Mental Health Parity and Addiction Equity Act and the Use of Outpatient Behavioral Health Services in the United States, 2005–2016

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Objectives. To assess the impact of the 2008 Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act (MHPAEA) on mental and substance use disorder services in the private, large group employer–sponsored insurance market in the United States.

Methods. We analyzed data from the IBM MarketScan Commercial Database from January 2005 through September 2015 by using population-level interrupted time series regressions to determine whether parity implementation was associated with utilization and spending outcomes.

Results. MHPAEA had significant positive associations with utilization of mental and substance use disorder outpatient services. A spending decomposition analysis indicated that increases in utilization were the primary drivers of increases in spending associated with MHPAEA. Analyses of opioid use disorder and nonopioid substance use disorder services found that associations with utilization and spending were not attributable only to increases in treatment of opioid use disorder.

Conclusions. MHPAEA is positively associated with utilization of outpatient mental and substance use disorder services for Americans covered by large group employer–sponsored insurance.

Public Health Implications. These trends continued over the 5-year post-MHPAEA period, underscoring the long-term relationship between this policy change and utilization of behavioral health services. (*Am J Public Health.* 2019;109:S190–S196. doi: 10.2105/AJPH.2019.305023)

Over the past 2 decades, a series of legislative initiatives have advanced parity of insurance coverage for behavioral health disorders, namely mental and substance use disorders (M/SUDs), in the United States.[1,2] Parity in the context of recent federal laws means that insurance benefits for M/SUD services must be no more restrictive than those for medical and surgical treatment. To assess parity, an analysis is conducted to evaluate an array of factors, including financial limits (e.g., unequal cost sharing), quantitative treatment limits (e.g., visit and stay limits), and processes and techniques for managing care (often called nonquantitative treatment limits). Given the high rates of unmet need for behavioral health care[3,4] and the continued strain to the system caused by

the opioid crisis,[5,6] parity in insurance coverage is one important mechanism in improving overall access to behavioral health services.

Initially, the Mental Health Parity Act of 1996 (Pub L No. 104-204) prohibited higher annual and lifetime dollar limits for mental disorder treatment benefits compared to medical and surgical benefits. However, insurance companies still could impose other

restrictions on mental health coverage, such as covering only selected treatments or applying higher cost sharing for mental health visits, and parity requirements did not extend to SUD services. In 2008, the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act (MHPAEA; Pub L No. 110-343) expanded parity in M/SUD coverage beyond the 1996 law to a broader set of financial and treatment limits and to SUD services. This law—interacting with the Patient Protection and Affordable Care Act (Pub L No. 111-148), which expands parity to the individual market, small group insurance market, and those covered via Medicaid expansion—was expected to expand access to M/SUD insurance coverage for 62 million people.[7]

Research on M/SUD benefits suggests that parity laws, including MHPAEA, have affected quantitative treatment limits. Most plans substantially reduced or eliminated treatment limits after MHPAEA, and no evidence has indicated that the law led plans to drop M/SUD coverage rather than redress possible parity violations.[8–10] Parity laws also have been found to shift most, but not all, financial requirements for M/SUD treatment coverage to a level that is comparable to that for medical and surgical treatment.[10–12] However, findings regarding MHPAEA's impact on nonquantitative treatment limits are mixed and suggest that these limits still are being applied in a manner inconsistent with MHPAEA.[9,11,13]

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This article was accepted February 8, 2019.

doi: 10.2105/AJPH.2019.305023

Early analyses of these changes in coverage on utilization and spending attributable to parity laws found modest increases in utilization of behavioral health services.[14,15] Some studies also found positive utilization impacts on specific disorder categories considered more vulnerable to noncomparable benefit limits before MHPAEA, including increased mental health visits for autism spectrum disorder[16] and increased psychotherapy visits for eating disorders.[17] Others focused on cost concerns, finding decreased out-of-pocket costs for bipolar disorder, adjustment disorder, and major depression diagnosis.[18] None of these studies tracked the impact of MHPAEA beyond 2012. The 2010 interim final rule implementing the law provided explicit guidance on how to conduct parity analyses by treatment category and extended parity to include nonquantitative treatment limits, applicable for all plans as of January 2011.

We examined the relationship between MHPAEA in the large group employer–sponsored insurance market and M/SUD service utilization and spending on outpatient services, extending the follow-up period through September 2015. Because most M/SUD services are provided in an outpatient setting, we focused our evaluation on this setting. Given that the implementation of MHPAEA also coincided with the current opioid crisis in the United States, increased demand for behavioral health services resulting from the crisis may confound the law's impact on SUD service utilization and spending. Therefore, we evaluated opioid use disorder (OUD) and nonopioid SUD services separately.

METHODS

We estimated the association of MHPAEA with changes in utilization and spending by using a population-level interrupted time series (ITS) design. Time-series designs are robust quasi-experimental designs for evaluating population-level public health policy interventions[19,20] and have been widely used to assess parity impacts.[11,16,18] They control for selection bias, confounding attributable to group differences, short-term fluctuations, secular trends, and regression to the mean but remain vulnerable to threats attributable to history (or concurrent events) and

instrumentation.[19,20] Because the concurrent opioid crisis is a significant potential threat to the relationship between parity and SUD treatment, we stratified our analysis according to OUD and nonopioid SUD services.

Data

We used data in the IBM MarketScan Commercial Database from January 2005 through September 2015. The database contains private insurance claims from approximately 150 large employers for employees, their dependents, and early retirees, encompassing roughly 50 million lives per year. Although MarketScan data are a convenience sample that has fluctuated in size and contributors over time, the database has maintained the same age and sex distribution as reported by the US Census Bureau for individuals with employer-sponsored insurance.

Study Sample

The sample consisted of enrollees younger than 65 years with continuous enrollment in a large group employer–sponsored insurance plan for all 12 months in each calendar year (Appendix A, available as a supplement to the online version of this article at http://www.ajph.org, for attrition table and detailed methods). We excluded enrollees covered under plans that were not fully insured by the employer and plans that did not include prescription drug data. We used *International Classification of Diseases, Ninth Revision, Clinical Modification* (*ICD-9-CM;* Hyattsville, MD: National Center for Health Statistics; 1980) diagnosis codes to identify M/SUD services, including OUD and nonopioid SUD services. Non–behavioral health services were identified by the absence of an M/SUD diagnosis code on the service claim, similar to other studies that have used claims-based data sets.[21,22] We included a total of 24.1 million enrollees from 2005 to 2010 (before MHPAEA implementation) and 25.9 million enrollees from 2011 to 2015 (after implementation) in the analysis.

Outcomes

Our population-level ITS analysis required monthly measures of utilization and

spending on outpatient services. Outpatient services in this study comprised all behavioral health services broadly delivered in an outpatient setting, including physician and psychiatrist office visits and intensive outpatient, partial hospitalization, and outpatient residential services. In addition to excluding inpatient services, we excluded emergency department visits, prescription drugs, and laboratory and radiology services. We defined all outcome measures separately for M/SUD and non–behavioral health services. We defined OUD and nonopioid SUD outcomes for the subanalysis of SUD services. For utilization outcomes, we included any use of outpatient services as well as the average frequency of services used per service user. For spending outcomes, we examined average insurer spending per service user, average insurer reimbursement per visit, average out-of-pocket spending per service user, and average out-of-pocket amount paid per visit.

Analytic Approach

We defined the preparity period for our study as January 2005 through December 2010 and the postparity period as January 2011 through September 2015. Although the interim final rule was passed in 2010, it did not become effective for most plans that use a calendar year system until 2011. We did not include data from the last quarter of 2015 because the *ICD-9-CM* classification system of diseases was updated in October 2015. Therefore, we had 72 months of preparity data and 57 months of postparity data.

We used Stata version 14 (StataCorp LP, College Station, TX) for the ITS regression analysis with the user command ITSA.[23] We included 3 predictor variables in the analysis: (1) a linear time variable (month), (2) a binary variable (parity [pre–post indicator]; $0 = 2005–2010$; $1 = 2011–2015$), and (3) an interaction variable (parity*month). In addition to the 3 predictor variables, we controlled for seasonality by including indicator variables for each month. In all spending-related outcomes, we controlled for inflation by including a quarterly measure of inflation—the gross domestic product deflator.

We tested all regression analyses for first-order serial correlation by using a Durbin–Watson test statistic and estimated a full set of corrected ITS regressions. All coefficient signs

and magnitudes were very similar across the models, and we present the unadjusted results here. We also performed a full set of regression analyses that included an additional indicator for the interim period, years 2009 to 2010, and an additional month*interim period variable. This alternative specification revealed little evidence of changes in outcomes in the 2-year interim period before the 2011 effective interim rule compliance date (results not shown).

Because MHPAEA affected all large group employer–sponsored insurance plans nationally, finding a suitable comparison population would be difficult. Instead, we compared trends in behavioral health services with trends in non–behavioral health services because MHPAEA was expected to influence M/SUD outcomes but not necessarily medical or surgical outcomes. This approach was taken in previous studies and proved useful in distinguishing behavioral health trends from other broader health care trends.[21,24,25] To further confirm that our findings were not a result of changes in the sample of employers from year to year, we ran analyses on a subset of 65 employers that continuously contributed to the database in the study period.

RESULTS

Table 1 presents the average number and percentage of enrollees with at least 1 health care service who accessed behavioral health services per year before and after parity—separated by mental health and SUD services

—with SUD services separated into any OUD services and any nonopioid SUD services. On average, in each preparity year, about a quarter of enrollees (25.2%) with at least 1 health care service also had at least 1 behavioral health claim, increasing to 26.9% per year after parity. Behavioral health service use was driven primarily by use of mental health services. Only an average of 0.8% of enrollees used any SUD services during each preparity year, and 1.2% after parity (Appendix B, available as a supplement to the online version of this article at http://www.ajph.org, for year-specific values).

Tables 2 and 3 present the results from the ITS analysis, which captured trends in monthly population outcomes over the study period, with control for the general linear trend, seasonal variation, and inflation where applicable. For each regression, the total sample size was 129—the number of months in our study period. The parity (pre–post indicator) variable is a measure of the associated change in the level of the outcome variable; regression results for this variable can be interpreted as a more immediate, 1-time impact of MHPAEA. The parity*month interaction variable is a measure of the associated change in the slope of the outcome variable; regression results for this variable can be interpreted as a more gradual impact of MHPAEA over the postparity period.

Table 2 shows the association between MHPAEA and utilization of mental health and SUD outpatient services. There was no change in any use of mental health outpatient services (the percentage of enrollees who used ≥ 1 service). However, the law did have a

positive, though small, association with any SUD outpatient service use (parity [pre–post indicator] = 0.011; $P < .01$; parity*month = 0.001; $P < .01$). This means that parity increased the percentage of enrollees with any use of outpatient SUD services by 0.023 percentage points in the first postparity year and 0.068 percentage points by the end of the 2015 postparity period. MHPAEA was positively associated with the frequency of services used for both mental health and SUD services (parity*month = 0.005; $P < .01$ for mental health; parity*month = 0.054; $P < .01$ for SUD services). However, the magnitude of this association was much larger for SUD services (Figure 1). The associated increase of average monthly SUD service use was 0.59 services per month per service user in the first postparity year and 3.0 services by the end of the postparity period. For non–behavioral health services, results were not significant or the coefficient was negative, increasing our confidence that changes were associated with MHPAEA and not unobserved factors.

Table 2 also presents the regression results showing the association between MHPAEA and insurer and enrollee spending. The law was associated with increased average monthly insurer spending for both mental health and SUD services; however, the impact on mental health services was comparatively small. For SUD services, the associated impact was large and statistically significant (parity [pre–post indicator] = 47.674; $P < .01$; parity*month = 6.879; $P < .01$). This translates into an estimated increase in insurer spending of $130 per month per SUD service user in the first postparity year and $440 by the end of the postparity period. Yet there was no statistically significant association of MHPAEA with the average reimbursement paid per SUD outpatient visit. This finding suggests that MHPAEA's relationship with SUD insurer spending was not because it affected price paid per SUD visit but was instead driven by increased utilization of SUD services. For mental health, we found a moderate though statistically significant increase in reimbursement rates paid per service, but because we found a similar result for non–behavioral health services, we cannot be confident that this change was attributable to MHPAEA and not to general health care trends (Appendix C, available as a supplement

TABLE 1—Enrollees in Employer-Sponsored Insurance in the United States Who Accessed Health Care Services in the Preparity (2005–2010) and Postparity (2011–2015) Periods by Types of Services Used, Average Annual Percentage

Type of Service Used	Preparity (2005–2010), No. (%)	Postparity (2011–2015), No. (%)
≥ 1 health care service (average across years)	10 737 695	14 233 282
Any behavioral health service	2 705 157 (25.2)	3 823 844 (26.9)
Any mental health service	2 677 421 (24.9)	3 767 138 (26.5)
Any SUD service	82 200 (0.8)	173 300 (1.2)
Any nonopioid SUD service	72 097 (0.7)	147 130 (1.0)
Any OUD service	10 949 (0.1)	27 638 (0.2)

Note. OUD = opioid use disorder; SUD = substance use disorder. Enrollees were excluded if they did not have at least 1 calendar year of continuous enrollment. See Appendix B (available as a supplement to the online version of this article at http://www.ajph.org) for annual percentages.

TABLE 2—Interrupted Time Series Regression of Mental Health Parity and Addiction Equity Act Impact on Utilization of and Spending on Mental and Substance Use Disorder Outpatient Services in Employer-Sponsored Insurance: United States, 2005–2015

Variable	Non–Behavioral Health Services, b (95% CI)	Mental Health Services, b (95% CI)	Substance Use Disorder Services, b (95% CI)
Any use of outpatient services, percentage points			
Parity (pre–post indicator)	–0.483 (–1.301, 0.335)	0.093 (–0.081, 0.268)	0.011 (0.006, 0.017)
Parity*month	–0.025 (–0.048, –0.003)	–0.001 (–0.006, 0.003)	0.001 (0.0007, 0.001)
Month (linear time variable)	0.012 (–0.001, 0.025)	0.016 (0.013, 0.019)	0.001 (0.001, 0.002)
Average frequency of monthly outpatient service use per service user, no. of services			
Parity (pre–post indicator)	–0.025 (–0.101, 0.050)	< 0.001 (–0.052, 0.052)	–0.059 (–0.161, 0.042)
Parity*month	0.001 (–0.002, 0.003)	0.005 (0.004, 0.007)	0.054 (0.051, 0.057)
Month (linear time variable)	0.006 (0.005, 0.007)	0.002 (0.001, 0.003)	–0.005 (–0.006, –0.003)
Average monthly insurer spending per service user, $			
Parity (pre–post indicator)	–18.303 (–45.120, 8.513)	–3.674 (–12.444, 5.150)	47.674 (23.495, 71.853)
Parity*month	–0.320 (–1.061, 0.420)	0.348 (0.105, 0.591)	6.879 (6.211, 7.547)
Month (linear time variable)	1.646 (–0.110, 3.402)	1.519 (0.943, 2.095)	0.372 (–1.211, 1.955)
Average insurer reimbursement paid per visit, $			
Parity (pre–post indicator)	4.982 (3.241, 6.722)	2.548 (0.435, 4.661)	5.954 (–2.788, 14.697)
Parity*month	–0.297 (–0.345, –0.249)	–0.072 (–0.131, –0.014)	–0.074 (–0.315, 0.168)
Month (linear time variable)	0.102 (–0.012, 0.216)	0.273 (0.135, 0.412)	0.851 (0.279, 1.424)
Average monthly outpatient out-of-pocket spending, $			
Parity (pre–post indicator)	9.091 (–3.326, 21.508)	4.223 (–3.789, 12.236)	16.781 (0.323, 33.239)
Parity*month	0.158 (–0.185, 0.501)	0.070 (–0.152, 0.291)	0.757 (0.303, 1.212)
Month (linear time variable)	0.437 (–0.376, 1.250)	0.164 (–0.361, 0.686)	–0.150 (–1.227, 0.928)
Average out-of-pocket paid per visit, $			
Parity (pre–post indicator)	1.812 (–1.005, 4.628)	1.781 (–0.822, 4.385)	1.156 (–1.691, 4.004)
Parity*month	0.018 (–0.060, 0.095)	0.017 (–0.055, 0.088)	–0.030 (–0.109, 0.048)
Month (linear time variable)	–0.036 (–0.220, 0.149)	–0.064 (–0.235, 0.106)	–0.060 (–0.246, 0.126)

Note. CI = confidence interval. All regressions had a total no. of 129 and included month indicators for seasonal variation. Insurer and enrollee spending regressions adjusted for inflation by using the gross domestic product deflator.

to the online version of this article at http://www.ajph.org, for trend graphs).

MHPAEA was not associated with M/SUD enrollee out-of-pocket costs paid per visit but was associated with an increase in average monthly out-of-pocket enrollee spending for SUD services (parity [pre–post indicator] = 16.781; P = .05; parity*month = 0.757; P < .01). This amounts to an increase of $26 per month in SUD out-of-pocket costs after the first year after parity and $60 by the end of the postparity period. Because the enrollee cost per visit did not increase with parity, this increase in out-of-pocket spending can be attributed to parity's association with the frequency of SUD service use and not increased enrollee cost sharing.

Table 3 shows the regression results regarding the associated impact of MHPAEA

on SUD services, stratified into OUD services and nonopioid SUD services. Our results demonstrate that MHPAEA had a similar impact on both OUD and nonopioid SUD service utilization and spending. For both OUD and nonopioid SUD services, there was an associated increase in the average frequency of monthly service use per service user (OUD services: parity*month = 0.062; P < .01; nonopioid SUD services: parity*month = 0.050; P < .01), an associated increase in average monthly insurer spending (OUD services: parity [pre–post indicator] = 65.32; P < .01; parity*month = 9.58; P < .01; nonopioid SUD services: parity [pre–post indicator] = 47.36; P < .01; parity*month = 6.71; P < .01), and an associated increase in out-of-pocket spending (OUD services: parity [pre–post indicator] = 18.211; P = .03; parity*month = 0.741;

P < .01; nonopioid SUD services: parity [pre–post indicator] = 17.126; P = .05; parity*month = 0.769; P < .01). However, there was no increase in the per-visit average insurer reimbursement paid or out-of-pocket amount paid for either OUD or nonopioid SUD services.

DISCUSSION

In this study, we found a positive association between implementation of MHPAEA and utilization of outpatient behavioral health services. For SUD outpatient visits, the association was particularly strong, which is not surprising given that it was the first federal law to apply parity to SUD treatment. However, our finding that the law also was positively associated with the average frequency of

TABLE 3—Interrupted Time Series Regression of Mental Health Parity and Addiction Equity Act Impact on Utilization and Spending for Opioid Use Disorder and Nonopioid Substance Use Disorder Services in the Employer-Sponsored Insurance Market: United States, 2005–2015

Variable	OUD Services, b (95% CI)	Nonopioid SUD Services, b (95% CI)
Any use of outpatient services, percentage points		
Parity (pre–post indicator)	0.006 (0.004, 0.009)	0.006 (0.002, 0.011)
Parity*month	< 0.001 (0.0002, 0.0004)	< 0.001 (0.0006, 0.0009)
Month (linear time variable)	0.001 (0.0009, 0.001)	0.001 (0.0005, 0.0006)
Average frequency of monthly outpatient service use per service user, no. of services		
Parity (pre–post indicator)	0.008 (–0.137, 0.153)	–0.052 (–0.163, 0.059)
Parity*month	0.062 (0.058, 0.066)	0.050 (0.047, 0.053)
Month (linear time variable)	–0.005 (–0.007, –0.003)	–0.003 (–0.005, –0.001)
Average monthly insurer spending per service user, $		
Parity (pre–post indicator)	65.316 (34.556, 96.075)	47.362 (20.484, 74.240)
Parity*month	9.584 (8.734, 10.434)	6.710 (5.968, 7.453)
Month (linear time variable)	3.323 (1.309, 5.336)	0.879 (–0.880, 2.639)
Average insurer reimbursement paid per visit, $		
Parity (pre–post indicator)	2.655 (–21.444, 26.753)	6.381 (–3.807, 16.569)
Parity*month	0.554 (–0.112, 1.219)	–0.211 (–0.493, 0.070)
Month (linear time variable)	0.267 (–1.311, 1.845)	0.947 (0.280, 1.614)
Average monthly outpatient out-of-pocket spending, $		
Parity (pre–post indicator)	18.211 (1.842, 34.580)	17.126 (–0.030, 34.281)
Parity*month	0.741 (0.289, 1.193)	0.769 (0.295, 1.243)
Month (linear time variable)	0.190 (–0.882, 1.262)	–0.157 (–1.280, 0.966)
Average out-of-pocket paid per visit, $		
Parity (pre–post indicator)	1.781 (–3.467, 7.028)	1.064 (–2.098, 4.225)
Parity*month	0.092 (–0.053, 0.237)	–0.069 (–0.156, 0.018)
Month (linear time variable)	0.130 (–0.214, 0.473)	–0.073 (–0.280, 0.134)

Note. CI = confidence interval; OUD = opioid use disorder; SUD = substance use disorder. All regressions had a total no. of 129, included month indicators for seasonal variation, and were adjusted for inflation by using the gross domestic product deflator for spending outcomes.

mental health outpatient visits is noteworthy. Before the law was implemented, most individuals used mental health services below the preparity quantitative treatment limits.[21] Hence, our expectations were that any reductions in treatment limits attributable to MHPAEA were not likely to affect average use. Yet we still observed a modest relationship between the law's implementation and the frequency of outpatient mental health services at the mean.

MHPAEA also was positively associated with insurer and enrollee average spending per service user, especially for SUD services. However, consistent with earlier studies on the short-term impact of the law on SUD services,[26] we found no association with provider reimbursement amount paid per

visit or enrollee out-of-pocket amount paid per visit. Our findings suggest that the increase in behavioral health spending can be attributed to increased utilization, not higher reimbursement rates or higher out-of-pocket amounts for enrollees. It is important to note that SUD treatment services represented only 1.2% of total health care services after parity. Thus, despite the increase in spending on and utilization of SUD services in the employer-sponsored insurance market, the overall impact of MHPAEA on total spending by insurers was modest—consistent with other recent research.[27]

We found that MHPAEA had similar positive associations for OUD and nonopioid SUD services, increasing our confidence that the overall growth in utilization and spending

for SUD treatment was not driven by more demand attributable to the opioid crisis. A recent analysis found that OUD coverage by commercial insurers has shifted over time and that, in particular, prior authorization requirements for OUD treatment have decreased.[6] The results of this study and previous research suggest that MHPAEA is an important piece of the ongoing efforts to combat the opioid crisis. However, the rates of service use for individuals with SUD and OUD, in particular, remain extremely low and highlight the need for a multifaceted approach to improving access to care.

One provision of MHPAEA requires insurers to apply parity regulations to out-of-network outpatient visits and inpatient visits. Recent research that used MarketScan data found that the law was associated with a 4.3% increase in use of out-of-network outpatient SUD services compared with what would have been expected without parity by 2012.[28] Extending similar analyses to September 2015, we found that the shift to out-of-network providers continued throughout the study period and that this shift occurred for both OUD and nonopioid SUD outpatient services (Appendix D, available as a supplement to the online version of this article at http://www.ajph.org).

Understanding the dramatic shift in out-of-network service use requires disentangling the impacts of MHPAEA from those of provider supply limitations and other barriers to health care access overall. The demand for SUD treatment exceeds the supply of treatment providers,[29] particularly for OUD treatment.[5,30] Though important, parity in insurance coverage alone will not solve ongoing problems with access to behavioral health services.[2] More research is necessary to understand how the increased protections afforded by MHPAEA interact with potential provider shortages, possibly leading to increased use of out-of-network care and costs for consumers.

A methodological advantage of this study is that it extended the postparity period to the third quarter of 2015. Our analyses demonstrated that in the large group employer-sponsored insurance market, the associated impact of parity continued throughout the postparity period and was particularly evident for SUD outpatient services. In our descriptive analyses, the trend lines show no evidence that they were leveling off, and effects on these
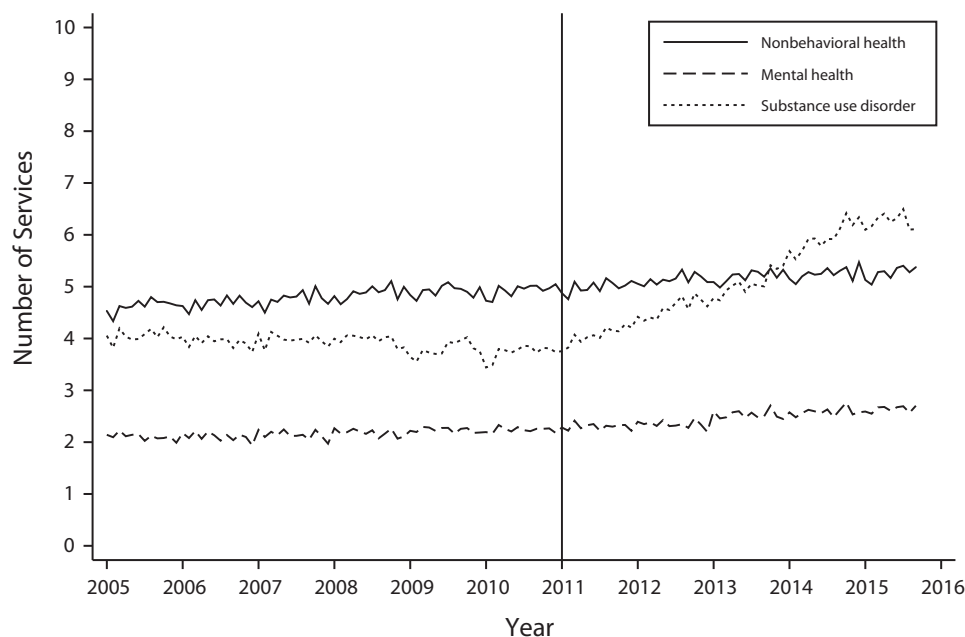
FIGURE 1—Average Number of Outpatient Services Used per Service User by Non–Behavioral Health, Mental Health, and Substance Use Disorder Service Categories Before and After Implementation of the Mental Health Parity and Addiction Equity Act: United States, 2005–2015

services were evident into 2015 (Appendix C, available as a supplement to the online version of this article at http://www.ajph.org).

One possible explanation for these trends is that, although insurers were initially delayed in addressing nonquantitative treatment limits,[2,9] enforcement of these limits may have improved in more recent years. Federal education and guidance on nonquantitative treatment limits may help support this trend,[31,32] and varied systems for monitoring and enforcing compliance with parity are increasingly evident at the state level.[33] However, nonquantitative treatment limits are difficult to regulate, particularly in a managed care environment, and other adjustments to financing structures may be necessary to avoid adverse selection for those with behavioral health conditions.[34] Although federal policy alone is not sufficient to redress stigma,[35] the ongoing effect of parity may improve overall attitudes, further facilitating access to care.

Limitations

One limitation of this study was that, although MarketScan represents many individuals, it is a convenience sample, and plans contributing data shift from year to

year. To account for this limitation, we ran parallel analyses with only continuously enrolled plans and found similar results. Another limitation was that identifying a suitable comparison group to study a policy change that affected the entire US population with employer-sponsored insurance would be difficult. We partially mitigated this limitation by comparing our findings with utilization and spending for non–behavioral health services, but this is not a perfect comparison group. In addition, because the study excluded enrollees with less than 12 months of enrollment in each calendar year, our results may not be generalizable to enrollees with partial enrollment. We also did not consider whether insurers might adjust physical health benefits in response to MHPAEA, but there is a growing consensus that insurers did not respond to MHPAEA in this way.[5] Our total mental health and SUD groups were not mutually exclusive, so it is possible that those with co-occurring SUDs could contribute to our modest findings in the mental health group. Finally, as noted previously, time-series designs are always vulnerable to validity threats attributable to concurrent historical

events (e.g., changes to provider guidelines and policies) or instrumentation effects (e.g., systematic variations in how providers code outpatient visits).

Public Health Implications

MHPAEA is associated with improved access to and utilization of behavioral health outpatient services, and subsequent increases in spending were driven primarily by overall increases in utilization. This study demonstrates the influence that broad policy changes can have on the delivery of behavioral health services at the population level. Although spending on SUD services increased, SUD services make up a small fraction of behavioral health services and are unlikely to affect overall health care spending. More research is needed on the additional burden of out-of-pocket spending for those with OUD, which is attributed to the increased service use that parity has facilitated. Given the opioid crisis, it is critical to assess whether this out-of-pocket spending is a barrier to receipt of SUD outpatient treatment for those with OUD and those with co-occurring mental disorders and SUDs. *AJPH*

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