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The Mental Health Parity and Addiction Equity Act (MHPAEA) Evaluation Study: Impact on Quantitative Treatment Limits (QTLs)

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Abstract

Objective—The Mental Health Parity and Addiction Equity Act (MHPAEA) significantly changed regulations governing behavioral health (BH) benefits for large, commercially-insured employers. Pre-MHPAEA, many plans covered only a specific number of days of or visits for BH treatment; post-MHPAEA, such quantitative treatment limits (QTLs) were allowed only if they were “at parity” with medical/surgical limits. This study assesses MHPAEA’s effect on the prevalence of BH QTLs.

Methods—Analyses used 2008-13 specialty BH benefit design data for Optum large-group plans, both “carve-outs” (N=2,257 plan-years, corresponding to 1,527 plans and 40 employers) and “carve-ins” (N=11,644 plan-years, 3,569 plans, 340 employers). Descriptive statistics were calculated for limits existing at parity implementation, distinguished by accumulation-period (annual or lifetime), level of care (inpatient, intermediate, outpatient), unit (days, visits, or courses), condition, and network level. Proportions of plans using specific limits during the pre- (2008-2009), transition (2010), and post-parity (2011-2013) periods were compared using Fisher’s exact tests.

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Results—Pre-parity, the most common QTLs were annual visit or day limits. Accounting for overlap in limit types, 89% of regular carve-out plans, 90% of in-network-only carve-outs, and 77% of carve-in plans limited outpatient visits; 66% of regular carve-out plans, 74% of in-network-only carve-outs, and 73% of carve-ins limited inpatient/intermediate days. Post-parity, QTLs almost entirely disappeared ($p < .001$).

Conclusion—Before MHPAEA, QTLs were common. Post-implementation, virtually all plans dropped such limits, suggesting MHPAEA was effective at eliminating QTLs. However, increasing access to BH care will mean going beyond such QTL changes and looking at other areas of BH benefit management.

Introduction

Historically, insurance coverage in the United States was less generous for mental health (MH) and substance use disorders than for medical conditions. State parity laws have been limited in remedying these inequities because the Employee Retirement Income Security Act of 1974 (ERISA) exempts self-insured firms from state insurance mandates, thereby excluding 61% of commercially insured patients (1). Although the federal Mental Health Parity Act of 1996 included self-insured groups, it required parity only for annual and lifetime dollar limits, which led many employers to change benefit design to be more restrictive in other ways, such as introducing quantitative treatment limits, or QTLs (2). In 2001, the Federal Employees Health Benefits Program (FEHBP) was required to offer comprehensive parity for within network service use to its 8.7 million beneficiaries (3).

In 2008, Congress passed the Mental Health Parity and Addiction Equity Act (MHPAEA), effective for plans renewing on or after January 1, 2010 (4). With a few exemptions, MHPAEA prohibited large employers offering behavioral health (BH) coverage from separately accumulating deductibles and out-of-pocket maximums or applying more restrictive financial requirements (e.g., coinsurance, copayments) than the “predominant” requirements applying to “substantially all” medical/surgical benefits. Parity was also required for QTLs (e.g., number of visits or days of coverage) and care management and applied to both in-and out-of-network services.

The MHPAEA Interim Final Rule (IFR) was issued February 2, 2010, taking effect for most plans on the first day of their plan year on or after July 1, 2010 (so plans renewing on a calendar year cycle had to comply by January 1, 2011). The IFR introduced the term “non-quantitative treatment limits” (NQTLs) and clarified the management techniques included under parity, such as pre-authorization. The MHPAEA Final Rule was issued November 2014, retaining the NQTL provisions and clarifying interactions of MHPAEA with the Affordable Care Act.

MHPAEA and its regulations went beyond prior parity laws by being nationally applicable, applying to self-insured as well as fully-insured plans, explicitly including substance use disorders and requiring parity in financial requirements, QTLs and NQTLs. The impact of MHPAEA on QTLs is of particular interest for two reasons. First, MHPAEA may have resulted in more drastic changes to QTLs compared to other benefit features, because, historically, QTLs were not used for medical coverage (5). Second, removing QTLs may

increase utilization among enrollees who previously used the allowed level of care (6,7), typically enrollees with severe mental illness or chronic conditions, who often have greater need for resource-intensive services and are thus the most vulnerable (8,9).

Determining whether and how plan benefit design changed is the first step to evaluating MHPAEA's impact. QTL changes could significantly reduce expenses for patients whose service needs exceeded pre-MHPAEA limits. If QTLs changed significantly with MHPAEA implementation, then we would know that the legislation was effective in improving potential financial access even if effects on utilization were modest.

The Assistant Secretary of Planning and Evaluation issued a report on the early effects of MHPAEA, including benefit design plans from 252 employers, suggesting that QTL use declined from roughly half of plans in 2009 to around 6-8% by 2011 (4). In the only peer-reviewed study on this topic, Horgan and colleagues used plan-reported data from a national sample of 939 insurance products, reporting that 28% of plans used annual outpatient visit limits in 2009, dropping to 4% in 2010 (10). They did not report on inpatient or intermediate care limits, lifetime or episode limits or in-network versus out-of-network limits.

The current study was conducted in collaboration with researchers from the BH division of Optum, which contracts with approximately 2,500 facilities and 130,000 providers to serve 2500 customers (including UnitedHealthCare and other commercial medical vendors), with 60.9 million members across all U.S. states and territories. Optum administrative databases were used to assess (a) how common BH care limits were pre-MHPAEA, (b) the type and extent of the actual limits, and (c) how and when they changed post-MHPAEA. Our study adds to the published literature on this topic by using benefit design information from actual claims processing engines rather than plan-reported data; using a longer study period (to allow for potential anticipatory and lag effects) and a larger sample; distinguishing “carve-in” from “carve-out” plans, for which the administrative processes required to comply with parity are entirely different; comparing QTLs for in-network (INN) versus out-of-network (OON) services, which may be differentially affected, hence changing patient incentives for staying within provider networks for their care; and including greater detail about different types of limits affected by MHPAEA (e.g., lifetime vs. annual vs. episode limits; limits affecting MH only, substance use disorders only or combined), to provide information about which user subpopulations were most affected by MHPAEA's QTL provisions. This large-scale, detailed, and reliable assessment should aid policy makers in evaluating MHPAEA's real impact. Our linked enrollment files also allow us to report the number of lives affected by each limit, which is a better measure of the overall magnitude of the improvements in financial access for patients than the number of plans affected.

Methods

Data sources

This study uses 2008-2013 data from Optum®, a fully owned subsidiary of UnitedHealth Group. These data included a “Book of Business” describing plan and employer characteristics (e.g., employer size, industry, etc.) and information about specialty BH benefit design from two Optum databases, Facets (containing information for carve-outs)

and The Online Processing System (TOPS; with information for carve-ins). We linked to eligibility information to calculate the numbers of enrollees affected by each QTL.

Study cohorts

The carve-out sample initially included all plans from all employers who contracted with Optum for managed BH care in a carve-out arrangement (meaning that medical benefits were covered separately, by another insurer) at any time during 2008-2013. Plans were excluded if data were not available from the Facets database (due to prior mergers); if they had research restrictions; if the employer was “small” (had 50 or fewer employees); if it was a collective bargaining group; if renewal was not on the calendar year; if BH was not covered (e.g., employee assistance program-only); if the plan had no enrollees, was not in Optum's Book of Business, or was non-standard (retiree or supplemental). These exclusions ensured that the study plans would be subject to MHPAEA compliance on a standard timeline. This process led to a final sample of 40 employers, with 1,527 unique plans, corresponding to 2,257 plan-years (see Appendix Figure A1 for details).

The carve-in sample included all plans offered by employers with Optum carve-in plans during 2009 or during at least one year between 2008-9 and one year between 2010-12. After excluding plans using the criteria above, the final sample included 340 employers, with 3,569 plans corresponding to 11,644 plan-years (see Appendix Figure A2).

The unit of analysis is the plan-year. For example, a plan active in three years would contribute 3 observations to the sample. For the carve-out sample, analyses are stratified by whether plans covered only in-network care (INN-only plans) or in-network and out-of-network care (INN/OON plans). INN and OON limits were always combined for carve-in plans so we do not stratify.

Sensitivity analyses were conducted using longitudinal subsamples (cutting sample sizes approximately in half – see footnotes in Appendix Figures A1 and A2).

Measures

For each plan in each year, we constructed measures of QTLs by time period (annual vs. lifetime), level of care (inpatient, intermediate, outpatient), unit (days, visits, or courses), condition (MH vs. substance use disorders) and where relevant, network level (INN vs. OON). Based on these measures, we created indicators for the use of each type of limit (e.g., whether a plan had a limit on inpatient days for BH treatment). Not included are limits related to detox services, which were rare, or dollar limits, which MHPA had previously required to be at parity and were uncommon.

In some cases limits were combined across conditions or levels of care. For example, often intermediate and inpatient care were included in the same limit, with an intermediate day (e.g. residential treatment or partial hospitalization), counted as part of an inpatient day. Most often, MH and substance use disorder care were counted together toward an overall BH limit. Totals are provided to account for plans that had any limits within a given category (e.g., the inpatient total counts plans that either had a combined or a separate MH and/or substance use disorder limit).

Data analysis

Descriptive data report employer size, industry, census region, plan type and funding type. Cross-tabs with Fisher's exact tests were used to test for significant associations between proportions of plans with each specific limit and time period (pre-parity = 2008-9; transition=2010; post-parity=2011-13). Tests were two-sided and used a .05 cutoff for Type I error. Median, minimum and maximum values for limits existing pre-parity illustrate the distribution of care limits used, and the number of unique enrollees in sampled Optum plans affected by each limit in 2009 quantify the population subject to these limits. Plans not covering a particular service are excluded from the analysis of that outcome (Web Appendix Table A1 presents the number of carve-out plan-years excluded for each type of service; in data not shown, only four carve-in plans did not cover specific services).

Results

Carve-out employers were mostly very large – over half had 10,000 or more employees – while carve-in employers were smaller, with over half having fewer than 5,000 employees (see Appendix Table A2 for employer and plan characteristics). Diverse industries were represented. Most carve-out plans were preferred provider organizations, whereas most carve-ins were point-of-service plans. The vast majority of plans were “administrative services only,” i.e., self-insured.

Table 1 summarizes the percent of plans with limits by parity period. Pre-parity, 66% of carve-out plans with INN/OON benefits had an annual limit on inpatient and/or intermediate care for MH and/or substance use disorders; 89% had an annual limit pertaining to outpatient visits. In 2009, 991,150 individuals had a limit on any inpatient or inpatient/intermediate services, and over 1 million on outpatient visits. For carve-out plans with INN-only benefits, 74% (146,459 enrollees in 2009) had an annual limit on inpatient and intermediate care, and 90% (179,738 2009 enrollees) on outpatient visits. For carve-in plans, 73%, covering almost three million people in 2009, had a pre-parity annual inpatient and/or intermediate limit. Pre-parity, 77% (over 3 million enrollees) had an annual outpatient limit. Appendix Table A3 shows these percentages were similar when the sample was restricted to employers (carve-outs) or plan (carve-ins) that could be tracked longitudinally.

Table 2 reports changes in specific QTLs for carve-out plans. For plans with INN/OON benefits, the most common pre-parity inpatient/intermediate limits were combined INN and OON annual day-limits, with a median of 30 days. The most common outpatient limit was a combined INN/OON, BH limit, with a median of 45 visits. Almost all limits disappeared during 2010, the year of transition to parity. By 2011, virtually all QTLs had disappeared. Limits were just slightly more common pre-parity for INN-only plans. Median values were the same for inpatient/intermediate, but slightly lower for outpatient visits. (For these plans MH annual limits were more common, whereas for substance use disorders, lifetime limits were more prevalent.) By 2011, virtually all limits in all service categories disappeared. Appendix Table A4 shows the analogous percentages for the smaller, longitudinal sample.

For carve-in plans (Table 3), the most common inpatient/intermediate limit was a BH combined annual day limit (median = 30). The most common outpatient limit was annual

BH combined visits (median = 30). As above, there was a substantial decrease in the number of plans with QTLs in the transition period, and an even greater drop post-parity, although compared to carve-out plans, a larger percentage of carve-in plans retained some limits. Appendix Table A5 shows the analogous percentages for the smaller, longitudinal sample.

Discussion

The passage of MHPAEA, the most far-reaching and comprehensive parity law to date, had substantial impacts on QTL use among managed behavioral health organizations (MBHOs). Before MHPAEA, the majority of both carve-in and carve-out plans in our sample limited BH visits, regardless of a member's diagnosis. In 2010, most QTLs were dropped, and by 2011, virtually all plans had dropped QTLs on BH care. Plans with limits post-parity presumably include a mix of plans with analogous medical limits and plans that had not yet complied.

Our findings are limited by the lack of a control group to isolate the effects of parity from secular trends. Control group candidates such as small employers and fully-insured plans in states with prior parity laws were considered, but ultimately deemed inappropriate comparisons and/or too few to provide meaningful controls. However, the elimination of QTLs was consistent across plans and happened shortly after enactment of the law. It is reasonable to conclude that this large effect would not have occurred in the absence of this legislation.

Our study is also limited in including data from only one MBHO and further restricting the sample based on certain inclusion and exclusion criteria. However, Optum was the largest MBHO in the U.S. during the study period and we have no reason to believe that our sample selection criteria would have introduced systematic biases, because most of the criteria were designed to limit the sample to plans for which MHPAEA was relevant. Plans excluded due to timing of implementation (e.g., collective bargaining and non-calendar year plans) also eliminated QTLs by 2011. Our study included both carve-in and carve-out plans, increasing the generalizability. Our sampled plans covered millions of Americans and are notably diverse in terms of employer size, employer industry, and medical plan type.

Our findings for the early implementation period are consistent with those of Horgan et al. (10) and the ASPE report (4), although the percentages of plans limiting BH visits pre-parity were comparatively smaller, and the percentages with remaining QTLs post-parity were larger than observed in the current study. Although numerous differences in data sources, sample inclusion criteria and stratification might account for these differences, one possible explanation is that our study period started in 2008, prior to possible anticipatory effects, and ended in 2013, allowing for lag effects.

Whereas previous studies did not distinguish between carve-in and carve-out plans, we found more complete removal of QTLs in carve-out plans. This may have been in part due to the significant administrative hurdle posed by MHPAEA to carve-out plans – because medical and BH benefits are administered by separate companies, it is difficult for carve-out vendors to know exactly what medical benefits are in place. Optum now requests and tracks

this information from employers annually, but for QTLs the easiest solution was simply removal from all plans. It is worth noting that this administrative burden led to a reduction in the number of employers using the carve-out model. The increased popularity of carve-in models in commercial insurance and less complete removal of QTLs for CI plans means that a relatively larger number of enrollees are affected. Understanding the administrative and typical coverage differences between these two BH care models could aid policy makers to better tailor future improvements for one model vs. another, and to anticipate unintended consequences, such as impacts to the viability of the carve-out model.

Use of claims processing databases linked to eligibility files allowed us to look more closely at the ways limits were actually combined or separate across conditions, service types and network level, to document the full range of limits used pre-parity (including lifetime courses and days per course), and to estimate the numbers of enrollees affected by limits. This information provides a greater understanding of how many patients and which subpopulations benefited most from MHPAEA's QTL provision and were most likely to have experienced greater access and more dramatic changes in treatment patterns post-implementation. For example, among carve-out plans with INN/OON benefits, only about 1% imposed a specific INN limit on annual outpatient BH visits pre-parity, yet about 40% did so for OON care, suggesting that we might expect to see a shift from INN to OON services post-parity among this patient population.

Our findings have implications for both plans and patients. Use of QTLs is associated with moderate plan cost-savings (6,7), suggesting that plan expenditures may have increased when plans dropped QTLs. For patients, the removal of QTLs may be one of the biggest changes affecting access to care because the impact of parity on financial requirements was modest (10). Among our study plans, nearly one million carve-out enrollees and nearly 3 million carve-in enrollees were subject to inpatient/intermediate day limits and over 1 million carve-out enrollees and over 3 million carve-in enrollees were subject to outpatient visit limits pre-parity. Our findings suggest that nearly all of these enrollees were unconstrained by QTLs post-parity. In carve-in claims analyses not shown here, approximately 15% of outpatient users and 5% of inpatient users had sufficiently high levels of utilization that they were likely to have reached their limits prior to parity. Evidence from Peele et al.'s study suggests that among enrollees subject to QTLs, those with diagnoses of depression, bipolar disorder, or psychosis were most likely to reach their inpatient and outpatient limit thresholds pre-parity (7). Additionally, Peele et al. found that patients who reached their inpatient limit were more likely than other patients to be children (7). One of the most meaningful impacts of MHPAEA is improved insurance protection for needed specialty BH care for children and adults with depression, bipolar disorder, or psychosis, who were most likely to reach their inpatient and outpatient limit thresholds pre-parity.

Conclusion

MHPAEA was associated with elimination of almost all annual and lifetime limits on the number of days/visits or treatment courses for both MH and SUD treatment. This was true for both carve-out and carve-in samples, across diverse sets of services, and across diverse types of QTLs (e.g., limits on visits, days, or courses of treatment). The changes impacted

the benefits of over 1 million carve-out and 3 million carve-in subscribers in the study plans. One of the most meaningful impacts of MHPAEA might be increased access to needed specialty BH care for children and adults with depression, bipolar disorder, or psychosis, who were most likely to reach their inpatient and outpatient limit thresholds pre-parity.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1
Summary of Associations of MHPAEA with Changes in Percent of Plans with any Annual Limits

Any Annual Limits	Pre-Parity (2008-09)		Transition (2010)		Post-Parity (2011-13)		P-value	2009 enrollees affected	
Carve-Out Plans with In- and Out-of-Network Benefits (N=2086 plan-years) ¹	n	%	n	%	n	%		n	%
Inpatient or Intermediate*	209	66	36	10	3	<1	<.001	991,150	72
Outpatient visits	280	89	38	10	3	<1	<.001	1,188,382	86
Carve-Out Plans with In-Network Benefits Only (N=171 plan-years) ²	n	%	n	%	n	%		n	%
Inpatient or Intermediate*	43	74	1	3	0	0	<.001	146,459	42
Outpatient visits	52	90	5	15	0	0	<.001	179,738	51
Carve-In Plans (N = 11,644 plan-years) ³	n	%	n	%	n	%		n	%
Inpatient or Intermediate*	2652	73	204	9	152	3	<.001	2,824,326	73
Outpatient visits	2787	77	206	9	143	3	<.001	3,035,192	78

Notes: P-values are from Fisher's Exact Test. Plan years were included in the counts here if the plan had any limit for the relevant level of care, for MH and/or substance use disorders. Carve-out enrollees in in-and out-of-network plans = 1,376,267; in-network only plans = 352,798. Carve-in total enrollees = 3,871,042.

¹ Of these 2,086 total plan-years, 316 were in the pre-parity, 367 in the transition, and 1,403 in the post-parity period.

² Of these 171 total plan-years, 58 were in the pre-parity, 34 in the transition, and 79 in the post-parity period.

³ Of these 11,644 total plan-years, 3,615 were in the pre-parity, 2,304 in the transition, and 5,725 in the post-parity period.

* Intermediate care accumulates against the inpatient limit using standard substitution of benefits ratios: 1 inpatient day = 1.5 residential treatment days, 2 day treatment/partial hospital days, 5 structured outpatient treatment days, or 10 sober living/transitional living days.

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Table 2
Associations of MHPAEA with Changes in Percent of Plans with BH Quantitative Treatment Limits, among Carve-Out Plans

Plans with In- and Out-of Network Benefits (N=2,086 plan-years)	Pre-Parity (2008-09) N=316		Transition (2010) N=367		Post-Parity (2011-13) N=1,403		P-value	Pre-Parity Limit Information, among plans with the relevant limit			
	n	%	N	%	n	%		Median	Min, Max	n	%
<i>Inpatient hospital days, annual</i>											
BH combined	12	4	1	<1	0	0	<.001	45	30, 45	26,048	2
Mental Health only	4	1	0	0	0	0	<.001	37	30, 45	1,776	<1
Substance Use Disorder only	4	1	0	0	0	0	<.001	30	30, 30	1,776	<1
<i>Inpatient or Intermediate days, annual</i>											
BH combined	88	28	11	3	0	0	<.001	30	30, 60	236,137	17
Mental Health only	71	23	9	3	0	0	<.001	45	14, 120	78,852	6
Substance Use Disorder only	91	29	13	4	0	0	<.001	30	10, 45	116,036	8
<i>Intermediate days, annual</i>											
BH combined	2	1	4	1	0	0	<.001	60	60, 60	20,867	2
Mental Health only	4	1	0	0	0	0	<.001	75	60, 90	1,776	<1
Substance Use Disorder only	18	6	0	0	0	0	<.001	60	21, 95	2,282	<1
<i>Inpatient hospital admissions, lifetime</i>											
Substance Use Disorder only	4	1	0	0	0	0	<.001	2	2, 3	62,047	5
<i>Inpatient or Intermediate days, lifetime</i>											
BH combined	10	3	1	<1	0	0	<.001	60	60, 90	30,023	2
<i>Inpatient or Intermediate admissions, lifetime</i>											
Mental Health only	1	<1	0	0	0	0	.152	2*	-	789	<1
Substance Use Disorder only	54	17	3	1	0	0	<.001	2	2, 2	156,158	11
<i>Outpatient visits, annual</i>											
BH combined	97	31	15	4	0	0	<.001	45	20, 60	177,579	13
Mental Health only	90	29	9	3	0	0	<.001	45	15, 60	110,532	8
Substance Use Disorder only	95	30	13	4	0	0	<.001	40	20, 60	108,609	8
<i>Outpatient courses of treatment, lifetime</i>											

Plans with In- and Out-of Network Benefits (N=2,086 plan-years)	Pre-Parity (2008-09) N=316	Transition (2010) N=367	Post-Parity (2011-13) N=1,403	P-value	Pre-Parity Limit Information, among plans with the relevant limit	2009 enrollees affected
	n	%	N	%	n	%
<i>All services courses of treatment, lifetime</i>						
Substance Use Disorder only	2	<1	0	0	2	14,829
Substance Use Disorder only	25	8	0	0	2	115,420
In-Network, Specific Limit Types						
<i>Inpatient hospital days, annual</i>						
BH combined	1	<1	1	<1	60*	123
Mental Health only	159	<1	21	1	60*	123
Substance Use Disorder only	2	1	2	<1	60	894
<i>Inpatient days per admission</i>						
SUD only	1	<1	0	0	3*	789
<i>Inpatient or Intermediate days, annual</i>						
Mental Health only	2	1	0	0	45	273
Substance Use Disorder only	2	1	0	0	28	273
<i>Inpatient/Intermediate admissions, lifetime</i>						
Substance Use Disorder only	4	1	0	0	2	17,669
<i>Outpatient visits, annual</i>						
BH combined	4	1	0	0	35	1,548
Mental Health only	1	<1	0	0	35*	0
Substance Use Disorder only	3	1	1	<1	45	786
Out of Network, Specific Limit Types						
<i>Inpatient hospital days, annual</i>						
BH combined	1	<1	1	<1	30*	123
Mental Health only	2	1	2	1	60	894
Substance Use Disorder only	2	1	2	1	30	894
<i>Inpatient or Intermediate days, annual</i>						
BH combined	28	9	7	2	30	310,004
Mental Health only	5	2	0	0	30	319,443
Substance Use Disorder only	2	1	0	0	6	273

Plans with In- and Out-of Network Benefits (N=2,086 plan-years)	Pre-Parity (2008-09) N=316		Transition (2010) N=367		Post-Parity (2011-13) N=1,403		P-value	Pre-Parity Limit Information, among plans with the relevant limit	2009 enrollees affected		
	n	%	N	%	n	%					
<i>Inpatient / Intermediate admissions, lifetime</i>											
Substance Use Disorder only	12	4	2	1	0	0	<.001	2	1, 2	107,293	8
<i>Outpatient visits, annual</i>											
BH combined	127	40	24	7	3	<1	<.001	35	10, 100	601,475	44
Mental Health only	17	5	4	1	0	0	<.001	28	17, 60	350,266	25
Substance Use Disorder only	8	3	0.0	0	0	<.001	23	17, 28	25,693	2	
Plans with In-Network Benefits Only (N=171 plan-years), Specific Limit Type											
	n	%	N	%	n	%	P-value	Median	Min, Max	n	%
<i>Inpatient or Intermediate days, annual</i>											
BH combined	39	67	1	3	0	0	<.001	30	20, 50	126,853	36
Mental Health only	4	7	0	0	0	0	.023	45	31, 60	10,566	3
Substance Use Disorder only	2	4	0	0	0	0	.152	45	45, 45	5	<1
<i>Inpatient or Intermediate days, lifetime</i>											
BH combined	4	7	0	0	0	0	.024	75	60, 90	9,346	3
<i>Inpatient or Intermediate courses, lifetime</i>											
Substance Use Disorder only	9	16	4	12	0	0	<.001	2	2, 2	11,093	3
<i>Outpatient visits, annual</i>											
BH combined	40	69	1	3	0	0	<.001	40	20, 50	126,853	36
Mental Health only	12	21	4	12	0	0	<.001	28	20, 30	21,659	6
Substance Use Disorder only	2	4	0	0	0	0	.152	20	20, 20	5	<1
<i>Outpatient courses, lifetime</i>											
Substance Use Disorder only	8	14	4	12	0	0	<.001	2	2, 2	11,093	3
<i>All services courses, lifetime</i>											
Substance Use Disorder only	2	4	0	0	0	0	.152	2	2, 2	8,872	3

Note: P-values are from Fisher's Exact Test. The table does not include rows for types of limits that did not exist in the data (e.g., annual admission limits for any level of care, INN).

* denotes that median is from a single plan (minimum and maximum values not relevant).

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Table 3
Associations of MHPAEA with Changes in the Percent of Plans with BH Quantitative Treatment Limits, among Carve-In Plans

Limit Type	Pre-Parity (2008-09) N=3,615		Transition (2010) N=2,304		Post-Parity (2011-13) N=5,725		P-value	Pre-Parity Limit, among plans with relevant limit			
	n	%	n	%	n	%		Median	Min, Max	n	%
<i>Inpatient or intermediate days, annual</i>											
BH combined	1512	42	139	6	108	2	<.001	30	7, 175	1,417,517	37
Mental Health only	1087	30	61	3	42	1	<.001	30	8, 165	1,388,636	36
Substance Use Disorder only	924	26	38	2	20	<1	<.001	30	6, 183	1,143,494	30
<i>Inpatient or intermediate days, lifetime</i>											
BH combined	156	4	10	<1	24	<1	<.001	90	30, 190	217,998	6
Mental Health only	39	1	6	<1	4	<1	<.001	90	45, 150	52,040	1
Substance Use Disorder only	190	5	16	1	3	<1	<.001	60	10, 120	261,042	7
<i>Inpatient or intermediate admissions, lifetime</i>											
Substance Use Disorder only	4	<1	2	<1	2	<1	.037	2	2, 2	15	0
<i>Inpatient or intermediate days per admission</i>											
BH combined	30	1	13	1	16	<1	<.001	30	30, 45	10,188	0
Substance Use Disorder only	28	1	6	<1	12	<1	<.001	28	7, 45	3,645	0
<i>Outpatient visits, annual</i>											
BH combined	1923	53	160	7	110	2	<.001	30	3, 90	1,993,811	52
Mental Health only	846	23	44	2	35	1	<.001	31	5, 60	1,025,377	26
Substance Use Disorder only	661	18	34	1	21	<1	<.001	35	5, 130	730,892	19
<i>Outpatient visits, lifetime</i>											
BH combined	50	1	1	<1	1	<1	<.001	150	30, 400	112,324	3
Mental Health only	2	<1	0	0	0	0	.096	90	90, 90	1,866	0
Substance Use Disorder only	96	3	2	<1	4	<1	<.001	60	20, 120	95,795	2

Note: P-values are from Fisher's Exact Test. The table does not include rows for types of limits that did not exist in the data. For carve-in plans, limits were always combined INN and OON network (if there were OON benefits). Total 2009 enrollees for all carve-in plans = 3,871,04