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RESEARCH ARTICLE

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Public insurance expansions and mental health care availability

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Abstract

Objective: To provide new evidence on the effects of large-scale public health insurance expansions, associated with the Affordable Care Act (ACA), on the availability of specialty mental health care treatment in the United States. We measure availability with the probability that a provider accepts Medicaid.

Data Source/Study Setting: The National Mental Health Services Survey (N-MHSS) 2010-2018.

Study Design: A quasi-experimental differences-in-differences design using observational data.

Data Collection: The N-MHSS provides administrative data on the universe of specialty mental health care providers in the United States. Response rates are above 90 percent in all years. Data cover 85 019 provider/year observations.

Principal Findings: ACA-Medicaid expansion increases the probability that a provider accepts Medicaid by 1.69 percentage points, 95 percent confidence interval: [0.0017,0.0321], which corresponds to an increase from 87.27 percent pre-expansion to 90.27 percent postexpansion in expansion states or a 1.94 percent increase. We observe spillovers to Medicare, although this finding is sensitive to specification.

Conclusions: This study provides evidence on the impact of ACA-Medicaid expansion on accepted forms of payment for specialty mental health care treatment. Findings suggest that expansion increases availability of providers who deliver valuable care for enrollees with severe mental illness. These findings may help policy makers reflecting on the future directions of the US health care delivery system.

KEYWORDS

availability, health care, mental illness, public insurance

1 | INTRODUCTION

The American Psychiatric Association defines mental illness as "health conditions involving changes in thinking, emotion, or behavior" that are "associated with distress and/or problems functioning in social, work, or family activities."[1] Common mental illnesses are depression, anxiety, and mood disorders.[2] In 2017, an estimated 18.9 percent of US adults aged 18 or older, or 46.6 million people, in the United States met diagnostic criteria for any mental illness.[3]

Mental illnesses place a great burden on affected individuals and their families through increased health care use,[4] poor health,[5,6] and lower employment.[7] These costs extend to society at large. The annual financial burden of mental illness to the US economy is estimated to be $518B.[8] These conditions are most prevalent among low-income and uninsured individuals which suggests that American taxpayers will finance a large share of the costs associated with mental illnesses through the funding of public insurance programs, free treatment paid through government grants and contracts, and cost-shifting.[9]

While mental illnesses are costly to both individuals and society, effective treatment is available. Primary care providers can prescribe medications and deliver counseling, mental health care providers (eg, psychiatrists) deliver psychopharmacological and psychosocial treatment in outpatient settings, and specialty inpatient and outpatient providers offer a range of care options.[10] Specialty care accounts for 70 percent of all mental health care treatment spending in the US[11] and is therefore an important setting to study.

Despite the established effectiveness of mental health care treatment, many individuals who could benefit from such treatment do not receive it. According to recent data from the National Survey on Drug Use and Health (NSDUH), one in four adults who meet diagnostic criteria for mental illness reported an unmet need for mental health care treatment in the past year.[3] The most commonly cited barrier to receiving care is treatment cost.[3] Further, unmet need for mental health care treatment is particularly high for low-income and uninsured individuals.[12]

Medicaid is a federal-state program and the primary public insurance program that finances health care services for the poor in the US. Based on comparisons of plans, Medicaid more generously covers mental health care treatment services than most private insurers.[13] In 2010, the US federal government implemented the Affordable Care Act (ACA).[14,15] The ACA substantially expanded Medicaid eligibility to lower-income Americans.[16] The ACA listed mental health services as one of the ten essential benefits that health plans must cover, although the exact benefits covered were not defined.[13] Further, the Act mandated mental health treatment would be covered at parity in terms of cost-sharing, service limitations, and nonquantitative management techniques with general medical benefits. These changes applied to all Medicaid plans in expansion and nonexpansion states. Our research design, differences-in-differences (DD), will identify effects for newly Medicaid-eligible populations following expansion.

Pre-expansion, most state Medicaid programs covered long-term services, residential care, and intensive case management for mental health conditions.[13] These services are also covered post-expansion by expansion and nonexpansion states among traditional Medicaid populations. The ACA-Medicaid expansion stipulates that newly eligible enrollees receive a minimum "benchmark" coverage package approximately equivalent to the standard medical procedures commonly offered under employer-sponsored plans.[13] Each expansion state has a benchmark plan that it uses to define an essential benefits package.[13] States can provide additional services but are not mandated to do so. As a result, covered mental health care benefits for traditional and newly eligible enrollees are somewhat heterogeneous across states.[13,17]

The large increase in the number of individuals newly eligible for Medicaid, 12.7M nationally in 2017,[18,19] and growth in covered services could spur greater acceptance of this insurance among specialty mental health care providers. While Medicaid expansion and associated increases in acceptance of this insurance form has the potential to open up additional funding sources for states pursuing this policy, there are factors that may dilute this effect. Medicaid reimbursement rates have historically been lower than other insurers and enrollees may be more costly to treat due to their lower health status, both of which have stifled provider participation in this market.[20] There are also possible unintended and negative consequences on care quality for patients and overall funding available to providers of expansion.[21] States may emphasize provision of Medicaid-reimbursable services at the expense of offering services that best meet patient needs. Programs targeting other populations (eg, the uninsured) may receive less funding, which could lead to worse outcomes for the target groups. Finally, Medicaid may crowd-out other funding sources (eg, state contracts and grants to treat low-income patients).

We present an examination of the effect of ACA-related Medicaid expansions on availability of specialty mental health care treatment during the period 2014-2018, as measured by provider acceptance of Medicaid.[22] We test for spillovers to provider acceptance of other payment forms and charity care provision.

What is Already Known on this Topic

- The Affordable Care Act (ACA) expanded Medicaid coverage to millions of previously uninsured low-income adults ("newly eligibles").
- The expanded Medicaid coverage included mental health care treatment.
- Newly eligibles have elevated need for mental health care treatment.
- Many mental health care providers do not accept Medicaid which prevents enrollees from using their insurance to finance mental health care treatment.
- The ability of newly eligibles to access mental health care treatment is unknown.

What This Study Adds

- We studied the effect of the ACA-Medicaid expansion on the probability that a specialty mental health care facility accepts Medicaid insurance as a form of payment.
- Specialty mental health care facilities include hospitals or specialized facilities that offer outpatient and/or residential treatment.
- We found that ACA-Medicaid expansion increased the probability that a specialty mental health care provider accepts Medicaid coverage.
- We also found that the ACA-Medicaid expansion did not "crowd-out" acceptance of other forms of payment (ie, private coverage, Medicare, and self-pay) or provision of charity care.

2 | METHODS

2.1 | Policy background: Medicaid

Medicaid covered roughly 66M individuals in December 2018.[23] Prior to the ACA, states had substantial flexibility to determine which individuals were eligible for coverage and which treatments were covered. After the ACA, the federal government set broad guidelines for required minimum treatment coverage and also offered states generous subsidies if they expanded coverage to include all adults with income up to 138 percent of the Federal Poverty Level. Prior to expansion, most states did not cover nondisabled childless adults. As of June 2020, 36 states and DC have expanded.[24]

A large literature explores the effects of ACA-Medicaid expansion on insurance coverage and general health care service use. These studies document postexpansion reductions in the uninsured rate,[16,25,26] and increases in coverage, access to care, and service use.[16,27] The literature does not suggest substantial crowd-out of private insurance.[16,25,28,29]

Several studies explore the effects of pre-ACA-Medicaid expansion on mental health care treatment use. Golberstein and Gonzales[30] use data from the 1998-2011 Medical Expenditure Panel Survey and show that Medicaid expansions reduce out-of-pocket spending on mental health care services among low-income adults but do not influence service use. Using 2004-2012 NSDUH data, Wen et al[31] find that Medicaid expansions reduce reports of unmet treatment need and increase the probability of receiving mental health care treatment. Baicker et al[32] leverage experimental variation in Oregon and show that individuals randomly assigned to Medicaid eligibility use more psychotropic medications than controls.

Several studies show that ACA-Medicaid expansion increases mental health care treatment use.[33-35] Using 2005-2014 NSDUH data, Creedon and Cook[33] explore the early effects of ACA-Medicaid expansions and state health insurance exchanges on mental health care treatment access among those in need. The authors show that treatment increases among people with serious psychological distress following ACA implementation. This study uses a before-after design, thus isolating expansion effects from other time-varying factors is challenging.

Ghosh et al[35] use data from an all-payer pharmacy transactions database over the period 2013-2015 and find that psychotropic medications increase postexpansion by 19 percent in expansion states relative to nonexpansion states. Using administrative data on Medicaid-financed prescription medications, Maclean et al[34] study the effects of expansions on psychotropics 2011-2017. Their findings suggest that enrollee psychotropic prescriptions increase postexpansion by 22 percent in expansion states compared to nonexpansion states, and effects increase over time. Finally, Wen et al[36] document in the 2010-2015 National Ambulatory Medical Care Survey no change in the probability that psychiatrists accept Medicaid postexpansion.

We contribute to this literature in two important ways. We consider the supply-side of specialty mental health care availability and whether expansion increased patients' ability to pay for specialty care. To the best of our knowledge, no study, using either pre- or post-ACA data, has explored these questions.

2.2 | Data

We use the Substance Abuse and Mental Health Services Administration's (SAMHSA) National Mental Health Services Survey (N-MHSS). These data have recently been made available to researchers, and thus, our use of these data is novel. The N-MHSS is designed to collect data on all US specialty mental health care treatment providers known to SAMHSA. Specialty treatment settings include psychiatric hospitals, general hospitals with a psychiatric unit, residential treatment centers, day treatment, partial hospitalization mental health facilities, outpatient clinics, and community mental health care centers.

The N-MHSS is the only comprehensive source of data on the specialty mental health care treatment delivery system reported by publicly and privately operated providers. Data are not collected from military providers, individual private/small group practices, and jails/prisons. Information collected from providers in the N-MHSS, in addition to allowing the Federal government to monitor specialty mental health care treatment provision, is used to maintain the two most widely used directories for patients seeking specialty mental health care treatment in the United States: SAMHSA's online Behavioral Health Treatment Services Locator and SAMHSA's National Directory of Mental Health Treatment Facilities. By using the N-MHSS, we are able to study expansion effects across the near universe of known, licensed specialty mental health care treatment US providers.

N-MHSS provides a "snapshot" of providers' operations on a survey day, which is in late April. The data are available in 2010, 2012, 2014, 2015, 2016, 2017, and 2018. Response rates are above 90 percent. N-MHSS is an unbalanced panel. SAMHSA does not supply provider identifiers so we cannot include provider fixed effects in regression models. Given that our treatment variable is defined at the state level, the inability to include provider fixed effects should not lead to substantial bias in estimated regression coefficients.[37] We acknowledge, however, that we cannot separately identify the impact of existing providers accepting Medicaid from providers entering/exiting the market or consolidation; therefore, our estimates represent the combination of these effects and true expansion effects. We include 85 019 provider/year observations. Providers operating in US territories are excluded.

2.3 | Outcomes

Our outcomes are indicators for insurance acceptance: Medicaid, Medicare, and private. These variables measure provider participation in particular markets and availability of specialty mental health care. Ideally, we would like to include all other forms of public

insurance; however, the N-MHSS categories for non-Medicaid and non-Medicare public plans change across survey years and we cannot create a reliable measure over time.

The uninsured market includes two patient types: those who self-finance care and those who cannot pay and whose care is likely subsidized by providers. We construct two measures that plausibly capture care delivered to the uninsured patients: (a) a measure of cash or self-pay acceptance and (ibi) an indicator for discounted care which includes the use of price discounts, proxied by the use of a sliding fee scale, and an indicator of free/uncompensated care offered to patients who cannot afford to pay.[38]

2.4 | Medicaid expansion

Our source of variation is state ACA-Medicaid expansions that occurred 2014-2018. Table S1 lists expansion states and effective dates.[39] The majority of expansions occurred January 1, 2014.[1] We match effective dates to the N-MHSS based on survey day (April 30th) and year.

2.5 | Empirical model

Our "baseline" DD model is outlined in Equation (1):

$$A_{i,s,t} = \alpha_0 + \alpha_1 \mathrm{Ex}_{s,t} + P_{i,s,t}\alpha_2 + X_{s,t}\alpha_3 + \theta_s + \tau_t + \varepsilon_{i,s,t} \quad (1)$$

$A_{i,s,t}$ is an indicator for acceptance of a payment form or provision of discounted care by provider i in state s in year t. $\mathrm{Ex}_{s,t}$ is an indicator for whether a state s expanded Medicaid by April 30th of year t. $P_{i,s,t}$ is a vector of provider-level variables. $X_{s,t}$ is a vector of state-level characteristics. θ_s and τ_t are vectors of state and year fixed effects. $\varepsilon_{i,s,t}$ is the error term. We use a yearly cross-sectional sample that pools providers in different states within years.

Provider-level characteristics include ownership status (for-profit and nonprofit/government) and setting (outpatient, residential, and hospital). State-level demographics are collected from the monthly Current Population Survey (CPS) (age, gender, race/ethnicity, foreign birth, and education); we aggregate to the annual level. We control for state-level policies: Medicaid health homes for serious mental illness,[40] Medicaid Institutions of Mental Disease (IMD) waivers,[41] and SAMHSA mental health treatment and prevention block grants. Finally, we control for per capita income (2018 dollars), poverty and unemployment rates, and governor political party.[42]

We estimate linear probability models (LPMs) and report 95% confidence intervals that account for within-state clustering.[43] To test whether expansion effects change over time, we divide the postexpansion period into four subperiods in a "dynamic model." We construct indicators for the expansion year, and one, two, three, and four years postexpansion.

The primary assumption of DD models is that the treatment and comparison groups would have followed similar trends in outcomes had the treatment group not been treated ("parallel trends"). This assumption cannot be tested as the counterfactual for the treated group in the postperiod is not observed. We attempt to provide suggestive evidence by estimating an event study.[44] In the event study, we first center the data on the event (ie, expansion) for expansion states. We next calculate the time-to-event as the difference between the survey year and the event year for expansion states. We create bins corresponding to five or more years pre-expansion (omitted category), three to four years pre-expansion, one to two years pre-expansion, year of the expansion, one year postexpansion, two years postexpansion, three years postexpansion, and four years postexpansion. We code nonexpansion states as zero for all leads and lags.[45] The event study model is otherwise identical to Equation (1). The estimates for the leads can reveal differential pretrends between expansion and nonexpansion states, and pre-implementation effects. We combine the pre-event period into two-year bins as we have only 2 years of data (2010 and 2012) for states that expanded January 1, 2014. Using single-year bins in the pre-event period leads to very small cell sizes.

Given established differences across providers with different ownership statuses,[38] we estimate separate models for nonprofits/government and for-profit providers. For instance, for-profits may be more likely to respond to incentives to maximize profits than nonprofits/government providers. On the other hand, some health care scholars argue that the objective functions of providers with different ownership statuses are more similar.[46,47] Further, we estimate separate models by setting: outpatient, residential, and hospital. Due to the IMD exclusion, federal government Medicaid funds cannot be used to pay for mental health treatment received in residential and hospital settings in which 16 or more beds are allocated to mental health and/or substance use disorder treatment. Thus, we expect differential effects by setting.

We report a range of different specifications to ensure that our results are stable. First, we estimate probit and logit models. Nonlinear models may be appropriate with a binary outcome. Second, we compare results using different sets of covariates to ensure that our results are robust to alternative control for between-state heterogeneity: We estimate a model with only state and year fixed effects, and progressively add provider characteristics, state demographics, and division-by-year fixed effects. Third, we lag the expansion variable one year to allow time for providers to respond to the policy change (eg, purchase electronic billing systems). Fourth, we sequentially exclude each expansion state. The purpose of this exercise is to ensure that our results are not driven by the experiences of particular states. Fifth, we aggregate the data to the state-year level and regress the probability of expanding Medicaid on provider characteristics (aggregated to the state-year level), state characteristics, state fixed effects, and year fixed effects which allows us to test whether the conditional-independence assumption (CIA) holds.[37,48] Sixth, we explore the extent to which our results are driven by provider self-selection. Expansion effects might be driven by new providers entering the market in expansion states or providers changing ownership or setting. In particular, we regress

the number of providers in a state, the probability of being a for-profit provider, and the probability of being an outpatient provider on Medicaid expansion. Because we lack provider identifiers, we acknowledge that we are not able to fully explore this issue. Seventh, we replace the expansion indicator with the number of months since expansion, which allows us to use additional variation in expansion status. Finally, we exclude likely IMD providers (hospitals and residential facilities with 16 or more beds allocated to mental health care treatment). Such providers, due to the IMD exclusion, may be less able to accept Medicaid payments and therefore may be less affected by expansion. Results are stable across the sensitivity checks that we apply.

3 | RESULTS

3.1 | Summary statistics

Table 1 reports summary statistics. In expansion states, 87.27 percent accept Medicaid in the pre-expansion period, 75.76 percent accept private insurance, 67.10 percent accept Medicare, 82.91 percent accept cash or self-payments, and 76.23 percent accept discounted care. Acceptance rates for nonexpansion states in the pre-expansion period are similar with two exceptions: Private insurance and cash or self-payments acceptance are more widespread within nonexpansion states (a difference of five percentage points in both instances). Thus, Medicaid acceptance is high prior to ACA-related expansion. Table S2 reports the number of providers per year in expansion and nonexpansion states.

The unadjusted DD suggests that expansion states are more likely to accept Medicaid (2.67 percentage points [ppts] or 3.06 percent) after the expansion but less likely to accept private insurance (1.14 ppts or 1.50 percent). They are also more likely to accept Medicare (3.14 ppts or 4.68 percent) but less likely to accept discounted care (1.09 ppts or 1.43 percent). We observe no change in the probability of accepting self-pay. The unadjusted DD likely captures the effect of confounders which we account for in our adjusted models. Characteristics of expansion and nonexpansion states are listed in Table S3.

3.2 | DD results

Table 2 Panel A reports DD regression results for the effect of expansion on payment acceptance and charity care provision generated in the baseline and dynamic models. We find statistically significant evidence that expansion leads to increases in the probability that a provider accepts Medicaid as a form of payment. In the baseline model, postexpansion we observe a 1.69 ppts (1.94 percent) increase in the probability of Medicaid acceptance in expansion states relative to nonexpansion states. Results of the dynamic model suggest that effects may increase over time (Panel C): The probability of Medicaid acceptance increases from 1.32 ppts (1.51 percent in the year of expansion) to 2.23 ppts (2.56 percent) four years postexpansion. However, 95 percent confidence intervals surrounding coefficient estimates overlap; thus, we do not wish to overstate escalating effects over time.

We find evidence that the probability of Medicare acceptance *increases* by 2.01 ppts (3.00 percent) postexpansion. We hypothesize some potential mechanisms. First, there may be spillover effects from Medicaid to Medicare, both of which are public insurance programs. For instance, infrastructure acquired to bill Medicaid could be used to charge Medicare. Such spillover effects have been documented in previous studies.[49,50] Second, some individuals are eligible for both Medicaid and Medicare ("dual eligibles"), and the increase in Medicare acceptance may be driven by these enrollees. Third, there may be reporting error as N-MHSS is a survey.[51,52] The fact that the Medicare estimate is larger (both in absolute and relative terms) than the Medicaid estimate is also interesting. Of relevance to this finding, the ACA did not change Medicare eligibility and most Medicare plans are not required to be compliant with Mental Health Parity and Addiction Equity Act (MHPAEA), nor did the ACA specifically target Medicare mental health services coverage. However, there was at least one potentially important coincident change to the

TABLE 1 Accepted forms of payments and provision of discounted care by expansion status and time period: National Mental Health Services Survey 2010-2018

Sample	Expansion states 2010-2012	Expansion states 2014-2018	Nonexpansion states 2010-2012	Nonexpansion states 2014-2018	Unadjusted DD model
Medicaid	0.8727	0.9027	0.8926	0.8959	0.0267
Private insurance	0.7576	0.7918	0.8052	0.8508	−0.0114
Medicare	0.6710	0.7033	0.7011	0.7020	0.0314
Cash or self-pay	0.8291	0.8367	0.8843	0.8882	0.0037
Discounted care	0.7623	0.7319	0.7416	0.7221	−0.0109
Observations	16 537	42 487	7523	18 472	-

Note: The unit of observation is a provider in a state in a year. Data are unweighted. Expansion states = expanded Medicaid with ACA. Nonexpansion states = did not expand Medicaid with ACA. DD = differences-in-differences. Discounted care = free care provided to patients who cannot pay and/or use of a sliding fee scale. National Mental Health Services Survey data are available in 2010, 2012, 2014, 2015, 2016, 2017, and 2018. US territories are excluded. Unadjusted DD calculated as follows: (expansion 2014-17 – expansion 2010-12) – (nonexpansion 2014-17 – nonexpansion 2010-12).

TABLE 2 Effect of ACA-Medicaid expansions on accepted forms of payments and provision of discounted care using a differences-in-differences model: National Mental Health Services Survey 2010-2018

Outcome	Medicaid	Private	Medicare	Cash or self-pay	Discounted care
Proportion in expansion states, 2010-12	0.8727	0.7576	0.6710	0.8291	0.7623
Panel A: Baseline model					
Expand	0.0169**	−0.0011	0.0201*	0.0025	−0.0070
Medicaid	[0.0017,0.0321]	[−0.0194,0.0172]	[−0.0014,0.0415]	[−0.0114,0.0165]	[−0.0280,0.0141]
Observations	82 283	82 002	81 716	81 984	81 684
Panel B: Dynamic model					
Expansion year	0.0132**	−0.0029	0.0242**	0.0025	−0.0084
	[0.0011,0.0253]	[−0.0201,0.0142]	[0.0015,0.0469]	[−0.0122,0.0172]	[−0.0301,0.0132]
1 y post expansion	0.0214**	−0.0005	0.0195	0.0010	−0.0073
	[0.0051,0.0377]	[−0.0202,0.0191]	[−0.0054,0.0445]	[−0.0143,0.0162]	[−0.0296,0.0150]
2 y post expansion	0.0134	−0.0030	0.0114	0.0028	−0.0030
	[−0.0066,0.0335]	[−0.0240,0.0181]	[−0.0126,0.0353]	[−0.0138,0.0194]	[−0.0275,0.0216]
3 y post expansion	0.0231**	0.0016	0.0140	0.0031	−0.0066
	[0.0009,0.0453]	[−0.0224,0.0256]	[−0.0133,0.0413]	[−0.0165,0.0227]	[−0.0327,0.0195]
4 y post expansion	0.0223	0.0101	0.0234	0.0077	−0.0060
	[−0.0057,0.0503]	[−0.0158,0.0360]	[−0.0124,0.0592]	[−0.0141,0.0294]	[−0.0369,0.0248]
Observations	82 283	82 002	81 716	81 984	81 684
Panel C: Drop 2014 expansion states					
Expand	0.0054	−0.0076	−0.0152	0.0057	−0.0069
Medicaid	[−0.0106,0.0215]	[−0.0309,0.0156]	[−0.0444,0.0141]	[−0.0174,0.0288]	[−0.0309,0.0172]
Observations	33 983	33 904	33 819	33 916	33 679

Note: The unit of observation is a provider in a state in a year. Data are unweighted. "Expand Medicaid" is an indicator coded one if the state has expanded Medicaid in a state in a year and zero otherwise. All models estimated with a linear probability model and control for provider characteristics, state characteristics, state fixed effects, and year fixed effects. 95% confidence intervals account for within-state clustering and are reported in square brackets. Discounted care = free care provided to patients who cannot pay and/or use of a sliding fee scale. National Mental Health Services Survey data are available in 2010, 2012, 2014, 2015, 2016, 2017, and 2018. The dynamic model divides the postexpansion year into five periods: the year of the expansion, one year postexpansion, two years postexpansion, three years postexpansion, and four or more years postexpansion.

***, **, and * = statistically different from zero at the 1%, 5%, and 10% level.

Medicare program. Prior to 2008, Medicare covered only 50 percent of outpatient mental health services while covering 80 percent of other types of outpatient services. Under a provision of the 2008 Medicare Improvements for Patients and Providers Act (MIPPA), this coverage disparity was phased-out over five years with full parity for outpatient mental health services achieved in January 2014, which could explain our findings for Medicare. We note that Medicare providers could have entered the specialty market and/or consolidated facilities in this market with the full phase-in of MIPPA. To investigate the possibility that our Medicaid expansion indicator is picking up coincident Medicare changes that occurred in January 2014, we exclude all 2014 Medicaid expansion states and re-estimate our regression model (Table 2 Panel B). We lose statistical power as we use policy variation from just eight expansion states, but the coefficient estimate signs are stable, with the exception of the Medicare acceptance which becomes negative. We also bootstrap the difference between the Medicaid and Medicare coefficient estimates using a parametric bootstrap with 500 repetitions. The difference is not statistically distinguishable from zero (results available on request); thus, we are reluctant to over-interpret heterogeneity. Nonetheless, we note that our findings are interesting and somewhat unexpected. Future studies could more rigorously explore how Medicaid expansion may influence the Medicare program. We find no statistically significant evidence that expansion leads to changes in private market participation, self-pay, or provision of discounted care.

3.3 | Validity

Table S4 and Figure S1 report event study results. We cannot reject the null hypothesis that expansion and nonexpansion states trended similarly in terms of provider acceptance of Medicaid, private insurance, and cash or self-pay as evidenced both by lack of both independent and joint statistical significance of the leads. We observe some evidence of differential pretrends for Medicare: the coefficient estimate on the −2/−1 lead is statistically significant at

the 10 percent level; we note that this finding could capture anticipation effects among providers. We note that differential pretrends limit our ability to interpret Medicare effects causally. Therefore, the increase in Medicare acceptance that we document in Table 2 may, at least partially, capture differential pretrends. We observe a similar coefficient estimate for the discounted care −4/−3 lead.

3.4 | Heterogeneity

Table 3 reports results stratified by ownership. While we note that the coefficient estimate on the Medicaid expansion in the probability of Medicaid acceptance is only precisely estimated in the sample of nonprofits/government providers, the pattern of results is similar across the samples (eg, the coefficient estimate is 0.0294 in the for-profit sample, which implies an 3.76 percent increase, and 0.0138 in the nonprofit/government sample, which implies an 1.56 percent increase). Further, we interact the Medicaid expansion indicator with an indicator for for-profit status and the coefficient estimate on the interaction term is not statically significant. All providers increase Medicare acceptance postexpansion although the estimates do not reach statistical significance. For-profits *increase* provision of discounted care postexpansion, suggesting that charity care is a normal good for such providers.[53] We interact for-profit status with the expansion indicator; results are not appreciably different in that we do not observe evidence of substantial heterogeneity. An exception is that the interaction in the discounted care specification is positive and statistically distinguishable from zero.

For-profits are less likely to offer discounted care than other providers (nonprofit and government providers may be more likely to deliver this care as treating vulnerable populations is often part of their mission statement); thus, the increase in income from Medicaid patients may prompt for-profits to increase provision of this normal good. Further, Medicaid may not cover all services offered by for-profits and, following expansion, for-profits may increase provision of discounted care (which we proxy as providing free care to all patients and/or the use of a sliding fee scale) to allow the newly covered enrollees to use Medicaid for some services and to "pay what they can" for services not covered by Medicaid. This practice may allow for-profits to retain current Medicaid patients and/or attract either new Medicaid patients or new Medicaid-eligible patients who can be enrolled with the assistance of the provider. Finally, in unreported analyses available on request, we estimate a variant of the discounted care regression in the for-profit sample in which we

TABLE 3 Heterogeneity by ownership status in the effect of ACA-Medicaid expansions on accepted forms of payments and provision of discounted care using a differences-in-differences model: National Mental Health Services Survey 2010-2018

Outcome	Medicaid	Private	Medicare	Cash or self-pay	Discounted care
For-profits					
Proportion in expansion states, 2010-12	0.7821	0.8102	0.6181	0.8764	0.4831
Expand	0.0294	0.0015	0.0272	−0.0093	0.0354*
Medicaid	[−0.0133,0.0721]	[−0.0356,0.0386]	[−0.0193,0.0736]	[−0.0388,0.0203]	[−0.0068,0.0777]
Observations	13 522	13 503	13 463	13 535	13 686
Nonprofits/government					
Proportion in expansion states, 2010-12	0.8828	0.7518	0.6769	0.8238	0.7935
Expand	0.0138*	−0.0019	0.0184	0.0068	−0.0180
Medicaid	[−0.0002,0.0277]	[−0.0212,0.0175]	[−0.0054,0.0422]	[−0.0088,0.0223]	[−0.0424,0.0064]
Observations	68 761	68 499	68 253	68 449	67 998
All providers					
Proportion in expansion states, 2010-12	0.8727	0.7576	0.6710	0.8291	0.7623
Expand	0.0173*	−0.0071	0.0171	−0.0025	−0.0165
Medicaid	[−0.0006,0.0353]	[−0.0300,0.0158]	[−0.0099,0.0440]	[−0.0176,0.0126]	[−0.0402,0.0072]
*For-profit status	−0.0029	0.0377	0.0187	0.0314	0.0579*
	[−0.0594,0.0535]	[−0.0232,0.0985]	[−0.0494,0.0867]	[−0.0082,0.0709]	[−0.0080,0.1238]
Observations	82 283	82 002	81 716	81 984	81 684

Note: The unit of observation is a provider in a state in a year. Data are unweighted. "Expand Medicaid" is an indicator coded one if the state has expanded Medicaid in a state in a year and zero otherwise. All models estimated with a linear probability model and control for provider characteristics, state characteristics, state fixed effects, and year fixed effects. 95% confidence intervals account for within-state clustering and are reported in square brackets. Discounted care = free care provided to patients who cannot pay and/or use of a sliding fee scale. National Mental Health Services Survey data are available in 2010, 2012, 2014, 2015, 2016, 2017, and 2018.

***, **, and * = statistically different from zero at the 1%, 5%, and 10% level.

interact the expansion variable with an indicator for Medicaid acceptance. The coefficient estimate on the Medicaid expansion indicator is not statistically distinguishable from zero; thus, we cannot rule out the hypothesis that the discounted care findings are similar for those for-profits that do and do not accept Medicaid. However, we acknowledge that our exploration of this finding is not completely satisfactory and encourage more work on this question.

Table 4 reports results stratified by setting, and using the full sample and including interaction terms between the expansion indicator and treatment setting (we also include indicators for hospital and residential setting in the regression model but coefficient estimates are not reported). We observe that increases in the probability of Medicaid acceptance are driven by outpatient providers. We offer hypotheses for the observed heterogeneity in Medicaid acceptance effects by setting. First, patients with mild mental illness may experience the largest benefits from expansion which could explain why our effects appear to be driven by outpatient providers. Second, due to the IMD exclusion, hospitals and residential providers (the providers most likely to be IMDs) may be unable to accept Medicaid, thereby muting expansion effects. Our calculation suggests that 18 percent of analysis sample and 32 percent (62 percent) of N-MHSS hospitals (residential providers) are likely IMDs. Third, Maclean et al[34] show that psychotropic prescriptions obtained in outpatient settings increased in expansion states by 22 percent among Medicaid enrollees which suggests that enrollees are better able to access ambulatory care. This finding is in line with a broader ACA objective to better integrate mental health care treatment with general medical care.[54]

TABLE 4 Heterogeneity by treatment setting in the effect of ACA-Medicaid expansions on accepted forms of payments and provision of discounted care using a differences-in-differences model: National Mental Health Services Survey 2010-2018

Outcome	Medicaid	Private	Medicare	Cash or self-pay	Discounted care
Hospitals					
Proportion in expansion states, 2010-12	0.8896	0.9631	0.9118	0.9257	0.7057
Expand	0.0065	−0.0113	0.0004	−0.0003	0.0050
Medicaid	[−0.0146,0.0277]	[−0.0279,0.0053]	[−0.0173,0.0182]	[−0.0236,0.0229]	[−0.0395,0.0495]
Observations	14 145	14 339	14 241	14 078	12 822
Residential providers					
Proportion in expansion states, 2010-12	0.7696	0.4969	0.3673	0.6595	0.4994
Expand	0.0304	0.0187	0.0082	−0.0228	−0.0189
Medicaid	[−0.0188,0.0795]	[−0.0240,0.0613]	[−0.0441,0.0605]	[−0.0680,0.0225]	[−0.0741,0.0362]
Observations	12 293	11 979	12 083	12 195	12 523
Outpatient providers					
Proportion in expansion states, 2010-12	0.8929	0.7671	0.6820	0.8454	0.8388
Expand	0.0136*	−0.0066	0.0247	0.0032	−0.0090
Medicaid	[−0.0002,0.0275]	[−0.0322,0.0189]	[−0.0050,0.0544]	[−0.0124,0.0188]	[−0.0339,0.0160]
Observations	55 845	55 684	55 392	55 711	56 339
All providers					
Proportion in expansion states, 2010-12	0.8727	0.7576	0.6710	0.8291	0.7623
Expand	0.0239***	−0.0087	0.0294**	0.0041	−0.0150
Medicaid	[0.0062,0.0417]	[−0.0371,0.0197]	[0.0004,0.0584]	[−0.0173,0.0256]	[−0.0387,0.0087]
*Hospital	−0.0254	−0.0002	−0.0661***	−0.0120	0.0459*
	[−0.0630,0.0122]	[−0.0562,0.0557]	[−0.1131, −0.0191]	[−0.0514,0.0274]	[−0.0051,0.0969]
*Residential	−0.0169	0.0522	0.0177	0.0036	0.0045
	[−0.0650,0.0311]	[−0.0329,0.1373]	[−0.0617,0.0971]	[−0.0610,0.0682]	[−0.0664,0.0754]
Observations	82 283	82 002	81 716	81 984	81 684

Note: The unit of observation is a provider in a state in a year. Data are unweighted. "Expand Medicaid" is an indicator coded one if the state has expanded Medicaid in a state in a year and zero otherwise. All models estimated with a linear probability model and control for provider characteristics, state characteristics, state fixed effects, and year fixed effects. 95% confidence intervals account for within-state clustering and are reported in square brackets. Discounted care = free care provided to patients who cannot pay and/or use of a sliding fee scale. National Mental Health Services Survey data are available in 2010, 2012, 2014, 2015, 2016, 2017, and 2018.

***, **, and * = statistically different from zero at the 1%, 5%, and 10% level.

In terms of findings for private insurance acceptance, we hypothesize that outreach regarding both insurance coverage and integration efforts was more aggressive in expansion states, leading to the observed reduction in private insurance acceptance among hospitals in our sample.[55] Finally, we note that our conjectures are not fully satisfactory and encourage more work, using different datasets that offer better opportunities to assess within-provider changes, on these heterogeneous findings.

3.5 | Alternative specifications

Robustness check results are comparable to our main estimates. Table S5 shows results using probit and logit models. Table S6 compares the results of LPM regressions using different sets of controls. Table S7 presents results when the expansion variable is lagged one year. Results of models that sequentially exclude each expansion state are listed in Table S8. Table S9 shows results of regressing the probability of expanding Medicaid on provider characteristics (aggregated to the state-year level), state characteristics, state fixed effects, and year fixed effects. We find no evidence that the control variables predict the probability that a state expands which provides suggestive evidence that the CIA holds. Table S10 shows no relationship between expansion and the number of providers in a state, or the probability of being a for-profit or outpatient treatment provider, which offers suggestive evidence that our results are not fully driven by provider self-selection. However, we do not have sufficient data to fully explore this question. Table S11 shows results when replacing the expansion indicator with the number of months since expansion (scaled by 12 months). Table S12 presents results when the sample excludes likely IMD providers; Table S13 documents that there is no statistically significant relationship between expansion and the probability that a provider is a likely IMD.

4 | DISCUSSION

We provide evidence on the effects of ACA-Medicaid expansions on availability of specialty mental health care treatment. Our outcomes reflect providers' willingness to accept Medicaid and other major payment forms, a proxy for availability. To the best of our knowledge, we are the first to explore how Medicaid expansions, using pre- or post-ACA data, influence the propensity for specialty mental health care treatment providers to accept Medicaid.

This question is timely as policy makers are concerned that an insufficient number of providers are willing to accept Medicaid patients,[20] in particular mental health care treatment providers.[56] Mental illness prevalence is higher among Medicaid enrollees than other insured populations,[2] suggesting that availability of mental health care treatment is particularly important within the Medicaid-eligible population.

Our findings suggest that ACA-Medicaid expansions lead to increases in providers' acceptance of Medicaid insurance by 1.94 percent. We observe evidence of spillover effects to Medicare: Providers are more likely to accept this insurance postexpansion. We note, however, that this finding is sensitive to specification and there is evidence of differential pretrends in Medicare acceptance in expansion and nonexpansion states. We estimate a wide range of alternative econometric specifications, all of which generate similar estimates. We can use these estimates to predict that ACA-Medicaid expansions in all 19 states did not expand Medicaid by 2018. We predict that national expansion would increase the number of providers accepting Medicaid as a form of payment by three per state and 66 nationwide.[2]

An important question is what factors drive providers to accept Medicaid postexpansion. Expansion increases the number of patients with Medicaid coverage, with most of the increase attributable to previously uninsured individuals gaining Medicaid rather than "crowd-out" of private insurance.[16] Some uninsured patients who previously received charity or discounted care now have coverage offering a new funding stream to providers which in turn may have induced some providers to accept Medicaid. Some newly Medicaid-insured individuals may, with coverage, opt to seek treatment (through price effects, increased benefit awareness and integration with the health care delivery system, reduced stigma, etc), which may have prompted providers to accept Medicaid postexpansion. Canonical economic models of providers operating in mixed-payer markets predict that an increase in the size of the public market will lead to more providers participating in Medicaid.[57] Expansion may have reduced the expected costs to providers of accepting Medicaid. For example, Medicaid churn creates uncertainty in patient coverage for both patients and their providers. An objective of the ACA is to reduce the administrative burden of maintaining coverage among enrollees.[16] As patients have less difficulty remaining enrolled, providers may have greater certainty that they will continue to have Medicaid-enrolled patients from whom reimbursement payments may be received, thus inducing some providers to accept Medicaid.

Our findings are interesting given that the vast majority of providers accepted Medicaid prior to 2014: Only 12.73 percent of providers in expansion states do not accept Medicaid between 2010 and 2012. We find a 1.69 ppt increase in the probability of Medicaid acceptance in these states, suggesting that expansion reduces the share of providers *not* accepting this payment form from 12.73 percent to 11.04 percent or 13.28 percent. Inducing the remaining providers to accept Medicaid may require further outreach and/or additional incentives. Within primary care, the ACA increased the Medicaid reimbursement rate for many services between 2013 and 2014 to encourage participation in the program among providers.[58] Such targeted supply-side inducements could also be applied within the specialty mental health care market.

Our study has limitations. We are not able to explore effects on the intensive margin of provider participation. We suspect that omitting the intensive margin leads us to underestimate overall expansion effects on provider participation in Medicaid; providers

already participating in this program may have been induced to accept more enrollees postexpansion. While we emphasize supply-side effects, our reduced form methods reflect both supply and demand effects. We have a relatively short postexpansion period and cannot capture longer-term effects. Finally, we are not able to track providers over time due, which hinders our ability to rigorously study the mechanisms that drive our findings. For example, the impact of Medicaid expansion on the probability of accepting Medicaid might be driven by changes in market entry/exit and/or provider ownership or setting induced by the policy. However, we find suggestive evidence that our results are not likely to be driven by provider self-selection issues as we find no association between Medicaid expansion and the number of providers in a state, the probability of being a for-profit or outpatient provider. We encourage government data providers, such as SAMHSA—the Administration that manages the N-MHSS, to include information that allows researchers to track providers over time to support such analyses and provide a deeper understanding of the mental health care delivery system.

Our study contributes new evidence to the ACA-Medicaid expansion literature and how providers respond to changes in market size in general. We show that specialty mental health treatment providers respond to public insurance market expansions with increased Medicaid acceptance which will allow additional patients to use their insurance to pay for valuable, but expensive, treatment. These findings are important for understanding how policies impact provider behavior and patients' access to treatment.

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ENDNOTES

[1] We located the expansion date for DC through media sources. Details available on request.

[2] State averages are calculated by applying the 1.94 percent estimate to the average number of providers accepting Medicaid in 2018 in states that did not expand Medicaid by 2018.

REFERENCES

1. American Psychiatric Association. What is mental illness? https://www.psychiatry.org/patients-families/what-is-mental-illness. Accessed February, 2019.
2. Center for Behavioral Health Statistics and Quality. *Results from the 2016 National Survey on Drug Use and Health: Detailed tables*. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2017.
3. Substance Abuse and Mental Health Services Administration. *Key Substance Use and Mental Health Indicators in the United States: Results from the 2017 National Survey on Drug Use and Health*. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2018.
4. Berndt ER, Bailit HL, Keller MB, Verner JC, Finkelstein SN. Health care use and at-work productivity among employees with mental disorders. *Health Aff (Millwood)*. 2000;19(4):244-256.
5. Scott D, Happell B. The high prevalence of poor physical health and unhealthy lifestyle behaviours in individuals with severe mental illness. *Issues Ment Health Nurs*. 2011;32(9):589-597.
6. Osborn DP. The poor physical health of people with mental illness. *West J Med*. 2001;175(5):329-332.
7. Lim D, Sanderson K, Andrews G. Lost productivity among full-time workers with mental disorders. *Ment Health Policy Econ*. 2000;3(3):139-146.
8. Insel T. *Mental Health Awareness Month: By the Numbers*. Bethesda, MD: National Institute of Mental Health; 2015.
9. Frakt AB. How much do hospitals cost shift? A review of the evidence. *Milbank Q*. 2011;89(1):90-130.
10. Olfson M. The rise of primary care physicians in the provision of US mental health care. *J Health Polit Policy Law*. 2016;41(4):559-583.
11. Substance Abuse and Mental Health Services Administration. *Behavioral Health Spending and Use Accounts, 1986–2014*. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2016.
12. Garfield RL, Zuvekas SH, Lave JR, Donohue JM. The impact of national health care reform on adults with severe mental disorders. *Am J Psychiatry*. 2011;168(5):486-494.
13. Garfield RL, Lave JR, Donohue JM. Health reform and the scope of benefits for mental health and substance use disorder services. *Psychiatr Serv*. 2010;61(11):1081-1086.
14. Oberlander J. Long time coming: Why health reform finally passed. *Health Aff (Millwood)*. 2010;29(6):1112-1116.
15. Buchmueller T, Ham JC, Shore-Sheppard LD. The Medicaid program. In *Economics of Means-Tested Transfer Programs in the United States*, vol. 1. Chicago, IL: University of Chicago Press; 2015:21-136.
16. Frean M, Gruber J, Sommers BD. Premium subsidies, the mandate, and Medicaid expansion: coverage effects of the Affordable Care Act. *J Health Econ*. 2017;53:72-86.
17. Medicaid and CHIP Payment and Access Commission. Medicaid state plan coverage of behavioral health services: methodology and definitions. 2019. https://www.macpac.gov/wp-content/uploads/2016/06/BH-State-Plan-Services-Policy-Compendium-Cmsn-review.xlsx
18. Kaiser Family Foundation. Medicaid Expansion Enrollment, 2017. 2018. https://www.kff.org/health-reform/state-indicator/medicaid-expansion-enrollment/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Accessed August 15, 2018.
19. Kaiser Family Foundation. Medicaid enrollment & spending growth: FY 2018 & 2019. 2019. https://www.kff.org/medicaid/issue-brief/medicaid-enrollment-spending-growth-fy-2018-2019/. Accessed October 16, 2019.
20. Decker SL. In 2011 nearly one-third of physicians said they would not accept new Medicaid patients, but rising fees may help. *Health Aff (Millwood)*. 2012;31(8):1673-1679.
21. Frank RG, Goldman HH, Hogan M. Medicaid and mental health: be careful what you ask for. *Health Aff (Millwood)*. 2003;22(1):101-113.
22. Maclean JC, Saloner B. Substance use treatment provider behavior and healthcare reform: evidence from Massachusetts. *Health Econ*. 2018;27(1):76-101.
23. Centers for Medicare & Medicaid Services. December 2018 Medicaid & CHIP enrollment data highlights. 2019.
24. Kaiser Family Foundation. Status of state Medicaid expansion decisions. https://www.kff.org/health-reform/state-indicator/

state-activity-around-expanding-medicaid-under-the-affordable-care-act/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Accessed February, 2020.
25. Wherry LR, Miller S. Early coverage, access, utilization, and health effects associated with the Affordable Care Act Medicaid expansions: a quasi-experimental study. *Ann Intern Med*. 2016;164(12):795-803.
26. Miller S, Wherry LR. Health and access to care during the first 2 years of the ACA Medicaid expansions. *N Engl J Med*. 2017;376(10):947-956.
27. Sommers BD, Gunja MZ, Finegold K, Musco T. Changes in self-reported insurance coverage, access to care, and health under the Affordable Care Act. *JAMA*. 2015;314(4):366-374.
28. Courtemanche C, Marton J, Ukert B, Yelowitz A, Zapata D. Early impacts of the Affordable Care Act on health insurance coverage in Medicaid expansion and non-expansion states. *J Policy Anal Manage*. 2017;36(1):178-210.
29. Kaestner R, Garrett B, Chen J, Gangopadhyaya A, Fleming C. Effects of ACA Medicaid expansions on health insurance coverage and labor supply. *J Policy Anal Manage*. 2017;36(3):608-642.
30. Golberstein E, Gonzales G. The effects of Medicaid eligibility on mental health services and out-of-pocket spending for mental health services. *Health Serv Res*. 2015;50(6):1734-1750.
31. Wen H, Druss BG, Cummings JR. Effect of Medicaid expansions on health insurance coverage and access to care among low-income adults with behavioral health conditions. *Health Serv Res*. 2015;50(6):1787-1809.
32. Baicker K, Allen HL, Wright BJ, Finkelstein AN. The effect of Medicaid on medication use among poor adults: evidence from Oregon. *Health Aff (Millwood)*. 2017;36(12):2110-2114.
33. Creedon TB, Cook BL. Access to mental health care increased but not for substance use, while disparities remain. *Health Aff (Millwood)*. 2016;35(6):1017-1021.
34. Maclean JC, Cook B, Carson N, Pesko MF. Public health insurance and prescription medications for mental illness. *B E J Econom Anal Policy*. 2019;19(1):67.
35. Ghosh A, Simon K, Sommers BD. The effect of health insurance on prescription drug use among low-income adults: evidence from recent Medicaid expansions. *J Health Econ*. 2019;63:64-80.
36. Wen H, Wilk AS, Druss BG, Cummings JR. Medicaid acceptance by psychiatrists before and after Medicaid expansion. *JAMA Psychiatry*. 2019;76(9):981-983.
37. Angrist JD, Pischke J. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press; 2009.
38. Maclean JC, Popovici I, Stern ER. Health insurance expansions and providers' behavior: evidence from substance use disorder treatment providers. *J Law Econ*. 2018;61(2):279-310.
39. Kaiser Family Foundation. Status of state action on the Medicaid expansion decision. 2019. https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/?currentTimeframe=0%7B. Accessed August, 2019.
40. Center for Medicaid and CHIP Services. Health homes. 2019; https://www.medicaid.gov/medicaid/ltss/health-homes/index.html. Accessed October 15, 2019.
41. Legal Action Center. Institutions for Mental Diseases exclusion in Medicaid. 2019. https://lac.org/wp-content/uploads/2017/12/HC-Access-CJ-CMS-activities-on-the-IMD-exclusion.pdf. Accessed October 10, 2019.
42. University of Kentucky Center for Poverty Research. *UKCPR National Welfare Data, 1980–2017*. Lexington, KY: Gatto College of Business and Economics, University of Kentucky; 2019.
43. Bertrand M, Duflo E, Mullainathan S. How much should we trust differences-in-differences estimates? *Q J Econ*. 2004;119(1):249-275.
44. Autor DH. Outsourcing at will: the contribution of unjust dismissal doctrine to the growth of employment outsourcing. *J Labor Econ*. 2003;21(1):1-42.
45. Lovenheim MF. The effect of teachers' unions on education production: Evidence from union election certifications in three midwestern states. *J Labor Econ*. 2009;27(4):525-587.
46. Brickley JA, Van Horn RL. Managerial incentives in nonprofit organizations: evidence from hospitals. *J Law Econ*. 2002;45(1):227-249.
47. Cooper Z, Kowalski AE, Powell EN, Wu J. Politics and health care spending in the United States. National Bureau of Economic Research Working Paper Series. Cambridge, MA.2019.
48. Pei Z, Pischke J-S, Schwandt H. Poorly measured confounders are more useful on the left than on the right. *J Bus Econ Stat*. 2018;37(2):1-12.
49. Finkelstein A. The aggregate effects of health insurance: evidence from the introduction of Medicare. *Q J Econ*. 2007;122(1):1-37.
50. Glied S, Zivin JG. How do doctors behave when some (but not all) of their patients are in managed care? *J Health Econ*. 2002;21(2):337-353.
51. Kolstad JT, Kowalski AE. The impact of health care reform on hospital and preventive care: evidence from Massachusetts. *J Public Econ*. 2012;96(11–12):909-929.
52. Lo Sasso AT, Buchmueller TC. The effect of the state children's health insurance program on health insurance coverage. *J Health Econ*. 2004;23(5):1059-1082.
53. Chen A. Do the poor benefit from more generous Medicaid policies? Available at SSRN 2444286. 2014.
54. Barry CL, Huskamp HA. Moving beyond parity—mental health and addiction care under the ACA. *N Engl J Med*. 2011;365(11):973.
55. Hudson JL, Moriya AS. Medicaid expansion for adults had measurable 'Welcome Mat' effects on their children. *Health Aff (Millwood)*. 2017;36(9):1643-1651.
56. Bishop TF, Press MJ, Keyhani S, Pincus H. Acceptance of insurance by psychiatrists and the implications for access to mental health care. *JAMA Psychiatry*. 2014;71(2):176-181.
57. Sloan F, Mitchell J, Cromwell J. Physician participation in state Medicaid programs. *J Hum Resour*. 1978;13(Suppl):211-245.
58. Polsky D, Richards M, Basseyn S, et al. Appointment availability after increases in Medicaid payments for primary care. *N Engl J Med*. 2015;372(6):537-545.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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