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Behavioral Health Insurance Parity: Does Oregon's Experience Presage the National Experience with the Mental Health Parity and Addiction Equity Act?

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Abstract

Objective—The Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act prohibits commercial group health plans from imposing spending and visit limitations for mental health and substance abuse services that are not imposed on medical-surgical benefits. Controversially, the Act also restricts the use of managed care tools that apply to the behavioral health benefit in ways that differ from their application to the medical-surgical benefit. The only precedent for this approach is Oregon's state parity law, implemented in 2007. The goal of this study is to estimate the effect of Oregon's parity law on expenditures for mental health and substance abuse treatment services.

Methods—We compared expenditures for individuals in four Oregon commercial plans from 2005 through 2008 to a matched group of commercially insured individuals in Oregon who were exempt from parity. Using a difference-in-differences analysis, we analyzed the effect of comprehensive parity on spending for mental health and substance abuse services.

Results—Increases in spending on mental health and substance abuse services following Oregon's parity law were due almost entirely to a general trend observed among individuals with and without parity. Expenditures per enrollee for mental health and substance abuse services attributable to parity were positive but did not differ significantly from zero in any of the four plans (range: +\$12.15 to +\$25.49, $p > 0.05$ for each comparison).

Conclusion—Behavioral health insurance parity that places restrictions on how plans manage mental health and substance abuse services can improve insurance protections without substantial increases in total costs.

INTRODUCTION

Coverage of mental health and substance abuse treatment on par with medical-surgical benefits is a policy option often referred to as "parity." Without parity laws, commercial insurers have tended to limit coverage for mental health and substance use services, primarily because of concerns that equalizing coverage for these services would lead to substantial increases in utilization and spending.(1–4) Advocates for parity believe that the policy will increase access to mental health and substance abuse treatment and reduce out-

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of-pocket costs for consumers. After years of failed attempts at the federal level, advocates for parity won a significant victory in 2008, when President George W. Bush signed into law the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act (MHPAEA), PL 110–343 (2008). The law became effective beginning in October, 2009.

The federal law represents a new era for coverage of behavioral health conditions. It is substantially more comprehensive than the previous federal parity law and considerably stronger than most state parity laws. The law requires plans covering mental health and substance abuse services to offer them at the same level of benefits for those services as they provide for medical-surgical services. In other words, the law forbids health plans from employing “quantitative” treatment limitations (such as spending and visit limitations for behavioral health services) that are more restrictive than those offered for physical health. Furthermore, it also disallows the use of “non-quantitative” treatment limitations that affect the scope or duration of benefits for treatment and that apply to behavioral health but not physical health.

By addressing “non-quantitative” treatment limitations, the law has been interpreted as a restriction on the use of managed care tools (such as medical necessity, prior authorization or utilization review) that apply to the behavioral health benefit in ways that differ from their application to the medical-surgical benefit. The interim regulations implementing the MHPAEA, released in 2010, have been controversial and the subject of a lawsuit by managed behavioral health organizations that was intended to stop their implementation.(5) The plaintiffs argued that total costs would rise under the federal parity law if they were prohibited from managing behavioral health services differently than medical-surgical services.

Previous studies have consistently demonstrated that parity, coupled with differential management of the behavioral health benefit, can be implemented without large increases in the cost of behavioral health services.(6–11) In fact, when parity was introduced in the Federal Employees Health Benefits Program (FEHBP), the Office of Personnel Management encouraged its health plans to implement mental health carve outs and to increase the use of utilization management in anticipation of cost increases.(8) Implementation of the MHPAEA is most clearly differentiated from previous parity implementations because the regulations restrict the use of the very non-quantitative treatment limits many believe are responsible for containing behavioral health costs.(12) It is unclear if behavioral health parity will lead to higher costs if behavioral health services are not allowed to be managed differently than medical-surgical services.

In this study, we examine the effects of Oregon’s comprehensive state parity law, implemented in 2007. Oregon’s law is among the most comprehensive state parity laws, broadly defining mental health, including alcohol and substance abuse, and including no small business exemptions (see Table 1). The Oregon law is particularly noteworthy – and parallels the MHPAEA – in its restrictions on management of the benefit, disallowing the differential use of non-quantitative treatment limitations. Thus, the Oregon law is of particular salience to the federal experience. Presumably, if Oregon’s parity implementation has led to substantial increases in expenditures for behavioral health services, this would argue in favor of differential management of the behavioral health benefit. However, if comprehensive parity, coupled with the same management applied to the medical-surgical benefit, has had a negligible effect on expenditures in Oregon, then differential management may not be necessary. In this case, there may not be a strong economic argument against the restrictions on non-quantitative treatment limitations found in the regulations implementing the MHPAEA.

METHODS

The Oregon parity law went into effect on January 1, 2007. The statute contained a very broad definition of mental health and addiction, including almost all disorders in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, revised in 2000). This moved Oregon from a group of seven states with minimal parity mandates into a select group of two states (the other being Vermont) with the most comprehensive parity law in the country. Parity applied to in- and out-of-network providers. The Oregon Insurance Division interpreted the statute to mean that managed care tools such as "selectively contracted panels of providers, health policy benefit differential designs, preadmission screening, prior authorization, case management, utilization review, or other mechanisms designed to limit eligible expenses to treatment that is medically necessary" could not be used unless there was an analog in the management of medical-surgical benefits.(13)

The Oregon parity law applied to all commercially insured group health plans that were not self insured, representing about 70% of individuals in commercial group plans in Oregon. The other 30% of individuals in group plans were in self insured plans, in which the employer contracts with a health plan to administer the benefits but the employer assumes financial risk for the payment of all claims. These self insured plans are exempt from state insurance laws as part of the Employee and Retirement Income Security Act of 1974 (ERISA).

We studied the expenditures and utilization of enrollees between the ages of 4 and 64 who were continuously enrolled in one of four Preferred Provider Organization (PPO) health plans affected by the 2007 Oregon parity law. We examined changes in access, out-of-pocket spending and total spending on mental health and substance abuse services. To account for changes over time unrelated to the parity law, we used a comparison group of Oregonians who were continuously enrolled in self insured commercial PPO plans.

Data

We collected information on benefit design and management from structured, on-site interviews with key informants at each of the four PPO plans. We used an adaptation of the semi-structured interview schedule developed for the evaluation of parity in the Federal Employees Health Benefits Program.(8) We collected data on a variety of non-quantitative treatment limitations that are common to both the Oregon regulations and the MHPAEA, including prior authorization, the use of treatment plans as a utilization management tool, and the use of "carve outs" (separate management of the behavioral health benefit by a specialty organization).

From each of the four PPOs, we also obtained four years of data on enrollment and medical and pharmacy claims, including two years before and two years after the implementation of parity. We also obtained claims data on a comparison cohort of individuals continuously enrolled in self insured plans in Oregon from the Thomson Reuters' MarketScan database.

We classified inpatient and outpatient services associated with specified mental health and substance abuse diagnoses and psychotropic medications as mental health and substance abuse services based on previous work.(8) Briefly, mental health and substance abuse diagnoses were defined as those with diagnostic codes 291, 292, 295 through 309 (except 305.1 and 305.8), and 311 through 314 in the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM). An inpatient visit was classified as behavioral health if the primary diagnosis was a mental health or substance abuse diagnosis. An outpatient visit was classified as mental health or substance abuse related if it had a mental

health or substance abuse primary diagnosis or a procedure code specific to mental health and substance abuse care. To identify use of psychotropic medications, we updated Goldman and colleagues' methodology(8) to include psychotropic drugs released since 2001. The full list of psychotropic medications is available at Appendix A (SA1).

Statistical Analysis

We estimated the effect of parity on spending and access using the difference-in-differences method. The difference-in-differences is the average difference (occurring with the implementation of parity) in outcomes of interest among Oregonians in PPOs affected by parity, minus the average difference (after the parity implementation) among the comparison group (individuals in self insured plans not affected by the parity legislation). The first difference reflects changes in the outcome of interest (use or expenditures) that occur after the parity implementation. By subtracting the second difference – the changes that occur in the comparison group – we net out the secular changes that may have occurred for reasons not related to the parity law. Any remaining significant differences in outcome – the difference-in-differences – are attributed to the parity legislation.

To estimate the difference-in-differences model, we used a two-part model that accommodated two important characteristics of health care spending.(14) First, in any given year, many individuals will not have any behavioral health visits or expenditures. Thus, our dependent variable will have a large cluster of observations at zero. Second, among individuals who do use care, the distribution tends to be skewed, with a small proportion of individuals having high levels of spending. After testing competing models, we settled on a two-part generalized linear model with a log link and gamma variance distribution to estimate the relation between spending on mental health and substance abuse treatment and parity.(15) In our estimates, we show the probability of any use of mental health and substance abuse services (which is part one of the two-part model), and total spending for mental health and substance abuse services (which combines part one and part two of the two part model). We used bootstrapping clustered at the individual level to generate 95% confidence intervals that account for correlation among repeated annual observations.

Our unit of observation was the person year. There were four observations for each individual: two years pre-parity, and two years post-parity. In our regressions, we adjusted for age, gender, the person's relationship to the policyholder (child or spouse), and a marker for rural vs. urban residence.(16) The key variables of interest were an indicator variable assigned a value of one for the post-parity period and zero for the pre-parity period, an indicator variable assigned a value of one for individuals covered by parity (i.e. not in a self insured plan) and zero for the comparison group, and the interaction of the two indicator variables. We conducted analyses on each of the four plans separately, with the self insured individuals acting as a control group, as well as an analysis that pooled all four plans and used the self insured individuals as a control group.

In addition to the analyses of the population as a whole, we also provide a subanalyses of the effect of parity on children (age <=18).

RESULTS

Detailed information on benefit limits and management for the four PPOs are displayed in Table 2. Whereas previous studies of parity have shown an *increase* in the use of management techniques,(8, 9) such as prior authorization and treatment plans, in Oregon the use of these methods either stayed constant or declined. Among the four plans we studied, none required preauthorization for outpatient mental health or substance abuse services after the implementation of parity. Only two of the four PPOs required treatment plans (a written

plan describing goals, methods, and anticipated time for treatment) for outpatient mental health services, and only one PPO required treatment plans for outpatient substance abuse services. Nonetheless, there was still considerable variation in the extent to which plans attempted to manage the behavioral health benefit, and compliance and interpretation of the parity law was inconsistent across plans.

Table 3 reports descriptive data on individuals in the four PPOs and in the comparison group (i.e., those unaffected by parity). While there are some statistically significant differences in the population (e.g., individuals in the self insured group are more likely to be female and less likely to be the policy holder; individuals in Plan C were less likely to be located in rural areas), overall the intervention and comparison subjects are fairly comparable and exhibited a similar prevalence of behavioral health diagnoses.

Table 4 reports rates of use of mental health and substance abuse services and spending for service users. For all plans, the rates of use and spending increased during the study period. Table 4 also reports difference-in-differences estimates for the probability of use of mental health and substance abuse services and for spending on such services. After accounting for secular trends, the overall estimate of the effect of parity on total behavioral health spending was moderate, ranging from \$12 to \$26, and did not differ significantly from zero. Furthermore, the increases in spending were not necessarily smaller for plans that required treatment plans or carved out behavioral health care. The largest point estimate increase was for Plan D (\$25.49), which used a carve out and required treatment plans after 8 visits. The final row in Table 4 displays results from the analysis that pooled plans A, B, C and D. The point estimate of the effect of parity in the pooled analysis (using 100,328 individuals subject to parity and 19,634 individuals in self insured plans for comparison) was \$15.15 and not significantly different from zero (95% CI $-\$1.58, \31.25).

Table 5 reports rates of use of mental health and substance abuse services and difference-in-difference estimates of the effect of parity on children. Compared to the population as a whole, children are much less likely to access care (e.g., a probability of accessing care almost half that of the general population). However, conditional on accessing care, their expenditures are higher, so average spending per child beneficiary is relatively close to average spending per adult. In the difference-in-difference analyses, point estimates for total change in spending after parity are higher for children than the general population (e.g., estimates for children range between $+\$15.25$ to $+\$36.62$, compared to the range of $+\$12.15$ to $+\$25.49$ in the general population). However, in the analyses of children, no plan demonstrates a statistically significant increase in spending. Separate analyses for adults (provided in the online supplement) demonstrate similar findings, with estimates of the effect of parity on adults ranging from $+\$12.02$ to $+\$26.29$, with none statistically significant.

Oregon's parity law also required that co-insurance, co-payments, and deductibles be identical for behavioral health and medical-surgical care, although this policy had been the *de facto* practice for most health plans. Table 6 summarizes the effects of parity on out-of-pocket spending by users of mental health and substance abuse services. In two of the four plans, parity was associated with a small but statistically significant decrease in out-of-pocket spending (Plans A and B). One plan (Plan D) demonstrated a small but statistically significant increase in out-of-pocket spending. This increase reflected an overall trend in higher deductibles and cost-sharing that were introduced throughout Plan D's insurance offerings.

Sensitivity Analyses

We also estimated our difference-in-difference models using propensity score weighting on patient demographics and behavioral health risk adjusters.⁽¹⁷⁾ The results from this approach were qualitatively similar to the results from the difference-in-difference models without the propensity score model. Thus, the small differences in population characteristics displayed in Table 3 do not appear to be confounding the estimates of the effect of parity on behavioral health spending. The details of these analyses along with other analyses that investigate the adequacy of the control group and provide additional information on the context of the Oregon parity law are included as an online supplement.

DISCUSSION

This study is the first to examine a parity implementation that restricted non-quantitative treatment limitations, which is the approach that has been favored in the MHPAEA. The Oregon Insurance Division actively interpreted the statute to mean that the behavioral health benefit could not be managed in a way that was different from the medical-surgical benefit. Our results suggest that this form of parity did *not* result in increases in expenditures for mental health and substance abuse services that were substantially larger than those observed among a comparison group of privately insured individuals not subject to the parity law.

The point estimate for the change in spending for our four PPO plans was positive and ranged between \$12 and \$26, and none differed significantly from zero. One possible explanation for this negative finding is that our evaluation lacked the necessary power to show a statistically significant effect. However, the pooled analysis (using 100,328 individuals covered by parity) was not significantly different from zero.

The negative finding could also be related to the notion that parity primarily affects a relatively small population of individuals who need additional outpatient treatment. The added expense of this increase in outpatient utilization may be relatively small when compared to the overall year-to-year spending attributable to inpatient care and prescription drug use for mental health and substance abuse services. The lack of a significant increase in expenditures may also be related to plans' pre-parity approach to the quantitative limits. During our structured interviews with health plans, several indicated that these limitations were not 100% binding and exceptions could be made. These exceptions could occur with providers who were in the plan's behavioral health network, and would be managed and observed closely. According to plans, before parity, there was never any exception for providers who were out of network.

Table 7 provides some indication of the "exceptions" that plans made to their visit limitations prior to the parity implementation. (We note that our estimate is likely to be biased upwards since health plans may have differentiated between different types of outpatient behavioral health visits). In general, approximately 5% of patients with any behavioral health visit exceeded the specified limits of that plan. The apparent flexibility in these "limits" prior to the parity law may be one reason that the implementation of parity did not lead to large increases in spending.

Our negative findings suggest that the impact of federal parity on total health care spending could be relatively small. Overall, behavioral health expenditures are a small portion of total spending. In our study, expenditures for mental health and substance abuse services accounted for approximately 6.0% to 7.4% of total expenditures, depending on the health plan. An increase in behavioral health spending of \$25 (the largest point estimate in our study) would be equivalent to a 1.0% increase in total spending. Thus, even if parity did

result in statistically significant expenditures that our study was not powered to detect, the impact on the total premium would still be relatively modest.

While many observers believe that managing the behavioral health benefit is beneficial for patients, some have described the partnering of parity and managed care as “a Faustian bargain”: undesirable but necessary to keep costs in check.(18) The Oregon experience suggests that the Faustian bargain may not be necessary. That is, it may be possible to remove visit limitations without imposing onerous managed care utilization methods on behavioral health services. However, this does not mean that *no* managed care would be optimal. Oregon’s commercial health plans continued to use traditional managed care tools to control costs and utilization. The distinction enforced by the Oregon Insurance Division was that plans were not allowed to *differentially manage* behavioral health services.

Our study has several limitations that should be noted. In our quasi-experimental design, our comparison group consisted of individuals in Oregon who had commercial insurance and whose employers were self insured and thus not affected by Oregon’s parity law. There is a risk that this was not the appropriate comparison group or that this choice did not adequately control for secular trends. However, it is reassuring that individuals from the self insured plans generally had similar demographic and spending characteristics and were located in the same geographical and service areas. Our negative finding could also be attributed to statewide changes in the ways that providers cared for *all* of their patients after parity was implemented. For example, providers may have been confused or unable to discern which patients were covered by the parity statute and which were not, and may have recommended additional visits for their entire patient population. If this were the case, it might mask the increases in spending attributable to parity because the control group was also receiving more intensive treatment.

However, close inspection of the self insured data did not detect discrete changes in spending after the Oregon parity law. Rather, spending in the control group followed a relatively smooth, linear time trend over the four year study period. Figure 1 displays the average quarterly spending for our self-insured group, compared to a linear trend forecast based on the first eight quarters (pre-parity) of spending. These data do not suggest any large changes in spending that coincided with the implementation of the Oregon parity law. Additional evidence to support our comparison group is provided in the online supplement.

This study is also limited in its analysis of only four PPO plans in Oregon. While these plans represented the majority of the non-self insured commercial market, they may not be representative of other commercial plans in Oregon or commercial plans throughout the United States. Although we conducted extensive interviews with key informants in each of those plans and documented their management practices, there may be unobserved factors particular to our four study plans (e.g., cooperative relationships with providers) that allowed them to keep costs in check.

It is also possible that there may have been other non-quantitative treatment limitations that were responsible for controlling costs. We focused our attention on the same set of utilization management techniques that were studied in the Federal Employees Health Benefits Program(19) and in a recent survey of 368 commercial health plans.(20) However, there may have been other relevant indicators that we did not study. Furthermore, we also only examined whether plans had certain utilization management policies and not how strict health plans were in applying them. These data are difficult to obtain and beyond the scope of this study.

This study is also limited by its time frame, which covered two years of pre-parity and two years of post-parity observations. While we would expect that this would be adequate to

capture changes in patient behavior, it may not be long enough to capture changes in provider behavior. In particular, if providers see parity laws as an opportunity to expand business and services, they may invest in infrastructure and facilities that could have longer-term consequences for the costs of treating behavioral health disorders.

Certain aspects of Oregon's insurance market and health care delivery system may not be generalizable to other parts of the country. Oregon is generally considered to have a competitive insurance market. At least seven Oregon-based plans participate in the non-self insured group market, with the largest plan only capturing 31% of those beneficiaries.⁽²¹⁾ The state has authority to review proposed rate increases, as well as to regulate health plans for financial solvency, policy form approval, and consumer protection.⁽²¹⁾ There are undoubtedly differences in the health care markets across states that might affect the generalizability of our findings. In particular, psychiatric inpatient beds are generally considered highly constrained in Oregon, which may have limited increases in inpatient use after parity.

Our findings may presage the experience of health plans around the country as federal parity is implemented. The experience of Oregon suggests that management of the behavioral health benefit does not necessarily need to be different than management of the medical-surgical benefit in order to control costs as the federal parity law goes into place. Nonetheless, it does not mean that no management is optimal. In particular, given the widespread and broad-based nature of the federal law, we need a greater understanding of the types of benefit management that are best at controlling costs and improving quality, in order to reap the greatest advantages from the opportunity offered by a national parity law.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Thick dark line represents average quarterly spending for MarketScan individuals. The thin line represents a linear trend forecast based on the first eight quarters.

TABLE 1

Comparison of Oregon and Federal Behavioral Health Parity Laws

	Oregon Parity Law	MHPAEA
Effective date	January 2007	July 2010
Diagnoses covered	Requires coverage for all mental health and substance abuse diagnoses in the DSM IV, with limited exceptions ^a	No requirement
Quantitative treatment limits	Health plans must cover expenses arising from mental health and substance abuse treatment at the same level as other medical expenses.	Equivalent coverage with regard to financial requirements such as deductibles, co-payments and out-of-pocket expenses (but exclusive of annual and lifetime limits), as well as day and visit limitations.
Non-quantitative treatment limits (pertaining to the management of the benefit)	Does not prohibit insurers from managing behavioral health benefits as long as the same requirements are imposed on the coverage of other medical conditions. Examples include management tools such as use of restricted provider panels, differential benefit designs, preadmission screening, prior authorization, case management, and utilization review.	Limits that are comparable to and applied no more stringently to behavioral health benefits than medical-surgical benefits except to the extent that recognized clinically appropriate standards of care may permit a difference. Examples include medical management standards limiting or excluding benefits based on medical necessity (including utilization review), formulary designs for prescriptions drugs, standards for provider network participation, methods for determining usual, customary and reasonable charges, requirements for "step therapy" or "fail first" policies, and exclusions for failure to complete a course of treatment.
Application to in and out-of-network benefits	Applies to both in- and out-of-network benefits.	Applies to both in- and out-of-network benefits.
Exemptions	Does not pertain to commercial self insured (ERISA) plans, individual insurance, Medicaid, or Medicare	Allows a health plan to be exempted if the plan can prove that parity raised total plan costs by more than 2% in the first year and 1% thereafter Does not apply to groups with 50 or fewer individuals

^aThe primary exclusions are mental retardation, learning disorders, some sex-offender-related conditions, and tobacco addiction.

TABLE 2

Characteristics of Four Oregon Commercial Health Plans

Characteristic	Plan A		Plan B		Plan C		Plan D	
	Pre-parity	Post-parity	Pre-parity	Post-parity	Pre-parity	Post-parity	Pre-parity	Post-parity
Coverage limits ^a								
Inpatient mental health treatment	15 days ^b	None	14 days ^c	None	14 days ^c	None	17 days ^d	None
Inpatient substance abuse treatment	13 days ^e	None	\$5625 ^f	None	\$5625 ^f	None	\$5625 ^f	None
Outpatient mental health treatment	34 visits	None	29 visits	None	35 visits	None	45 visits ^g	None
Outpatient substance abuse treatment	25 visits ^h	None	27 visits ^h	None	\$1875 ⁱ	None	\$1875 ⁱ	None
Preauthorization requirement								
Inpatient mental health and substance abuse treatment	Within 48 hours	Within 8 days	Yes	Yes	Yes	Yes	Yes	Yes
Outpatient mental health and substance abuse treatment	No	No	No	No	Yes	No	No	No
Treatment plans								
Inpatient mental health and substance abuse services	Within 48 hours	Within 8 days	No	No ^j	No	No	In place at all times	In place at all times
Outpatient mental health services	After 8 visits	After 30 visits	No	No	After 4 visits	No	After 8 visits	After 8 visits
Outpatient substance abuse services	No	No	No	No	No	No	After 8 visits	After 8 visits
Carve out status	No	No	No	No	Yes	Yes	Yes	Yes

^aPre-parity coverage limits represent limits over a 24 month time period

^b16 days for children

^c15 days for children

^d18 days for children

^e27 days for children

^f\$5000 for children

^g43 visits for children

^h36 visits for children

ⁱ\$2500 for children

^jTreatment plans may be requested by case manager, based on review of medical necessity

TABLE 3

Characteristics of the Study Population

Characteristic	Self Insured Comparison (N=19,634)	Plan A (N=33,848)	Plan B (N=21,516)	Plan C (N=28,685)	Plan D (N=16,279)
Age	37.2 +/- 18.1	37.4 +/- 17.9	38.7 +/- 17.3	37.4 +/- 17.4	36.4 +/- 17.0
Female sex (%)	56	50	50	51	47
Policy holder status (%)					
Policy holder	49	48	55	54	56
Spouse	20	23	18	18	16
Dependent	31	28	28	28	28
Rural residence (%)	28	32	28	8	30
Pre-parity presence of selected diagnoses					
Major depression (%)	3.0	2.6	2.8	3.2	2.0
Anxiety disorders (%) [*]	5.1	4.9	5.4	6.0	5.0
Schizophrenia & other psychotic disorders (%)	0.21	0.16	0.17	0.17	0.15
Bipolar disorders (%)	0.54	0.58	0.70	0.59	0.37
Substance abuse (%)	0.25	0.07	0.23	0.65	0.45
Pre-parity diagnosis of alcohol abuse (%)	1.1	1.1	0.8	1.1	0.9
					0.24

(P-values designate the statistical significance of the difference between a characteristic of the health plan and comparison group populations.)

TABLE 4
Probability of Use and Expenditures on Mental Health and Substance Abuse Services^a

Plans	Probability of Use of Mental Health and Substance Abuse Services ^b		Total Mental Health and Substance Abuse Spending per Beneficiary ^b		Change in Value before and after the Implementation of Parity ^c	
	Pre-parity	Post-parity	Pre-parity	Post-parity	Probability of Use of Mental Health and Substance Abuse Services Percent (95% CI)	Total Mental Health and Substance Abuse Spending per Beneficiary \$ (95% CI)
Self Insured Comparison Plans (N=19,634)	23.72	26.08	198.95	256.01	NA	NA
Plan A* (N=33,848)	20.09	21.70	212.33	288.22	-0.72 (-1.19, -0.23) ^d	17.02 (-6.56, 40.25)
Plan B (N=21,516)	22.96	25.01	231.82	303.00	-0.30 (-0.92, 0.32)	15.32 (-8.13, 46.44)
Plan C (N=28,685)	20.47	23.10	174.17	246.27	0.28 (-0.23, 0.79)	12.15 (-6.27, 31.61)
Plan D (N=16,279)	19.49	21.45	157.06	226.27	-0.32 (-0.89, 0.30)	25.49 (-1.82, 71.45)
Pooled Plans A, B, C, D* (N=100,328)	20.72	22.77	196.60	268.59	-0.28 (-0.79, -0.11) §	15.15 (-1.58, 31.25)

^a CI denotes confidence interval.

^b Pre-parity and post-parity figures are annual figures averaged across two years

^c A difference-in-differences analysis was used to account for secular trends.

^d P≤0.05

TABLE 5
Probability of Use and Expenditures on Mental Health and Substance Abuse Services for Children^a

Plans	Probability of Use of Mental Health and Substance Abuse Services		Total Mental Health and Substance Abuse Spending per Beneficiary		Change in Value before and after the Implementation of Parity ^b	
	Pre-parity	Post-parity	Pre-parity	Post-parity	Probability of Use of Mental Health and Substance Abuse Services	Total Mental Health and Substance Abuse Spending per Beneficiary
	Percent		\$		Percent (95% CI)	\$ (95% CI)
Self Insured Comparison Plans (N=4,870)	10.84	12.93	152.28	214.53	NA	NA
Plan A (N=8,405)	11.82	13.65	162.63	256.42	-0.28 (1.21, -0.71)	36.62 (-13.43, 96.07)
Plan B (N=4,705)	11.00	13.69	152.65	252.66	0.46 (-0.83, 1.43)	32.44 (-31.94, 106.59)
Plan C (N=6,720)	11.27	13.78	124.16	207.02	0.32 (-0.70, 1.35)	15.25 (-38.23, 62.99)
Plan D (N=4,249)	9.90	11.48	105.81	192.25	-0.48 (-1.39, 0.66)	22.54 (-46.89, 112.15)

^a CI denotes confidence interval.

^b Pre-parity and post-parity figures are annual figures averaged across two years

^c A difference-in-differences analysis was used to account for secular trends.

^d p<0.05

TABLE 6

Difference-in-Differences Results for Out-of-Pocket Spending per User for Mental Health and Substance-Abuse Services with Implementation of Parity.^a

Plans	Out-of-Pocket Spending for Mental Health and Substance-Abuse Services per User		Change in Value before and after the Implementation of Parity ^b
	Pre-parity \$	Post-parity \$	\$ (95% CI)
Self Insured Comparison Plans	213.43	239.27	NA
Plan A	253.51	249.81	-31.71 (-46.62, -18.09) ^c
Plan B	228.40	237.10	-16.70 (-29.79, -1.87) ^c
Plan C	201.89	227.73	-0.45. (-10.23, 11.47)
Plan D	256.62	298.09	21.13 (0.64, 39.91) ^c

^a CI denotes confidence interval.

^b A difference-in-differences analysis was used to account for secular trends.

^c P≤0.05

Table 7

Pre-parity prevalence of visits exceeding outpatient mental health limits

	Plan A	Plan B	Plan C	Plan D
Pre-Parity Mental Health Outpatient Visit Limit (24 month limit)	34	29	35	45
Pre-Parity Percent of Episodes where Actual Visits Exceed 24 month limit (# of visits exceeding limit/total outpatient visits)	5.8% (310/5311)	6.5% (236/3611)	5.6% (280/5019)	2.1% (50/2381)