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Do State Parity Laws Reduce the Financial Burden on Families of Children with Mental Health Care Needs?

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Objective. To study the financial impact of state parity laws on families of children in need of mental health services.

Data Source. Privately insured families in the 2000 State and Local Area Integrated Telephone Survey National Survey of Children with Special Health Care Needs (CSHCN) ($N = 38,856$).

Study Design. We examine whether state parity laws reduce the financial burden on families of children with mental health conditions. We use instrumental variable estimation controlling for detailed information on a child's health and functional impairment. We compare those in parity and nonparity states and those needing mental health care with other CSHCN.

Principle Findings. Multivariate regression results indicate that living in a parity state significantly reduced the financial burden on families of children with mental health care needs. Specifically, the likelihood of a child's annual out-of-pocket (OOP) health care spending exceeding $1,000 was significantly lower among families of children needing mental health care living in parity states compared with those in nonparity states. Families with children needing mental health care in parity states were also more likely to view OOP spending as reasonable compared with those in nonparity states. Likewise, living in a parity state significantly lowered the likelihood of a family reporting that a child's health needs caused financial problems. The likelihood of reports that additional income was needed to finance a child's care was also lower among families with mentally ill children living in parity states. However, we detect no significant difference among residents of parity and nonparity states in receipt of needed mental health care.

Conclusion. These results indicate that state parity laws are providing important economic benefits to families of mentally ill children undetected in prior research.

Key Words. Parity, mental health, CSHCN, economic burden

The intent of parity laws is to improve equity in private insurance coverage for mental health care. Health insurers have covered mental health care at a

significantly lower level than coverage for other conditions for many years (U.S. Bureau of Labor Statistics 1982; Jensen et al. 1998; Buck et al. 1999; Barry et al. 2003). Health plans commonly require higher cost sharing and impose special inpatient day and outpatient visit limits on service utilization for mental health treatment. By requiring equivalent levels of insurance coverage for mental health and general medical care, parity policies aim to broaden access to services while decreasing the financial burden associated with seeking treatment. Parity insurance regulation may particularly benefit privately insured individuals with more severe mental health conditions at risk for high treatment expenses.

A series of multistate research studies find that state parity laws have had minimal or no effects on utilization of mental health services, perceived quality and generosity of insurance coverage and perceived access to care (Pacula and Sturm 2000; Sturm 2000; Bao and Sturm 2004). These findings have been cited as evidence that state laws are not fulfilling the aims of policy makers.

This article examines the effects of state parity laws but differs from previous research in several important ways. Most notably, all previous multistate studies considered the impact of state parity laws on adults. In contrast, we examine how state parity laws affect privately insured children with mental health care needs. Unlike adults, children with mental health disorders are likely to be covered under private health insurance irrespective of the severity of their illness. Also important, prior multistate studies have not evaluated the impact of state parity laws on the economic burden of seeking mental health treatment. In this study, we examine how state parity laws affect out-of-pocket (OOP) health care spending and other measures of the financial burden of mental health treatment costs on families.

We use data from the national 2000 State and Local Area Integrated Telephone Survey (SLAITS) National Survey of Children with Special Health Care Needs (CSHCN) to study how state parity laws affect children with mental health disorders. These data are a large nationally representative sample of children whose parents report that they had more health care needs or disability than other children, and that the their condition is expected to last for at least 12 months. This allows us to examine the impact of parity on the

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child population most likely to benefit—those with more severe mental health care needs. We compare those in parity and nonparity states and those needing mental health care with other special needs children.

A difficulty in estimating the impact of state parity laws on health care outcomes in cross-sectional data lies in the potential confounding effects of state characteristics that may be associated with both the passage of parity legislation and the use of mental health care by children and adolescents (also known as omitted variable bias or endogeneity). Level of stigma is one example of a factor that might be heterogeneous across states that could affect both the likelihood of state enacting a parity policy and the family financial burden of mental health services use within a state. We use instrumental variable estimation controlling for detailed information on a child's health and functional impairment to address this problem. We chose our instruments on the basis of political theory on state policy making. Dating back to Daniel Elazar's classic study of state political cultures (1966), empirical research has supported the view that electoral beliefs, legislative institutions, and policy priorities are uniquely ascribed to a state.[1] Based on this conceptual frame, we view the likelihood of passing parity as a function a state's political party power structure, a state electorate's political ideology, and the professionalism of a state's legislature.

Our results indicate that living in a parity state significantly reduced the financial burden on families of children with mental health care needs. Specifically, the likelihood of a child's annual OOP health care spending exceeding $1,000 was significantly lower among families of children needing mental health care living in parity states compared with those in nonparity states. Families with mentally ill children living in a parity state also had significantly lower reports of various other measures of financial burden compared with those in nonparity states. These results indicate that state parity laws are providing important economic benefits to families of mentally ill children undetected in prior research.

BACKGROUND

Rationale for Parity

Insurers have traditionally limited coverage for mental disorders out of concern that generous benefits could lead to high costs due to long-term psychotherapy and lengthy hospital stays. The RAND Health Insurance Experiment (HIE) demonstrated that increased use of services by consumers in response to

decreased cost sharing for ambulatory mental health care was roughly double that observed for outpatient medical services under fee-for-service insurance (Manning, Wells, and Buchanan 1989; Newhouse 1993). Adverse selection also explains comparatively low levels of mental health coverage. Mental illnesses are often persistent, and individuals with these disorders tend to use other health services at higher rates compared with otherwise similar individuals (Ellis 1988; Frank, Glazer, and McGuire 2000). Various studies have identified that a history of mental health use significantly affects choice of health plan (Perneger et al. 1995; Deb et al. 1996; Cao 2006). Because more generous coverage appears to attract these costlier users, insurers have a financial incentive to compete to avoid enrolling them by providing minimal mental health benefits (Frank and McGuire 2000).

Claims that insurance should not discriminate against persons with mental disorders and that benefit limits arbitrarily prevent access to effective treatments form the basis of arguments in support of benefit parity. Under traditional insurance arrangements, parity regulation can also counteract selection-related market competition. Finally, parity policies have been advanced as a mechanism for improving access to services for which there are high levels of unmet need. Research indicates that a substantial majority of those with mental disorders do not receive treatment in a given year (Regier et al. 1993; Kessler et al. 1994; Wang et al. 2005).

Importantly, the demand response noted in the HIE may no longer be a valid justification for discrepancies in coverage in the era of managed care. If managed care effectively controls consumer demand response, benefits can be expanded and family OOP treatment costs can be lowered without prompting large increases in service use. Recent successes in expanding mental health insurance coverage without triggering substantial cost increases provide evidence that traditional moral hazard concerns may be less pressing given the proliferation of managed mental health care (Goldman, McCulloch, and Sturm 1998; Ma and McGuire 1998; Rosenbach et al. 2003; Goldman et al. 2006). Assuming managed care is able to curb the demand response associated with reduced cost sharing and the elimination of limits without exacerbating adverse selection, parity could have the effect of increasing risk spreading and improving the efficiency of the health insurance market.

History of Mental Health Insurance Regulation

Various forms of benefit regulation have been implemented over the years to address limits on private insurance coverage for mental health care. In the

1970s and 1980s, state legislatures enacted mandated benefit laws in over two dozen states. These laws served to establish minimum levels of coverage (McGuire and Montgomery 1982), and did not address the issue of benefit equivalence for mental health with general health care. Mental health advocates began pressing for benefit parity at the state and federal levels in the 1990s; at this time the issue was framed explicitly as an antidiscrimination measure. In 1996, the U.S. Congress passed the Mental Health Parity Act (P.L. 104–204) prohibiting the use of annual or lifetime dollar limits on coverage for mental illnesses. This law does not apply to other kinds of benefit limits, such as special annual day or visit limits and higher cost sharing.[2] Because of its limited scope, federal parity has been viewed as a largely symbolic policy change. Efforts to expand it have repeatedly stalled in Congress.

In the absence of a broader federal parity law, 37 states have passed parity legislation. These state policies vary substantially in terms of the type of benefits covered, diagnoses included, population eligible, and direction regarding use of managed care. Some policies are quite limited in scope. For example, South Carolina's parity law applies to public employees only and North Carolina's policy mirrors the federal partial parity law by prohibiting special dollar limits while continuing to allow other types of mental health benefit limits. More extensive state laws require equal cost sharing and prohibit the imposition of special inpatient day and outpatient visit limits. State laws also differ in the conditions covered with some applying to only a subset of severe or "biologically based" disorders.[3]

Previous Research on Effects of Parity

Research on effects of state parity laws come from an evaluation of comprehensive parity in Vermont and three multistate analyses. The Vermont study found that consumers paid a smaller share of the total amount spent on MH/SA services after implementation of parity (Rosenbach et al. 2003). For those with serious mental health conditions, the decrease in OOP spending following parity was particularly large.[4] In contrast, the three multistate studies found little to no impact of parity. An early analysis by Sturm using Community Tracking Study (CTS) detected no statistically significant differences in perceptions of perceived insurance generosity or access among those living in parity and nonparity states (2000). In a subsequent analysis using the Health Care for Communities (HCC) data, Pacula and Sturm found that state parity laws appear to have a small positive effect on the level of utilization among adults in poor mental health but not for other adults (2000). In a more recent

paper using two waves of HCC data, Bao and Sturm found no statistically significant effects of state parity laws on perceived quality of health insurance coverage, perceived access to needed health care, and use of mental health specialty services among those needing mental health care (2004). None of these multistate studies directly examined the effect of parity on financial protection.

Studying Effects of State Parity Laws on Children and Families

Parity laws have the potential to provide economic benefit to those with the most severe disorders by expanding catastrophic insurance protection through the eliminating annual and lifetime service and dollar limits. Although no one has previously studied the effect on children, children with severe mental illnesses (SMIs) may be more likely than their adult counterparts to have private insurance coverage. Adults obtain private coverage most often either through the workplace or a spouse. Yet, only about a third of adults with SMI are employed (Kaye 2002). Adults with SMI are also less likely to be married (Jayakody, Danziger, and Kessler 1998). In contrast, even children with the most SMIs may still be covered through a parent's private insurance policy. Young people covered under private insurance have substantially higher inpatient service use than privately insured adults (Ringel and Sturm 2001). In contrast, among those with public coverage, adults have higher inpatient use than adolescents.

Research examining the cost of eliminating limits also suggests that children will benefit most from parity legislation. Sturm (1997) compares the cost per enrollee in plans with no limits to the cost per enrollee in plans that limit mental health care to 30 inpatient days and 20 outpatient visits. He finds the increase in cost per child beneficiary is higher than that for adult beneficiaries (23 versus 17 percent).

Although children have low rates of any use of mental health services, those with behavioral health problems can be very expensive to treat. In the extreme case, catastrophic treatment costs can result in a family relinquishing custodial rights to gain access to mental services for a child. According to a U.S. General Accounting Office (GAO) report, state child welfare officials in 19 states and juvenile justice officials in 30 counties estimated that parents placed over 12,700 children in welfare or juvenile justice systems to receive mental health care treatment in 2001 after exhausting savings and health insurance (2003).[5]

Most state laws do not distinguish between parity in coverage for adults and children. However, a number of parity statutes specify criteria for parity

coverage in childhood. For example, the California SMI parity statute identifies a "serious emotional disturbance of a child" as one or more mental disorders identified in the DSM (other than a primary substance abuse or development disorder) that result in behavior inappropriate to child's age according to expected developmental norms (Peck 2001). Under the Massachusetts SMI law, insurers are required to provide coverage to children and adolescents for treatment of nonbiologically based mental, behavioral, and emotional disorders described in the DSM that "substantially interfere or limit functioning and social interactions" (Ruthardt 2000). The law requires documentation by physician or evidence of inability to attend school, hospitalization, or behavior patterns posing serious danger to the child's self or others. No state parity laws explicitly exclude coverage of disorders in childhood.

METHODS

Data Sources

SLAITS National Survey of CSHCN data are used to analyze the effects of state parity laws. The SLAITS National Survey of CSHCN was collected by Health Resources and Services Administration in 2000–01 (Bethell et al. 2002; Van Dyck et al. 2002, 2004; Newacheck, Inkelas, and Kim 2004; Newacheck and Kim 2005).[6] The sampling scheme used was devised specifically with the goal of allowing researchers to make inferences about state differences in the experiences of these children. In each of the 50 states approximately 3,500 households with children were screened to yield 750 individual CSHCN by state to include in the survey ($N = 38{,}856$). The initial screener consisted of five distinct questions relating to a child's health care needs and activity limitations.[7] If a parent responded affirmatively to the screener question, they were asked whether the condition was expected to last 12 months or longer. If any of the five questions were answered affirmatively and the condition was expected to last 12 months, the child was included in the survey. For these children, the extent of the child's disability and health care needs were assessed by the respondent (usually a parent). Parents answered detailed questions about the types of services needed, sought, and received.

We limit our sample to children with private insurance coverage. Children with more than one type of coverage (e.g., Medicaid and private) were omitted from the sample. Three states enacted parity legislation during the time of study collection. Since we do not know the precise date of the

interview, children living in these states were omitted. Data on state parity laws were obtained through the National Alliance for the Mentally Ill website (2004) and validated with data collected by other groups.[8]

We used three data sources to obtain data on state-level political characteristics. Information on gubernatorial party affiliation and state legislative majorities obtained from the Council of State Governments was used to develop a measure of political party power. State political party identification scores and state ideology scores were obtained from a data set compiled by Erikson and colleagues (Erikson, Wright, and McIver 1993; Wright et al. 2001).[9] These data aggregate 336 national CBS News/New York Times polls with 400,327 respondents collected over a 23-year period. Legislative professionalism scores by state were adopted from work by Perevill Squire (1992).

Measures

Dependent Variables. We study the effects of state parity laws on financial protection and receipt of needed mental health care. We expect state parity to positively affect a family's financial burden by lowering the OOP cost of obtaining mental health care services. We study four measures of financial protection: (1) whether annual child OOP health spending (not mental health care specific) exceeded $1,000 (yes/no); (2) whether a family reported that a child's health care has caused financial problems (yes/no); (3) whether a family reported needing additional income for a child's medical expenses (yes/no); and (4) whether a family reported that OOP charges for care were reasonable (never, sometimes, usually, or always). We coded responses of "never" or "sometimes" as 1 and 0 otherwise. OOP spending was collected within six ranges. To convert these categories to a dollar amount, we took the log of the midpoint of each range.

Likewise, we might expect these laws to affect a child's utilization of specialty mental health services. As noted above, changes in utilization will depend on how effectively managed care controls demand response to parity. To measure use, respondents were first asked if the child needed mental health care. If yes, the respondent was asked if the child received all needed mental health care. Unfortunately, respondents were not asked about the number of visits. Thus, we study only one measure of utilization—whether a child received all needed mental health care. Because only those respondents reporting a need for mental health care were asked this question, this sample is much smaller ($N = 4{,}823$).

Parity Measure. The primary explanatory variable is whether a child lived in a state with some form of parity law implemented before January 2001. In practice, there are some challenges to studying the effects of state parity laws. As noted above, state parity laws are quite heterogeneous and hard to characterize. There is substantial variation in the state parity literature about how to categorize these laws. In this study, we use moderately strict criteria for defining a parity state. States with parity laws that apply only to state employees, mirror the federal law, or allow insurers to impose special inpatient day or outpatient visit limits are not considered parity states in this analysis.[10] Using the National Survey of CSHCN data, families in 23 states are considered parity during this time period using these criteria.[11]

Other Independent Variables. We control for child and family characteristics that are likely to affect our outcome measures but are unrelated to state parity laws. Demographic characteristics include a child's age, age-squared, gender, race (Hispanic, nonwhite, black), whether the interview was conducted in a language other than English, whether the mother has only a high school education or less, eight dummy variables indicating family income, and the number of adults in the household.

We also control for observable measures of disease severity and disease characteristics. Variables denoting severity and functional impact of the child's disability include five dummy variables representing responses to the five screener questions. We also include information from four additional survey questions: parents ranking of the child's level of disability on a scale of 1–10 (with zero the most mild and 10 the most severe), parents report of the amount of time the child is affected by the condition (never, sometimes, usually, always), a description of the child's health care needs (usually stable, change only once in awhile, change all the time), and whether the child's health conditions affect her ability to do things (a great deal, some, very little). The latter three variables are coded as categorical in the model.

Statistical Approach

To overcome the potential endogeneity of state passage of parity with study outcomes, we use state political characteristics as instruments using an instrumental variable estimation approach. We compared this IV approach to OLS regression results. Our IV models are similar in flavor to a prior study of the effects of state parity laws (Pacula and Sturm 2000). We opted to develop alternative instruments because prior work included measures of a state's

supply of mental health services that we were concerned might be correlated with our service utilization outcome. The conceptual framework for our IV estimation approach is based on political theory of state policy making. A rich empirical literature in political science supports the assertion that political beliefs, institutional factors and policy priorities are uniquely ascribed to a state. Therefore, we conceptualize the likelihood of a state enacting a parity law as a function of state-level political characteristics.

We identified state political characteristics likely to be correlated with the endogenous regressor (passing a state parity law) but unlikely to be correlated with our outcomes, thus orthogonal to the error term. First, we hypothesized that Democrat-leaning states will be more likely to pass parity legislation. We created an index of state political party power equal to one if either a state's governor or the majority of either chamber of a state's legislature is Democratic, zero if Republican, and 0.5 if Independent or evenly divided in the year of enactment (for a maximum value of 3).[12] Second, our prior is that states with citizens holding a more conservative political ideology are less likely to pass parity laws due to preferences against government mandates. We developed a state electorate's mean political ideology score aggregating state-level data from 336 national media polls. Respondents in each state were asked whether they thought of themselves as liberal, moderate, or conservative. A score of -100 is assigned to each conservative response, a score of 0 is assigned to each moderate response, and a score of $+100$ is assigned to each liberal response. Mean scores are aggregated by state over the period 1995–1999 to attempt to even out single year changes in opinion due to specific political events. Finally, we expected that the professionalism of a state's legislature would be negatively correlated with a state's parity enactment because less professional state legislatures have been more active in enacting mandated benefit laws. To develop state legislative professionalism scores, we used an index of salary of state legislators, number of staff members per legislator and total days per legislative session developed by Squire (1992).[13]

A two-stage generalized method of moments (GMM) estimator is used to estimate the parameters of the models. GMM was compared and chosen over two-stage least squares and other specifications as a more efficient estimator in the presence of heteroskedasticity of unknown form (Baum, Schaffer, and Stillman 2003). Prior work indicates that linear instrumental variable estimates perform nearly as well as the correctly specified maximum likelihood estimator (Angrist 1991, 2001). We predict the passage of parity laws in our first stage, and then use these predicted values to estimate the effect of state parity

laws on financial burden and utilization outcomes in equations (1) and (2). We estimate the following equation for each of our outcomes:

$$\text{economic burden} = \alpha + X_i\beta_1 + \beta_2\,\text{parity}_s + \beta_3\,\text{need MH care}_i + \varepsilon \quad (1)$$

where X is a vector of individual characteristics, parity refers to whether the child lives in a parity state and need MH care refers to whether the respondent reported that the child needed mental health care in the past year. Because we hypothesize that parity will only impact those in need of mental health care, we next run the following model which includes a term indicating the interaction of parity and need for mental health care:

$$\begin{aligned}\text{economic burden} =& \alpha + X_i\beta_1 + \beta_2\,\text{parity}_s + \beta_3\,\text{need MH care}_i \\ &+ \beta_4\,\text{parity}_s \times \text{need MH}_i + \varepsilon\end{aligned} \quad (2)$$

A priori, we anticipate that the estimated coefficient β_2 will be insignificant because we expect parity to only effect economic burden for the subset of children needing mental health care. We expect β_3 to be relatively large and positive. That is, we expect children needing mental health care to have a greater economic burden compared with other children with special health care needs without a mental health condition. Finally, the variable of interest is the interaction between these two variables. Because we expect the presence of a state parity laws to reduce the economic burden of health care for those children with mental illness, we anticipate that this interaction term will be negative.

The coefficient β_4 can be thought of as a difference-in-difference estimate of the impact of parity on mental health care need. In this difference-in-difference estimation, we implicitly compare the effect of parity legislation for those with mental health needs with those reporting no need for mental health care in states with parity compared with states without parity. We use this same approach for all four economic burden outcomes.

RESULTS

Table 1 reports unadjusted descriptive statistics for the full sample of privately insured CSHCN (N= 21,930). About half of children in the sample live in a parity state and 20.8 percent report needing mental health care. The mean reported level of disability is 3.3 on a 10-point scale. More than half of the sample report that their health condition affects their ability to do things and 70 percent report their condition as usually stable. The mean age of CSHCN is

Table 1: Descriptive Statistics, SLAITS National Survey of CSHCN

	Full Sample (N = 21,930)
Independent variables	
Lives in parity state (%)	50.0
Age (mean years)	10.5
Male (%)	59.8
Race/ethnicity (%)	
Hispanic	6.4
Nonwhite	13.0
Other	80.6
Interview conducted in language other than English (%)	<1.0
Mother has education of high school or less (%)	24.8
Only 1 adult in household (%)	11.7
Poverty level (%)	
<50% FPL	<1.0
<100% FPL	1.9
<133% FPL	3.0
<150% FPL	2.6
<185% FPL	6.6
<200% FPL	3.3
<300% FPL	23.4
<400% FPL	21.5
≥400% FPL	37.1
Parent reports of child's disability	
Child needed mental health care (%)	20.8
Child's disability level from 0–10 as most severe (mean response)	3.3
How often child's health conditions affect ability to do things (%)	
Never	47.0
Sometimes	38.2
Usually	6.5
Always	8.3
Stability of child's condition (%)	
Change all the time	3.8
Change only once in awhile	26.3
Usually stable	69.9
CSHCN screener questions (%)	
Child needs more medical care than peers	41.9
Child currently needs prescription medication	79.8
Child limited in ability to do things	17.1
Child needs physical or speech therapy	12.9
Child has emotional, behavioral, or developmental problems	22.0
Outcome variables	
Child OOP spending >$1,000(%)	14.32
Respondent reports that OOP spending on child's care is never or rarely reasonable (%)	28.2
Respondent reports that child's health care has caused financial problems (%)	17.4
Respondent reports that family needed additional income to care for child (%)	14.3
Instrumental variables	(N = 47)
State's institutional partisanship power structure (mean ranking)	1.441
State electorate's political ideology (mean ranking)	−0.148
Professionalism of state's legislature (mean ranking)	0.223

Note: Full sample includes CSHCN respondents reporting private insurance (and no other) coverage. We exclude CSHCN living in the District of Columbia and in states where the timing of enactment of parity makes it ambiguous whether the law was in effect at the time of the survey.

CSHCN, Children with Special Health Care Needs; OOP, out-of-pocket.

10.5 and 60 percent of the sample are male. Thirteen percent are nonwhite and 6.4 percent are Hispanic children. Ninety-two percent of the population reported family incomes over 150 percent of the federal poverty level. Table 1 also includes the proportion of families responding affirmatively to each of the five CSHCN screener questions.

Unadjusted descriptive statistics on measures of financial burden are also reported. Fourteen percent of families spent more than $1,000 annually OOP to treat a child's special health care needs and 28.2 percent viewed OOP spending on a child's care as unreasonable. Likewise, 17.4 percent of respondents reported that a child's health care treatment had caused financial problems, and 14.3 percent needed additional income to care for their child.

Table 2 compares unadjusted mean outcomes among families of CSHCN in parity and nonparity states with and without mental health care needs. The difference in the proportion of those receiving needed mental health care among those in parity and nonparity states are minimal (significant at the .10 level). Among those in need of mental health services, unadjusted mean financial burden measures differ somewhat. In particular, families in parity states were slightly less likely to report that a child's mental health care needs caused financial problems and required additional income to treat than to their counterparts in parity states. No significant differences were detected in other economic burden measures.

In first stage GMM regression results predicting whether a state adopted a parity law, state-level political characteristics appear to be good instruments (results not shown). Staiger and Stock (1997) characterize weak instruments as those where the partial correlation between the instruments and the included endogenous variables is low (e.g., F statistic <10). The F statistic of joint significance for these policy variables is 11.21. Coefficients indicate that both political party power and electoral ideology are positively and significantly associated with passing parity as expected. States with Democrat-dominated executive and legislative branches were more likely to pass state parity laws, as were states with Democrat-leaning electorates. The professionalism of a state's legislature was significantly and negatively associated with passing parity as expected.

Table 3 presents stage two instrumental variable regression results for model specifications with and without interactions.[14] Results are described for interaction models only. As anticipated, families of children needing mental health care were significantly more burdened financially from health expenses than families of other special needs children across these models. Likewise, as we expected, the coefficients estimating the parity effect are insignificant in all

Table 2: Unadjusted Effect of Parity Law on Economic Outcomes

	Parity States			*Nonparity States*			*Difference in Difference*
	(1) No Reported Need for Mental Health Care	*(2) Reported Need for Mental Health Care*	*(3) $MHneed_0 - MHneed_1$*	*(4) No Reported Need for Mental Health Care*	*(5) Reported Need for Mental Health Care*	*(6) $MHneed_0 - MHneed_1$*	*(7) $Parity_1 - Parity_0$ (Column 3–6)*
Child OOP spending >$1,000 (%)	11.58	23.62	− 12.04	12.44	24.08	− 11.64	− 0.40
OOP spending reasonable (1 = never, rarely) (%)	25.54	35.71	− 10.17	26.80	35.64	− 8.84	− 1.33
Child's health care has caused financial problems (%)	13.16	28.18	− 15.02	15.05	31.38	− 16.33	1.31***
Needed additional income to care for child (%)	11.01	23.08	− 12.07	12.36	24.99	− 12.63	0.56**
Received all needed mental health care (%)	N/A	87.32	—	N/A	85.37	—	1.95*

***$p<.01$,
**$p<.05$,
*$p<.10$.
OOP, out-of-pocket.

Table 3: IV GMM Regression Results

	(1) Full Sample	*(2) Full Sample with Interaction of Parity and Mental Health Care Need*
OOP spending > $1,000		
Parity law in effect	−0.027* (0.017)	−0.014 (0.015)
Needed mental health care	0.075*** (0.010)	0.102*** (0.017)
Parity × mental health		−0.057*** (0.024)
OOP spending reasonable (1 = never, rarely)		
Parity law in effect	−0.026 (0.017)	−0.002 (0.014)
Needed mental health care	0.047*** (0.014)	0.103*** (0.023)
Parity × mental health		−0.108*** (0.034)
Childs health care has caused financial problems		
Parity law in effect	−0.032** (0.014)	−0.019 (0.013)
Needed mental health care	0.061*** (0.010)	0.096*** (0.017)
Parity × mental health		−0.074*** (0.025)
Needed additional income to care for child		
Parity law in effect	0.004 (0.062)	0.017 (0.013)
Needed mental health care	0.062*** (0.009)	0.081*** (0.013)
Parity × mental health		−0.053* (0.024)
Received all need mental health care (N = 3,799)		
Parity law in effect	0.011 (0.013)	N/A

***$p < .01$,

**$p < .05$,

*$p < .10$.

Note: Authors estimated the same model using OLS. These results were similar in direction to the IV results presented above but statistically insignificant (results available from authors upon request).

OOP, out-of-pocket; GMM, generalized method of moments.

interaction models. We had hypothesized that parity would effect the financial burden of only the subset of children needing mental health care. The key variable of interest in each of these models is the interaction term estimating the effect of living in a parity state on outcomes among families of children with mental health care needs compared with other CSHCN families. These results uniformly indicate that living in a parity state significantly reduced the financial burden on families of children with mental health care needs. We detect no significant difference among residents of parity and nonparity states in receipt of needed mental health care.

Based on these regression results, we calculate predicted effects of living in a state with a parity law on a child reporting a need for mental health care. These results are presented in Table 4. We find that the predicted probability

Table 4: Predicted Effect of Living in a State with Parity Law on a Child with Reported Need for Mental Health Care

	Parity States	*Nonparity States*
Out of pocket spending on child greater than $1,000 (%)	20.7	27.8
OOP spending reasonable (1 = never, rarely) (%)	30.3	41.3
Child's health care has caused financial problems (%)	25.2	34.6
Needed additional income to care for child (%)	22.5	26.0
Received all needed mental health care (%)	86.9	85.9

OOP, out-of-pocket.

of a child's annual OOP health care spending exceeding $1,000 was 7 percentage points lower among families of children needing mental health care living in parity states compared with those in nonparity states. Specifically, our estimates suggests that 21 percent of children living in a parity state with a reported need for mental heath care would have annual OOP spending in excess of $1,000 compared with 28 percent of in nonparity states. Families with children needing mental health care in parity states had a 11 percentage points lower probability of viewing these OOP costs as reasonable compared with those in nonparity states. Likewise, families living in a parity state had a 10 percentage points lower probability of reporting that a child's health needs caused financial problems. The likelihood of reports that additional income was needed to finance a child's care was also 3 percentage points lower among families with mentally ill children living in parity states.

DISCUSSION

In this paper, we examine how state parity laws affect CSHCN reporting a need for mental health care. Our results indicate that state parity enactment leads to beneficial outcomes undetected in prior research. We find that families living in a parity state had a significantly lower financial burden due to caring for children with mental health care needs compared with their counterparts in nonparity states. We detect no significant difference among residents of parity and nonparity states in receipt of needed mental health care.

These findings are important for several reasons. First, understanding the policy effects of mental health benefit regulation on children is valuable from a societal perspective. A unique characteristic of mental health disorders is that they often emerge in childhood and young adulthood, and can be

highly disruptive from an educational and professional standpoint. The National Comorbidity Survey Replication found that half of all lifetime cases DSM-IV disorders start by age 14 (Kessler et al. 2005). If parity policies improve access to high-quality mental health care to individuals at younger ages, they may have beneficial indirect effects on educational attainment and long-term earning potential.

We note two other benefits of studying effects on children using the National Survey of CSHCN data set. First, these recently released data provide an opportunity to assess policy effects after 23 states passed parity laws. We view this as an advantage of our study since prior research provides evidence on the effects of either early-enacting states (Pacula and Sturm 2000; Sturm 2000) or a subset of states enacting parity during a 2-year period (Bao and Sturm 2004). Second, a unique attribute of these data is the inclusion of extensive information on family financial burden along with some (albeit limited) data on perceived need for services. Our findings provide evidence of the beneficial effects of state parity laws on risk spreading with no detectable differences in receipt of needed care. Interestingly, only about 14 percent of families needing mental health care in both parity and nonparity states report not receiving needed mental health care, suggesting a somewhat less severe access problem than might have been expected within this population of special needs children.

It is important to note that OOP spending provides information on the net effect of changes in OOP price and changes in quantity, and we cannot disentangle these two effects in this study. In theory, a decrease in OOP spending could reflect a decrease in OOP price (due to parity) alongside an increase, a decrease or no change in the quantity of use. If consumer cost sharing decreased but quantity increased dramatically then OOP spending may increase despite a reduction in the financial burden of seeking treatment.[15]

Several other limitations with this analysis are worth noting. First, as mentioned previously, the CSHCN survey is a single cross section. Making causal inferences is more difficult with cross-sectional data than with panel data. Unfortunately, no panel data are available at this time with detailed health and disability information for children large enough to make state estimates. Nonetheless, the recent availability of the CSHCN is a dramatic improvement over previously available data. Second, there are some limitations with our outcome variables. Our measures of financial burden related to a child's receipt of all health care paid for OOP. A more ideal outcome would be family OOP spending on a child's mental health care rather than total child

OOP spending. Also, we measure a child's service utilization as the receipt of all needed mental health care. This outcome provides no information on the clinical nature of a child's need for mental health care, the level of mental health care use (e.g., number of outpatient visits/inpatient days) or whether care was delivered in the primary or specialty mental health care sector. (Parity laws primarily target coverage for care provided in the specialty mental health sector.) Although we restrict our analysis to families with private health insurance, we are unable to identify those covered by self-insured plans exempt from state parity laws under the Employee Retirement Income Security Act (ERISA). Therefore, we are unable to exclude a subset of our sample population unaffected by state parity laws.[16] All prior research on the effects of state parity laws shares this same data limitation. However, this limitation would bias our analysis toward finding no effects. Finally, if parity laws lead to more effective treatment being received, measures of child's health and functional limitations included as control variables in our model will be endogenous.

Our findings suggest that broadening state parity policies that are limited in scope or extending the existing federal parity law might produce greater financial protection from the costs of treating mental illness. Various states are considering legislation to expand existing state parity policies. At the federal level, legislation has stalled for the pass few sessions of Congress that would provide more comprehensive parity by prohibiting the use of special day or visit limits and higher cost sharing for mental health care. A political milestone occurred in the effort to broaden this federal law in April 2002 when President George W. Bush publicly stated his support for more equivalent mental health coverage for persons with mental illness. Most recently, the President's New Freedom Commission on Mental Health report reiterated support for full parity in insurance coverage for mental health and physical health care (2003).

It is worth noting that our findings are consistent with the two largest parity evaluations conducted to date. Evaluations of both the comprehensive mental health and substance abuse parity in the Federal Employees Health Benefits (FEHB) program and the Vermont parity law found that these policies lowered OOP spending without significantly increasing total mental health treatment costs (Rosenbach et al. 2003; Goldman et al. 2006). Collectively, these findings signal that parity policies can produce important economic benefits to families without prompting large spending increases. More research is needed to assess how these economic benefits may differentially impact youth with more and less severe impairments. A unique attribute of our

work is that we detect aggregate state parity effects even though some state laws are far less comprehensive in scope that either the FEHB or Vermont policies.

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NOTES

1. See, for example, Sharkansky (1969), Peters and Welch (1978), Hayes and Stonecash (1981), Hanson (1983, 1984), Klingman and Lammers (1984), and Fitzpatrick and Hero (1988).
2. Companies with fewer than 50 employees and those that offer no mental health benefit are exempt from the federal parity law. Payers experiencing more than a 1 percent increase in premiums as a result of federal parity can apply for an exemption.
3. Mental health conditions typically characterized under state parity laws as severe or biologically based include schizophrenia, schizoaffective disorder, bipolar disorder, major depression and sometimes autism, anorexia/bulimia, obsessive compulsive disorder, and panic disorder.
4. Among individuals spending more than $1,000 annually on MH/SA services, OOP spending was reduced by more than half. Within the two Vermont health plans studied, use of outpatient mental health services increased without prompting substantial spending growth after implementation of parity. For the two largest health insurers in the state of Vermont, the level of use increased slightly in one plan and decreased in the other.
5. Nationwide, this estimate is likely to be higher since 32 states, including the five largest states, and many counties were unable to provide data on the number of affected children. No formal federal or state tracking of these placements occurs.
6. More detailed information about this data set, including the questionnaire and codebooks are available at http://www.cdc.gov/nchs/about/major/slaits/cshcn.htm

7. These include questions regarding inordinate service use, use of prescription medications, activity limitations, participation in special therapy, and emotional/behavioral/developmental problems.
8. Other data used to validate state parity date were obtained from the American Psychiatric Association, National Mental Health Association, National Council of State Legislatures, and published articles (Gitterman 2001; Peck and Scheffler 2002).
9. These data are publicly available at http://www.indiana.edu/~iupolsci/bio_wright.html.
10. State parity policies may differ by the mental health (and sometimes substance abuse) diagnoses covered and whether a state law mandates coverage or offer, applies to both individual and group plans, includes a small employee exemption, and exempts employers experiencing cost growth. For the purpose of this analysis, differences along these parameters did not affect whether a state was considered a parity state.
11. These states are Arkansas, California, Connecticut, Colorado, Delaware, Georgia, Hawaii, Indiana, Kentucky, Maine, Maryland, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, Oklahoma, Rhode Island, South Dakota, Vermont, and Virginia.
12. Both houses of the Nebraska unicameral legislature were assigned 0.5 scores.
13. The top four ranking states were New York, Michigan, California, and Massachusetts and the bottom four were New Hampshire, Wyoming, North Dakota, and Utah. While these data are over a decade old, levels of legislative professionalism across states were deemed to have remained stable enough over time to be useful measures for the purpose of this analysis.
14. We also stratified the sample into two groups: those with and those without a need for mental health services. This is empirically the same as interacting only the mental health need variable with parity. The results were qualitatively similar.
15. This interpretation is absence any managed care reaction to parity. Under managed care, the assumption that a decrease in price always leads to an increase in quantity no longer strictly holds. If there is a particularly strong managed care reaction to parity, quantity could fall along with price. However, we believe this is unlikely.
16. Data from the Medical Expenditure Panel Survey—Insurance Component (MEPS-IC) indicate that 30.7 percent of private-sector establishments that offer health insurance self-insured at least one plan in 2001. This proportion varies somewhat by state (e.g., 41 percent of employers self-insured in Alaska while only 21 percent self-insured in Connecticut in 2001). Among those private firms with 50 or more employees, this proportion was substantially higher (58.3 percent).

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