients with an HMO or EPO plan also were less likely than those with a PPO plan to see another out-of-network mental health professional (0.8%, CI = 0.2–1.6% vs. 4.5%, CI = 1.0–8.8%) or an out-of-network psychiatrist (0.2%, CI = 0.01–0.5% vs. 1.0%, CI = 0.3–18.5%). Patients with a CDHP or HDHP had a higher probability of going to an out-of-network mental health professional other than a psychiatrist (5.2%, CI = 2.0–10.0%) compared with patients with a PPO plan (4.5%, CI = 1.0–8.8%).

Patients with an HMO or EPO plan were more likely to receive care from an in-network general practitioner than were patients with a PPO plan (19.9%, CI = 15.6–25.9% vs. 14.2%, CI = 10.1–19.0%), but the difference was not statistically significant. Patients with an HMO or EPO plan were slightly less likely to receive prescription-only treatment (7.9%, CI = 5.6–10.9%) than were patients with a PPO plan (9.1%, CI = 6.3–13.1%). Patients with a CDHP or HDHP had a higher probability (23.1%, CI = 14.9–33.2%) of going to an in-network mental health professional or facility than were those with a PPO plan (19.6%, CI = 12.7–27.8%).

To simulate the impact of a real-world change in out-of-pocket spending on treatment choice, the marginal effect estimates from the NL model were used to calculate the change in predicted probabilities given a $25 increase in out-of-pocket cost for each treatment option on all choice options (Table 3).

The $25 increase did not have a substantive impact (≤1% change in predicted probability) on provider choice or on choice of in-network or out-of-network provider, with two exceptions. The first exception was that the $25 increase in out-of-pocket cost for an in-network general practitioner reduced the predicted probability of receiving treatment from an in-network general practitioner by 2.7% (from 14.8 to 12.1%) and increased the likelihood of no follow-up office visit by 1.2% (from 44.5 to 45.7%). The second exception was that a $25 increase in out-of-pocket cost for an in-network other mental health provider reduced the predicted probability of receiving treatment with an in-network other mental health provider by 3.5% (from 20.0 to

Table 3

Impact of $25 increase in out-of-pocket spending and average cost by treatment choice, 2012–2013 ($N = 340,857$)

Measure	Avg. ($)	Avg. Prob. (%)	+$25 GP-in (%)	+$25 GP-out (%)	+$25 MH-in (%)	+$25 MH-out (%)	+$25 PS-in (%)	+$25 PS-out (%)	+$25 RX Only (%)	+$25 No Follow-up (%)
GP-in	26.8	14.8	12.1	15.3	15.3	14.9	15.0	14.8	15.0	16.0
GP-out	90.9	0.8	1.3	0.1	0.8	0.8	0.8	0.8	0.8	0.8
MH prof-in	20.5	20.0	20.5	20.0	16.5	20.9	20.2	20.0	20.3	21.5
MH prof-out	73.5	4.0	4.1	4.0	4.9	2.6	4.0	4.0	4.1	4.3
Psych-in	22.4	6.0	6.2	6.0	6.2	6.0	4.8	6.3	6.1	6.4
Psych-out	76.3	0.9	0.9	0.9	1.0	0.9	1.2	0.5	0.9	1.0
RX only	14.6	9.0	9.2	9.0	9.3	9.0	9.1	9.0	7.5	9.7
No follow-up	0.5	44.5	45.7	44.6	46.0	44.8	44.9	44.6	45.2	40.3

Avg. average, *GP-in* general practitioner in-network, *GP-out* general practitioner out-of-network, *MH prof-in* mental health professional in-network, *MH prof-out* mental health professional out-of-network, *prob.* probability, *psych-in* psychiatrist in-network, *psych-out* psychiatrist out-of-network, *PS-in* psychiatrist in-network, *PS-out* psychiatrist out-of-network, RX *prescription*

The data source was the Truven Health MarketScan® Commercial Claims and Encounters Database, 2012–2013

16.5%) and increased the predicted probability of no follow-up office visit by 1.5% (from 44.5 to 46.0%).

Instead of an NL model, McFadden's conditional logit (CL)[20] was used to test the robustness of the results. Like NL, CL is an integrated random utility model; unlike NL, CL assumes that the choices are independent and there is no shared error term for provider type. Although the CL model produced results similar to those from the NL model (results are available on request), a statistically significant likelihood ratio test [19, 21] showed a correlated error term within provider type; therefore, NL regression was the preferred functional form for this study.

Discussion

This study found that there continues to be a gap in access to mental health care for individuals newly diagnosed with mental illness. In this study sample, 44.5% of individuals with employer-sponsored health insurance who were newly diagnosed with a mental illness did not receive any outpatient office visit follow-up care within 3 months, and an additional 9% received only prescription medication treatment. Those percentages were even higher for individuals in areas with a low supply of psychiatrists per capita.

Patients with an EPO or HMO plan more often relied on in-network general practitioners for treatment and were slightly less likely to receive no treatment than patients with other types of health plans. Financial burden on the patient can be a barrier to treatment, but a $25 increase in out-of-pocket costs had only a marginal impact on patients' treatment choices.

This is the first known study that estimates how psychiatrist supply, SMI diagnosis, out-of-pocket cost, and health insurance type are associated with out of network use for commercially insured patients. Of newly diagnosed patients, 12% who saw a psychiatrist had at least one out-of-network psychiatrist visit. This percentage is three times as large as the percentage of patients who went out of network to receive mental health care from a general practitioner (4%). Consistent with the results of this study, other studies have reported that an estimated 8 to 18% of those seeking mental health treatment use out-of-network care.[22–24]

Findings from this study supported the hypothesis that patients with SMI and those who live in low-psychiatrist-supply areas are more likely to use an out-of-network provider, but the impact was modest. If HMOs are considered a type of narrow network plan, our finding that patients in an EPO or HMO were less likely to receive no treatment but had more limited use of psychiatrists may have implications for what to expect as narrow, primary-care-focused network plans proliferate.

The Mental Health Parity and Addiction Equity Act (MHPAEA) requires private health insurance plans to cover mental health and substance use disorder services at a level that is equal to those of physical health services.[25] The law also extends parity to out-of-network services. If parity compliance leads to a large reduction in out-of-pocket costs for mental health, other determinants such as provider availability, severity of illness, patient characteristics (e.g., demographics and attitudes toward seeking treatment), and provider characteristics (e.g., willingness to accept insurance) may be more associated with treatment choices.[26, 27] Further research could include race/ethnicity and other patient-level sociodemographic factors that could not be incorporated into the present study because of data limitations. For example, previous research has cited patients' perceived need and social stigma as barriers to receiving behavioral health treatment.[26–29] In addition, patient financial resources is a well-documented factor in mental-health-seeking behavior.[30, 31] Literature is emerging on mental health training for primary care providers to address access issues for families with low income.[32] Future research may include testing the association between income and choice of a primary care physician as the mental health provider.

This study found that patients who live in low-psychiatrist-supply areas are less likely to go to a psychiatrist or mental health professional, whether inside or outside the health plan network. Of the 46% of individuals with a new mental health diagnosis who received follow-up care, only 14% saw

a psychiatrist; most received treatment from a general practitioner or other mental health provider, which could be appropriate depending on the individual's condition. This finding shows that psychiatrists' participation in health plan networks appears to be an important factor in treatment choices. In their 2014 study, Bishop and colleagues reported that a lower percentage of psychiatrists accepted private insurance (55.3%) compared with other office-based providers (88.7%).[12] The present study found that psychiatrist availability had a statistically significant impact on patients' follow-up with a provider.

The 13.4% of patients with SMI had higher predicted probability of receiving treatment, were more likely to go to a psychiatrist, and were only moderately more likely to go to an out-of-network psychiatrist than were those in the overall sample. The in-network use findings are consistent with previous studies reporting that individuals with SMI have higher use of ambulatory services for mental health.[33]

A strength of this study was use of the MarketScan database, which contains data on all health care received for more than 43 million privately insured individuals and can be linked to other data sources, such as the Area Health Resources Files. MarketScan also includes an indicator that identifies the network participation status of the treating provider, allowing for this differentiation of the treatment received.

This study had some limitations. First, although instituting a clean period of 1 year provided an adequate assumption of new illness or newly exacerbated symptoms, patients may have had encounters with the mental health care system prior to 2012 that were not observed. Second, the analysis used claims data. Claims data do not contain information on the extent to which provider choice was driven by clinician referral or peer recommendation. Third, because of the small sample size associated with each employer/health plan, the actual out-of-pocket costs associated with treatment choices at the employer/health plan level could not be calculated reliably, and it was necessary to use employer level as a proxy for all health plans offered by the employer. Fourth, psychiatrists per 100,000 individuals were measured at the county level. Shortages do not stop neatly at county boundaries and thus may be imperfect measures. Use of a larger area, such as core based statistical area (CBSA), possibly could capture more of the health care market but might be less precise in reflecting provider availability for each individual. A sensitivity analyses was performed using the mental health shortage area definition used by HRSA. Results were similar to those using the number of psychiatrists per 100,000 to define shortage, even though the HRSA definition was based on miles needed to travel for care and population need for mental health professionals. Fifth, the study population was composed of individuals with private insurance and only claims submitted for reimbursement were captured. Results may not be generalizable to the uninsured or other payer populations. Finally, the present study could not explore all factors associated with treatment choice because of limitations in the variables available in the database. In addition, to the sociodemographic factors discussed previously, this study did not look at how total healthcare expenditures vary by patients' choice of provider type. If patients in shortage areas have higher overall costs, policymakers could be further motivated to explore ways of addressing the shortage, potentially through novel ways of providing care such as through telehealth.

Implications for Behavioral Health

This study found that treatment choice is associated with psychiatrist availability in a patient's geographic area and by severity of the mental disorder. Policymakers should consider ways to increase access in shortage areas, particularly when enacting policies that may increase demand for mental health care. Mental health conditions are often first recognized by a general practitioner then go untreated or are not treated adequately.[34] General practitioners may be a

valuable source of care in shortage areas if provided with evidence-based guidelines for mental health treatment in primary care settings, assistance with care management, and reimbursement for extended services and training.[35]

Recent findings highlight the role that provider reimbursement and insurance design can have on patients' use of mental health services. For example, Mark et al. (2017a)[36] report that the 2013 CPT revision was associated with a 10% reduction in the billing of psychotherapy by psychiatrists paid by private insurance. Under commercial insurance, psychiatrists are reimbursed less in-network for some commonly billed services for treating patients with behavioral health conditions than are other providers (e.g., non-psychiatrist medical doctors)[37] Yet psychiatrists are reimbursed more out-of-network for those same services than other providers and thus are more likely to provide those services out-of-network than other providers. The higher out-of-pocket costs for patients associated with receiving mental health services out-of-network can result in potential access issues. To address the shortage of psychiatrists and encourage more psychiatrists to participate in networks, payers should consider increasing their in-network and out-of-network reimbursement for psychiatrists and other providers of behavioral health services. In addition, providing patients with user-friendly information on the behavioral health services available to them (and the out-of-pocket costs associated with the use of in-network and out-of-network providers) may help them make the best decisions when considering their choice of provider for their behavioral health care.

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Compliance with Ethical Standards

Conflict of Interest   The authors declare that they have no conflict of interest.

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