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# Mental Health Parity Legislation: Much Ado About Nothing?

*Rosalie Liccardo Pacula and Roland Sturm*

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**Objective.** To determine whether state-level parity legislation has led to an increase in utilization of mental health services.

**Data Sources.** Healthcare For Communities (HCC), a multi-site nationally representative study sponsored by the Robert Wood Johnson Foundation that tracks health care system changes for mental health and substance abuse treatment. Information on state-level parity legislation was provided by state offices of the National Alliance for the Mentally Ill (NAMI); local and state market data come from the Area Resource File; information on other health mandates from Blue Cross/Blue Shield.

**Study Design.** Two-stage regressions are used to estimate the effect of state parity legislation on use of any mental health services, use of specialty mental health services, and number of specialty visits in the past year. In the first stage, we predicted the probability that a state decides to pass parity legislation as a function of state health care market indicators and previous legislative activity. The fitted probability is used in the second stage to determine the effect of this legislation on access and utilization.

**Principal Findings.** State parity legislation is not associated with a significant increase in any of our measures of mental health services utilization. These results are robust to various specifications of the models.

**Conclusions.** Those states that are able to pass parity legislation do not experience significant increases in the utilization of mental health services. This may be due in part to a loss of coverage for those people most at risk for mental health disorders. The results could be very different, however, if strong federal legislation were passed.

**Key Words.** Parity legislation, mental health, utilization

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Mental health “parity” mandates are legislation that requires insurance coverage for mental health illnesses to equal that for physical ailments. They are more specific than general mental health mandates, which simply require that companies providing insurance for physical ailments also offer coverage for mental health illnesses. Parity mandates have been among the most salient recent policies to affect health services. Prior to 1996, only five states had

mental health parity mandates, but the last three years (through 1998 and into 1999) have seen an enormous upsurge in state legislative activity. In 1997, 34 states introduced some form of parity legislation; by 1998, 19 states had adopted some form of parity (National Alliance for the Mentally Ill [NAMI] 1998) and a limited federal law had become effective (Frank, Koyanagi, and McGuire 1997; Sturm and McCulloch 1998). A number of states continue to consider additional legislation.

The level of parity that is actually achieved by these mandates varies considerably across states (see Sturm and Pacula 1999 for a state-by-state overview). For example, some states (e.g., Arizona, Indiana, and South Carolina) simply mirror the federal law and require equal lifetime and annual caps for mental health illnesses and physical ailments, while other states (e.g., South Dakota) also require that firms provide the same deductibles, coinsurance factors, and number of outpatient visits as that specified for physical illnesses. States also differ in terms of their definitions of mental illnesses. Many states (e.g., Delaware, Colorado, Maine, and Texas) limit the benefit expansion to specific mental illnesses, while other states (e.g., Vermont) require that coverage be provided for any mental illness listed in the DSM-IV.

Unless employers and insurance companies compensate by imposing other constraints, even the minimal parity laws that remove dollar limits can substantially expand benefits for the most severely ill. However, they are unlikely to influence utilization and access for the general population. In contrast, mandated reductions in deductibles and coinsurance rates, which are part of parity legislation in some states, are likely to influence access and utilization for the general population as well.

These laws have been widely celebrated by mental health advocates, while employer and insurance interest groups claim that these new mandates are overly costly. Two recent studies, sponsored by the Health Insurance Association of America, associate mental health mandates, not just parity legislation, with an increase of almost six percentage points in the uninsurance

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rate (Custer 1998) and a rise in premiums for firms that expand coverage due to the mandates (Jensen and Morrissey 1999). Other studies suggest, in contrast, that parity will lead to only a minimal increase in costs under current managed care systems (Sturm 1997) and could even decrease costs as parity legislation increases the management of mental health services (National Advisory Mental Health Council 1998). Currently, the only empirical evidence comes from case studies of state employee programs in Texas, North Carolina, and Ohio (National Advisory Mental Health Council 1998). The effect of state parity legislation on access and utilization of mental health care in the general population remains unknown.

This article examines the impact of parity legislation on mental health service utilization using data from a new national survey. Parity legislation is not the result of a random process, and states with below-average utilization appear more likely to enact legislation than states with above-average utilization (Sturm and Pacula 1999). Ignoring these differences could lead to biased estimates of the true effects of the legislation. In order to control for market and legislative factors that are potentially correlated with the presence and absence of state parity laws, we use a two-stage modeling framework. In the first stage we predict the probability that a state decides to enact parity legislation using information on the state's supply of medical and mental health services, state demographics, and the existence of other health mandates. In the second stage, we use the predicted probability that the state has passed parity legislation to evaluate the impact of this legislation on utilization of mental health services.

## DATA AND METHODS

Individual-level data on utilization of mental health services come from the Healthcare for Communities (HCC) project, a national household survey sponsored by the Robert Wood Johnson Foundation (Sturm, Gresenz, Sherbourne, et al. 1999). The purpose of the HCC project is to evaluate and track variations in health policy, health care delivery, access to care, costs, and outcomes of care within and across communities for persons at risk for alcohol, drug abuse, and mental health (ADM) conditions. The first wave of the study sampled individuals in 60 sites and added a geographically dispersed national sample. Individuals were interviewed from September 1997 through November 1998. This analysis uses a pre-release version of the HCC household survey, which contains 9,585 respondents (a public

release file is expected to be released shortly). Because parity legislation is generally aimed at private insurance through employer mandates, all of our analyses reported herein are restricted to individuals with private insurance ( $n = 6,234$ ).

The main dependent variables examined in this analysis include (1) any use of mental health care services in the past 12 months, including care received from a primary care provider; (2) any use of mental health specialty care (i.e., care received from a MH specialist) in the past 12 months; and (3) the number of mental health specialty visits among users. "Access" in this article refers to the use of any mental health care services. Additional information pertaining to the individual's background characteristics, socioeconomic status, insurance status, and health status are used as controls in this analysis, including gender (male), race (black, Hispanic, and other, with white as the comparison group), age (less than 25 and 50 years and older, with middle age as the comparison group), income, years of schooling, marital status, number of chronic conditions, SF-12 physical component summary, and census region (Northeast, Midwest, and South, with West as the comparison group). To capture general mental health status, we use the mental health inventory scale from the Medical Outcomes Study (Wells et al. 1996). This mental health inventory scale represents an individual's general mental health well-being as indicated by the mean score on five questions that inquire about an individual's (emotional) feelings during the past four weeks. A higher score suggests better feelings. To identify people in poor mental health, we create a dichotomous indicator for individuals with a score of 50 or less on the mental health inventory scale. Previous research shows that 50 is the mean score for individuals diagnosed with current major depressive disorder (Wells et al. 1996). Individuals seeking treatment for additional disorders have, on average, even lower mental health inventory scores.

To capture local health care market factors that can influence an individual's decision to access mental health services, we merged in county-level variables from the 1998 and 1999 Area Resource Files (ARF) by matching zip codes and interview years. If a person was interviewed in 1997, then county-level variables assessed for the previous year (1996) were matched to the individual via zip code using the 1998 ARF. If a person was interviewed in 1998, then county-level variables assessed for 1997 were matched via zip code using the 1999 ARF. Demographic and health care market indicators that we include in the analysis are median household income, percent urban, percent below the poverty level, unemployment rate, the number of doctors

per capita, the number of psychiatrists per capita, and the number of HMOs within the county.<sup>1</sup>

Information on state mental health parity legislation comes from the National Alliance for the Mentally Ill (1998) and is summarized in Sturm and Pacula (1999). Any state that has passed some form of legislation requiring equal benefit coverage for mental and physical ailments is identified as having a parity law even if the coverage is limited. Parity is thus defined and evaluated in its broadest sense. To test the sensitivity of our results to this broad definition, we conduct some additional analyses where parity is defined only for those states with laws that are more generous than the federal legislation (termed "strict parity").<sup>2</sup> Effective dates for the parity legislation are matched to individuals according to their state of residence and the date of their interview. Because the measures of utilization analyzed represent use of services in the past 12 months, we construct parity legislation indicators that are set equal to one for those individuals living in a state where parity has been effective for at least a year prior to the interview date.

Our previous research found that states with lower initial utilization were more likely to pass legislation (Sturm and Pacula 1999). To control for the correlation between parity legislation and unobserved state factors influencing an individual's access and utilization to mental health services, we use a two-stage estimation procedure where the probability that a state decides to pass parity legislation is predicted as a function of the state's supply and demand for health care services. Information on state demographic characteristics and the structure of the health care market place obtained from the 1998 and 1999 Area Resource File are merged in using the same process as the county-level indicators. We include two state-level variables as proxies for the demand for mental health services: state poverty rate and the percent insured within the state. Information on insurance coverage by state was obtained from the U.S. Census Bureau's web page. Measures of the supply of health care services include the number of psychiatrists per capita and the number of long-term psychiatric hospitals per 10,000 population.<sup>3</sup>

It is quite possible that state populations have different preferences for regulation that are independent of the supply and demand for health care services. These unobserved preferences are also likely to influence the probability that parity legislation is passed. To control for these differences in willingness to regulate, we include two additional measures of state legislative activity: the total number of health care mandates (excluding mental health mandates) that exist within the state in the previous year, and the total number of mental health mandates (alcohol treatment, drug abuse treatment,

psychiatric visits, and general mental health) that existed in the previous year. Information on the number and type of health mandates was made available to us by Blue Cross/Blue Shield of America.

Weighted descriptive statistics for the three dependent variables are provided in Table 1 for the subsample of privately insured. Approximately 10 percent of this sample report their use of some mental health care in the past year, but only 5 percent report receiving care from a mental health specialist. Of those individuals who saw a mental health specialist in the past year, the average number of visits was approximately 13. Table 1 also shows that some interesting differences exist between individuals who live in states with parity legislation and those who do not. Utilization of mental health services is lower for persons living in states that have parity mandates across all measures of use. *P*-values for statistical tests of the difference-in-means, reported in the final column of Table 1, show that all of these differences are statistically significant. Differences in individual and market characteristics may generate these observed differences in means, so multivariate logistic and linear regression analysis will be used to examine the relationship further.

## RESULTS

Table 2 reports coefficients and cluster-adjusted *t*-statistics from estimating the probability that a state enacts parity legislation using logistic regression. States with a higher per capita number of psychiatrists are less likely to enact parity legislation, although states with more long-term psychiatric hospitals are far more likely to enact legislation. Neither of the demand measures, percent insured or poverty rate, is individually significant at conventional levels, although they are jointly significant. Finally, states that have

Table 1 Descriptive Statistics for Mental Health Users Among Privately Insured Persons

	<i>Full Sample</i>			<i>Non-parity States</i>			<i>Parity States</i>			<i>p-Value</i>
	<i>n</i>	<i>Mean</i>	<i>s.d.</i>	<i>n</i>	<i>Mean</i>	<i>s.d.</i>	<i>n</i>	<i>Mean</i>	<i>s.d.</i>	
Any mental health care	6243	0.1036	0.3047	5412	0.1061	0.3080	831	0.0847	0.2786	< .05
Any MH specialty care	6238	0.0506	0.2192	5407	0.0526	0.2232	831	0.0358	0.1858	< .05
Number of MH specialty visits	595	12.7269	14.1475	533	12.8068	14.2732	62	11.8611	12.7821	< .10



successfully passed other mental health mandates are more likely to pass parity legislation.

It should be noted that the findings with respect to particular variables in this first stage are very sensitive to the specification of the model. This is not terribly surprising in light of the fact that we actually have only 50 independent observations and that a very strong relationship appears to exist between parity legislation and at least two key variables (long-term psychiatric hospitals and percent insured). The pseudo *R*-squared obtained from this first-stage regression, 0.358, is fairly large, suggesting that the variables being used to predict the probability that parity legislation is enacted have some predictive power. This conclusion is further supported by the Receiver Operating Characteristic (ROC) curve, which graphs the fraction of observed positive-outcome cases that are correctly classified to one minus the fraction of observed negative-outcomes cases that are correctly identified (Metz 1978).

Table 2 Logistic Regression Prob(State Enacts Parity Legislation), Privately Insured Sample

	<i>Coefficient</i>	<i>Z-Score</i>
<i>State Health Care Market Characteristics</i>		
Per capita number of psychiatrists	-0.260**	-2.905
More than 1.25 long-term psychiatric hospitals per 10,000 population (75th percentile)	4.350*	3.175
State percent insured < 80% (20th percentile)	1.916	1.447
<i>State Demographic Characteristics</i>		
State poverty rate	-0.112	-0.545
<i>State Legislative Activity</i>		
Total number of HC mandates (excluding MH)	0.041	0.342
Total number of mental health mandates	1.680**	2.356
<i>Diagnostics of First-Stage Regression</i>		
Pseudo <i>R</i> -squared	0.358	
Area under ROC curve	0.885	
Chi-square test of joint significance of health care market and demographic characteristics	15.18	
Prob > chi <sup>2</sup> (12)	0.0189	
	<i>Mean</i>	<i>s.d.</i>
<i>Actual Prevalence of Parity Legislation</i>	0.133	0.340
<i>Predicted Probability of Parity Legislation</i>	0.133	0.200

\* Significant at the 1% level (two-tailed test); \*\* significant at the 5% level (two-tailed test).

Note: Standard errors and *t*-statistics adjusted for clustering at the state level.

A larger area under the ROC curve implies that the model has greater predictive power, and this model has an area of 0.885. A chi-square test of the joint significance of the health care market and demographic variables, which will be our main identifying variables in the second stage, demonstrates that these variables are jointly significant and contribute significantly to the overall specification of the model.

From the model specified in Table 2, a predicted likelihood of parity legislation is calculated for each individual in our sample. This predicted value is then included in the second-stage regressions on utilization, specified in the first three columns of Table 3. The use of any mental health services and any specialty care are estimated using logistic regression. The log number of visits to a mental health specialist is estimated using ordinary least squares. All regressions are weighted for sampling design effects and standard errors are adjusted for clustering at the state level.

The results in the first two columns of Table 3 suggest that even after accounting for initial differences in state health care markets and demographics, privately insured individuals living in states with parity legislation are still less likely to receive any mental health care services, even from a specialist, after controlling for the influence of other individual factors, local health care market indicators, and the number of state mandates. Although persons with lower mental health inventory scores (MHI-5) are, as expected, more likely to use these services, those individuals in worse mental health who live in states that have enacted parity (predicted parity \* MHI-5  $\leq$  50) are not any more likely to use these services than are severely mentally ill persons who live in non-parity states. This may not be too surprising for these first two indicators of use, but one would expect to see that even modest parity legislation that removes annual caps would influence positively the number of specialty visits among those sicker individuals. The results presented in column three, however, do not show this to be the case. Parity legislation is found to have no significant effect on the number of specialty visits, even for those in poor mental health.

It is not surprising that parity legislation, as it is broadly defined here, does not significantly influence utilization among the privately insured population in general, since many of the state laws simply remove dollar limits. We therefore decided to replicate our analysis with a more restrictive definition of parity, which included only states with more generous legislation than that of the federal government. Under this new definition, we find that no significant difference exists in any mental health services use between people living in parity and those in non-parity states (results not shown).<sup>4</sup> Neither the predicted

parity variable nor the interaction term with MHI-5 is significant in predicting the likelihood that an individual uses any mental health services or any specialty services. However, an interesting result emerges when the number of specialty visits is predicted, as shown in column 4 of Table 3. Although more generous parity legislation has no significant effect on utilization for the general privately insured population, it does have a small positive bearing on the number of visits among those in poor mental health. Thus, even limited reductions in coinsurance rates and deductibles do appear to have the intended effect for those in greatest need, although these reductions in out-of-pocket costs do not influence utilization in the general privately insured population.

## IMPLICATIONS FOR POLICY

Using a two-step estimation procedure to account for the endogeneity of legislation, the main results of our research suggest that states able to pass basic parity legislation experience no significant increase in utilization among the privately insured. However, states that have enacted legislation to provide more generous coverage do experience a small increase in the use of specialty services among those in greatest need. There is not a significant increase in utilization of mental health specialty services among the general population of privately insured persons, however.

At least three shortcomings of this analysis limit the interpretation of the findings presented in Table 3 and their relevance for policy. First, although we restrict our analysis to just the privately insured, we are unable to identify people covered by self-insured plans. We therefore cannot identify those people who are truly affected by the legislation. If a large fraction of our sample are covered by self-insured plans, and hence are not subject to parity mandates because of ERISA, then our finding of no significant effect of parity legislation, on average, in terms of mental health services utilization would not be surprising. Thus, the finding of no positive effect may result from our inability to control for this mitigating factor.

Second, we are unable to control for the type of private insurance the individual has, and in particular whether he or she is in an HMO or other managed care environment. Again, to the extent that a large fraction of our sample have their care effectively managed, this may offset any positive effect that more generous benefits coverage has on utilization. Ideally, we would want to control for the degree to which care is managed before we could interpret parity as having no significant impact on utilization.

Table 3 Regression Results for the Privately Insured Sample

	Logit		Logit		OLS		Strict Parity OLS	
	Any Mental Health Use	Z-Score	Any Specialty Care	Z-Score	Ln(No. of Visits)	t-Score	Ln(No. of Visits)	t-Value
	Coef.		Coef.		Coef.		Coefficient	
Predicted parity legislation	-0.444*	-2.631	-0.623**	-1.956	0.077	0.162	-0.310	-0.958
Predicted parity * (MHI-5 ≤ 50)	-0.791	-0.880	-0.526	-0.342	0.295	0.461	0.827*	2.918
Federal parity legislation	-0.135	-1.412	-0.399*	-3.199	-0.102	-1.099	-0.107	-1.158
Total no. health care mandates	0.027*	3.601	0.009	0.794	-0.015	-1.146	-0.013	-0.913
Total no. mental health mandates	0.040	0.799	0.063	1.011	0.112	1.839	0.114	1.846
Male	-0.641*	-4.454	-0.730*	-4.690	0.025	0.188	0.024	0.179
Black	-1.064*	-7.289	-0.890*	-3.072	-0.347	-1.515	-0.340	-1.484
Hispanic	0.264	1.586	-0.041	-0.188	-0.163	-0.636	-0.166	-0.649
Other	-0.100	-0.398	-0.601	-1.550	0.187	0.599	0.187	0.615
Young	-0.304	-1.142	-0.434	-1.815	0.331	1.775	0.357**	1.998
Old	-0.685*	-3.423	-0.813*	-3.923	-0.056	-0.536	-0.057	-0.551
Ln(income)	-0.028	-0.282	0.174**	2.040	0.038	0.640	0.041	0.683
Education	0.097*	3.415	0.167*	5.320	0.033	1.424	0.031	1.338
Married	-0.436*	-3.845	-0.774*	-4.580	-0.286	-1.878	-0.294	-1.942
Number of chronic conditions	0.190*	4.622	0.154*	5.138	0.064	1.691	0.064	1.681
MHI-5	-0.045*	-13.451	-0.049	-16.046	-0.007**	-2.027	-0.007**	-2.117
PCS12	-0.032	-3.513	-0.016	-1.281	0.003	0.281	0.003	0.328
Northeast	0.094	0.907	-0.026	-0.136	0.273	1.906	0.275	1.92
South	0.075	0.473	-0.082	-0.438	-0.091	-0.524	-0.079	-0.448
Midwest	0.151	0.927	0.297	1.430	0.097	0.635	0.104	0.696
County no. of doctors	-6.040E-20*	-7.683	-9.110E-20*	-6.772	2.470E-18**	2.477	2.440E-18**	2.555
County no. of psychiatrists	-2.850E-08	-0.961	-3.050E-06	-1.420	-2.010E-06	-1.345	-2.070E-06	-1.433
County median income	-2.940E-06	-0.240	2.010E-05	1.686	1.360E-05	0.898	1.260E-05	0.835

County no. of HMOs	-0.012	-0.870	-0.029	-1.309	0.007	0.404	0.008	0.416
County % urban	0.002	0.744	0.009*	2.501	2.155E-04	0.061	3.250E-05	0.009
County % below poverty	-0.007	-0.435	0.005	0.168	0.007	0.599	0.006	0.498
County unemployment rate	-0.789	-0.208	1.225	0.194	0.101	0.058	0.253	0.143
Constant	1.809	1.793	-3.202	-2.851	1.066	1.645	1.039	1.537
Pseudo R-squared/R-squared	0.175		0.203		0.103		0.102	
Number of observations	6087		6083		584		584	

Note: Standard errors and *t*-statistics adjusted for clustering at the state level.

\* Significant at the 1% level (two-tailed test); \*\* significant at the 5% level (two-tailed test).

Third, the methods employed here are not ideal for evaluating the impact of parity legislation. We are limited to evaluating the effects of parity using cross-sectional variation between parity and non-parity states, and are therefore identifying not causation, but only whether or not any correlation exists between parity and utilization. Although we have taken steps to try to account for the endogeneity of the parity laws, we cannot be certain that we have correctly identified the model in the first stage, which means that we have to be cautious in interpreting results in the second stage. More appropriate methods would employ individual and state-level data over time.

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## NOTES

1. Other measures of the local health care market were included in previous analyses, such as the number of hospitals, short-term psychiatric hospitals, and long-term psychiatric hospitals. None of these other indicators of supply were significant in earlier regressions, so they were dropped from the present models.
2. The states with parity legislation stricter than that of the federal legislation include Arkansas, Colorado, Maine, Maryland, Minnesota, Missouri, New Hampshire, Rhode Island, Texas, and Vermont. There is a lot of variation across states in what they mean by "equal benefits" and for whom. Details regarding these laws and their effective dates are provided in Sturm and Pacula (1999).
3. Additional proxies of the supply and demand for health care services at the state level, such as the degree of managed care penetration, state unemployment rate, and the percent urban, were also considered in earlier models. None of these were significant.
4. These results are available from the authors upon request.

## REFERENCES

- Custer, W. S. 1998. *Health Insurance Coverage and the Uninsured*. Washington, DC: Health Insurance Association of America.
- Frank, R. G., C. Koyanagi, and T. G. McGuire. 1997. "The Politics and Economics of Mental Health Parity Laws." *Health Affairs (Millwood)* 16 (4): 108-19.

- Jensen, G. A., and M. A. Morrissey. 1999. *Mandated Benefit Laws and Employer-sponsored Health Insurance*. Washington, DC: Health Insurance Association of America.
- Metz, C. E. 1978. "Basic Principles of ROC Analysis." *Seminars in Nuclear Medicine* 8 (4): 283-98.
- National Advisory Mental Health Council (NAMHC). 1998. *Parity in Financing Mental Health Services*. DHHS Pub. No. 98-4322. Rockville, MD: National Institutes of Health.
- National Alliance for the Mentally Ill. 1998. *State Mental Illness Parity Laws*. Arlington, VA: NAMI.
- Sturm, R., C. Cresenz, C. D. Sherbourne, K. Minnium, R. Klap, J. Bhattacharya, D. Farley, A. S. Young, M. A. Burnam, and K. B. Wells. 1999. "The Design of Health Care for Communities: A Study of Health Care Delivery for Alcohol, Drug Abuse, and Mental Health Conditions." *Inquiry* 36 (2): 221-33.
- Sturm, R., and R. L. Pacula. 1999. "State Mental Health Parity Laws: Cause or Consequence of Differences in Use?" *Health Affairs* 18 (5): 182-92.
- Sturm, R. 1997. "How Expensive Is Unlimited Mental Health Care Coverage Under Managed Care?" *Journal of the American Medical Association* 278 (18): 1533-37.
- Sturm, R., and J. McCulloch. 1998. "Mental Health and Substance Abuse Benefits in Carve-out Plans and the Mental Health Parity Act of 1996." *Journal of Health Care Finance* 24 (3): 84-95.
- Wells, K. B., R. Sturm, C. D. Sherbourne, and L. S. Meredith. 1996. *Caring for Depression*. Cambridge, MA: Harvard University Press.











