Published in final edited form as:
Med Care. 2006 June ; 44(6): 506–512. doi:10.1097/01.mlr.0000215890.30756.b2.

The Impact of Parity on Major Depression Treatment Quality in the Federal Employees Health Benefit Program

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Introduction

Historically, insurance coverage for mental health and substance abuse (MH/SA) services has been more restrictive than that for general medical conditions.[1] These more restricted benefits, such as service or spending limits and higher cost-sharing, have been criticized for their inflexibility in covering care needed for the sickest patients.[2,3] This also conflicts with the principal role of insurance to insure against large financial losses due to illness.

Parity typically mandates insurance coverage for psychiatric disorders to be equal that for general medical conditions. Despite considerable legislative activity towards parity, full parity has often been elusive. The 1998 federal Mental Health Parity Act (MHPA) prevented group health plans from placing lower annual or lifetime dollar limits on mental health benefits compared to medical or surgical benefits,[4] and covered all psychiatric diagnoses described in the Diagnostic and Statistical Manual of Mental Disorders—IVth edition (DSM-IV)[5] However, group health plans could impose some mental health benefit restrictions that differed from medical or surgical benefits—such as limits on the number of covered visits or different cost sharing arrangements.[4,6] Additionally, many states have enacted parity legislation for private insurance plans. These state laws differ in whether substance abuse is included in the legislation or if other exemptions apply.[7] Most states in fact have not legislated full parity. Even when states enact strong parity statutes, they do not apply to a large proportion of workers covered by self-ensured employers who are exempt under the federal Employee Retirement Income Security Act (ERISA).

Concerns about parity focus on increases in insurance costs. However, managed mental health care organizations, particularly behavioral health carve-outs, have changed the way mental health services and costs are controlled[8] and have been widespread since the 1990's.[9] Under managed behavioral health care, evidence has accrued that parity does not have to cause major cost increases.[10-14] It therefore became increasingly evident that benefit limits may not be necessary for containing costs under managed behavioral health care arrangements.[3,15,16] The use of managed behavioral health care organizations, however, creates concerns that patients may not receive needed care.[14]

Still unclear in this policy debate is the net effect on quality between the opposing forces of parity (which leads to an expansion of insurance benefits) and managed care (which uses various mechanisms to restrain benefits).[17] Parity may improve quality by expanding access to needed treatments, but not if managed care organizations are too severe in their rationing of health care through the use of stringent prior authorization procedures, aggressive limiting of provider panels, or risk sharing for providers.

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In June 1999 President Clinton directed the Office of Personnel Management (OPM) to implement parity in the Federal Employees' Health Benefits Program, (FEHBP) thereby expanding MH/SA coverage in the program. The FEHBP, with approximately 8.5 million enrollees, is the largest U.S. employer-based insurance program. FEHBP plans are not subject to ERISA exemptions, nor state parity laws. Additionally, the FEHBP parity is full parity and therefore more comprehensive than many state parity laws.

In this paper, part of the first national evaluation of comprehensive parity, we examine the association between parity implementation and changes in the major depressive disorder (MDD) treatment quality for enrollees in **six** geographically diverse FEHBP plans.

MDD was chosen as a tracer condition for several reasons. It is prevalent[18] and associated with considerable functional impairment,[18-20] including lost work productivity,[21-23] and death.[24] Also, while the value of MDD treatment has improved in the 1990's, [25] it continues to be an undertreated illness.[18,26]

Methods

The study used de-identified information of insurance enrollees and was approved by the Harvard Medical School Institutional Review Board.

The FEHB Program's Parity Policy

Effective January 1, 2001, the OPM required all participating plans to have MH/SA coverage that is “identical with regard to traditional medical care deductibles, co-insurance, co-pays and day and visit limitations” to coverage for physical health services.[27] Parity applied **for all DSM-IV diagnoses** but only to in-network benefits. Plans could keep cost sharing levels and benefit limits the same as those used in 2000 for services delivered by out-of-network providers. The OPM encouraged plans to use managed care techniques to control any increases in MH/SA service utilization and expenditures. Some plans had already contracted with managed behavioral health care organizations to control MH/SA costs before parity was adopted; the OPM encouraged the remaining plans to do so after parity. In the six plans studied here, prior to parity implementation, benefits included 40% cost sharing and 100 day annual limits for inpatient services; $25 cost sharing and 25 visit annual limits for outpatient services. Post parity, there was no inpatient cost sharing or annual inpatient or outpatient day/visit limits. Further, outpatient cost-sharing decreased to $15 per visit. All plans implemented the benefit changes on January 1, 2001.[28]

Study Population

We studied adult, enrollees (ages 18−64) who were enrolled at least 10 of 12 months for each of four calendar years (1999−2003) in **six** FEHBP health plans; all of the plans included in the analysis were PPO/POS plans. One was located in the western portion of the U.S. (PPO-W), two in the northeast (PPO-NE1 and PPO-NE2), two in the mid-Atlantic (PPO-MA1 and PPO-MA2) and one in the south (PPO-S). The **six** plans were selected on the basis of geographic location, breadth of parity in state law, size of enrollee population and interest in collaborating on the evaluation. Together, they included **over 365,000 enrollees**. **Four** plans had already contracted with managed behavioral health organizations prior to parity implementation. After parity, one of the remaining two (PPO-W) contracted with a managed behavioral health organization, the other (PPO-MA2) did not.

Data Sources

From each plan, we obtained four years of archival enrollment data, medical and behavioral health claims/encounter data and pharmacy claims, including data for two years before and after parity implementation.

Establishing the MDD cohort

In order to enable a more nuanced understanding of MDD treatment quality, we examined indicators of receiving quality care within a calendar year as well as within an episode of acute phase outpatient treatment. Although published guidelines recommend acute and continuation phase treatment of MDD,[29-31] we focused on the acute phase because it typically is the period of most intensive treatment needs. Guideline recommendations during this phase are clear in determining minimum intensity/frequency and duration of treatments that can be applied to claims data analyses. The acute phase is considered to be the duration of time needed to resolve a patient's depressive symptoms. In efficacy trials this period is often estimated to be three months. Because we cannot determine an individual patient's clinical recovery in claims data, and that usual care there might be less efficient (due to delays in appointment scheduling, missed appointments, etc.), we defined the acute phase period as lasting 120 days (i.e., four months).

We applied a diagnostic algorithm to establish the depression cohort. The cohort included those with a diagnosis of MDD (ICD-9 codes 296.2 or 296.3) on claims for at least two separate service dates (to confirm the diagnosis). If the MDD diagnosis was based on an outpatient claim, then the diagnosis must be either primary or secondary; if inpatient, we required a primary diagnosis of MDD so as to reflect the reason for hospitalization. To balance maximizing the true positive while minimizing the false negative rates and to include persons with MDD who are perhaps more difficult to engage in treatment, we also included persons having only one MDD diagnosis as long as it was either the primary diagnosis of hospitalization, or it represented at least 50% of the outpatient MH/SA claims for an individual. Because this is a study examining changes in treatment quality for persons with MDD as their primary psychiatric diagnosis, we excluded enrollees who received any diagnosis of schizophrenia or bipolar disorder during the four years.

We included only persons who received an MDD diagnosis (rather than all depressive disorders). We did so because face validity would suggest that persons receiving a diagnosis of MDD, the most severe of the depressive disorders, are more likely to be correctly identified in administrative data. Moreover, there are no guidelines for treating other, less severe depression-spectrum disorders.

Establishing Annual Treatment and Acute Phase Episode Cohorts

In the calendar year analyses, persons were included in the MDD cohort each calendar year they met the above cohort criteria algorithm. Thus, persons who were in any stage of MDD treatment (i.e., acute, continuation or maintenance) were included in the analysis for that year. In the acute phase episode analyses, we examined only treatments received for persons specifically in an acute phase of MDD outpatient treatment. Therefore, we required a period of at least three months without MH/SA claims before initiation of a new MDD treatment episode in the outpatient setting to ensure that treatments received represented a new episode of outpatient care. After that period, two MDD diagnoses on different service dates were required to begin an MDD acute phase. An acute phase also was considered to have started if the first observed MH/SA visit was coded as a depressive disorder diagnosis (ICD9 codes 296.2, 296.3, 300.4, 301.12, 309.1, and 311) and followed by a first MDD diagnosis within 30 days of the initiating the depressive MH/SA treatment. In both scenarios, the MDD episode was considered to have begun with the first depressive diagnosis observed (e.g., MDD

specifically or one of the other depressive diagnoses above). An acute phase outpatient episode was also initiated the day after discharge from hospitalizations in which MDD was the primary diagnosis.

An outpatient acute phase episode was considered to have ended if one of the following occurred: 1) 90 days of no outpatient MH/SA visit or no days supplied of mental health medications, 2) 120 days (i.e., 4 months) after acute phase treatment started, or 3) an inpatient MH/SA hospitalization. Subsequent outpatient MDD visits after hospitalization were considered to be a new outpatient acute phase episode.

We considered only those acute phase episodes that ended prior to and those that started after parity implementation. We did not include acute phase episodes that began before and continue after parity implementation, nor did we include episodes in which we could not observe the first four months of treatment prior to December 31, 2002.

Dependent variables: Quality Indicators

We calculated quality measures from guidelines published by the American Psychiatric Association and the Agency for Healthcare Research and Quality.[29-31] The guidelines specify that the use of antidepressants or psychotherapy (or both) should be based on clinical circumstances (e.g. depression severity, co-occurring conditions, or complicated psychosocial situations). This level of clinical detail is not knowable in claims data; therefore we constructed our measures considering either treatment modality. We considered 9 quality measures pertaining to MH/SA follow-up in general, as well as psychotherapy and pharmacotherapy specifically.

In the calendar-year analyses we examined the likelihood that MDD diagnosed enrollees received any antidepressants, at least one psychotherapy visit, or either. Receiving either would be considered appropriate MDD treatments according to the guidelines (albeit a minimum quality standard). However, recognizing that different treatment modalities may be under different constraints, we also measured changes in receiving psychotherapy separately from receiving antidepressants.

In the acute phase episode analyses, we measured frequency/intensity and/or duration of guideline recommended treatment modalities. Specifically, the likelihood of: 1) duration of mental health follow-up (visits and/or medications) $\geq$ 4 months; 2) intensity of follow-up visits, defined as within the first two months $\geq$ 2 visits per month and in the second two months $\geq$ 1 per month, 3) psychotherapy duration ($\geq$ 3 months) and intensity ($\geq$ 2 sessions per month); and 4) total days of antidepressant supplied $\geq$ 3 months. The AHRQ and APA guidelines recommend acute phase psychotherapy occurring weekly for 12 or 16 weeks respectively. Also, AHRQ guidelines specify that acute phase antidepressant treatment last at least three months, follow-up visits to monitor medication occur at least every two weeks, and therapy occur weekly.[31] Thus our quality indicators are consistent with guidelines but represent conservative measures of quality. These measures are more conservative so as to allow for potential inefficiencies that can occur in usual care (e.g., missed appointments, etc.). They are also consistent with other studies in the literature that use claims data to measure depression quality of care.[32-35]

Analytic Models

Multiple logistic regression models estimated the association between the post-parity period and receipt of the quality measures. For each quality measure, separate models for each health plan were fitted due to concerns that pooling the data would obscure plan to plan differences. However, some plans did not have 80% power to detect a 10 percentage point difference at a

significance level of 0.05%. Therefore, we also pooled the data and conducted analyses that used plan fixed effects models to control for plan level differences in quality. Because the results of the pooled and unpooled analyses are similar, we report on the pooled analyses in the tables. Where the results differ by individual health plan, we report those results in the text.

We conducted sensitivity analyses in which the one plan that did not contract with a managed behavioral health carve-out after parity (PPO-MA2) was dropped from the analysis. Dropping PPO-MA2 did not lead to any significant changes in the results.

The primary explanatory variable of interest was a dichotomous variable indicating whether treatment occurred after the parity policy was implemented. Other explanatory variables that served as controls in each model included gender, age (as a quadratic variable), relation to insured (e.g., employee vs. spouse/dependent), the presence of an MDD hospitalization, the presence of a co-occurring (non-tobacco) substance use disorder, and other psychiatric co-occurring diagnoses that might signify a more complicated course (e.g., anxiety, psychotic, personality, eating, adjustment, and attention deficit hyperactivity disorders). Because of the low prevalence of detected co-occurring substance use disorder in this sample, we were unable to control for it in the acute phase episode analyses.

We constructed a 95% confidence interval for the adjusted odds ratios and used a generalized estimating equations (GEE) approach to account for the multiple observations on each individual for both the annual-treatment and acute phase episode analyses.[36]

Results

Across time, the change in the MDD calendar-year detection rate did not change significantly from a clinical or policy perspective (Table 1). Table 2 describes the pre- and post-parity population characteristics across plans. The calendar-year cohort was nearly 70% female, had a mean age of < 50 and approximately 60% were employees. Co-occurring SUD diagnosis was not prevalent (<2%), but co-occurring (non-SUD) mental health diagnoses were (nearly 70%). Few received more intensive services such as inpatient, partial hospital, or residential services (1.5%).

Table 3 describes the proportion of MDD persons per calendar year who received guideline care during pre- and post-parity and the logistic regression results. Both before and after parity, at least 90% of the MDD diagnosed enrollees received some MDD treatment with an antidepressant and/or psychotherapy. Also, before and after parity, the proportion receiving any antidepressant was higher than the proportion receiving any psychotherapy (nearly 80% versus approximately 55%). When each plan was analyzed separately, there was some variability in the proportion receiving each of the quality measures pre-parity; the proportions were typically similar post-parity.

The pooled logistic regression results indicate the likelihood of receiving any antidepressant or psychotherapy increased post parity. This seemed to be driven largely by an increase in the likelihood of receiving an antidepressant. The individual health plan analyses were similar but there were some differences. PPO-MA1 was the only plan to experience a decrease after parity: the likelihood of receiving any psychotherapy declined (OR 0.87, CI 0.81−0.94). However, post-parity, they were more likely to receive antidepressant medication and either treatment modality (OR 1.14, CI 1.03−1.26 and OR 1.23, CI 1.09−1.39 respectively). Notably, before parity PPO-MA1 had the highest proportion receiving any psychotherapy across plans (approximately 64%); after parity it had declined to approximately 61% but was still among the highest of the plans.

Table 4 describes the unadjusted frequencies of receiving the acute phase quality measures, as well as the results of the logistic regressions for these measures. The proportion of acute phase episodes that received these more nuanced quality standards was overall considerably lower than that seen in the person-year analyses.

In both the pooled and individual plan analyses, there were no statistically significant decreases associated with the post parity period. However, the regression results from the pooled data indicate that the only change was an improvement in the follow-up duration. In the individual plan level models, there was modest improvement in the intensity of follow-up for PPO-W (intensity of follow-up in 1st 2 months OR 1.44, CI 1.04−2.00) and PPO-S (intensity of follow-up in 2nd 2 months OR 1.49, CI 1.03−2.15). Otherwise, no significant changes post-parity were noted at the individual plan level.

Discussion

These data present a mixed picture in terms of quality improvement post-parity.

Both before and after parity, most MDD diagnosed enrollees (at least 90%) received some psychotherapy or antidepressant medication in a given year. Additionally, after parity, all of these **PPO plans** experienced improvement in some quality indicators, most notably in the likelihood of receiving any antidepressant in a given calendar year. Also, there was an improvement in the duration of follow-up during acute phase treatment. PPO-W and PPO-S experienced some improvement in the intensity of MDD follow-up post parity, however the lower bound of the confidence intervals suggests that while statistically significant, it is of little clinical or policy significance.

Despite the above improvements, there was evidence of quality concerns as well, particularly when one goes beyond the minimal standards of quality in the calendar-year analyses. Even after parity, only less than 60% of the acute phase episodes received adequate follow-up duration. Also, the intensity of follow-up only met the quality standards approximately 30% of the time. For acute phases with psychotherapy or antidepressant treatment, less than 60% met the minimum duration standard, and approximately 30% met the psychotherapy minimum intensity standard. With the exception of follow-up duration, the likelihood of receiving most of the acute phase quality measures was largely unchanged post-parity.

These data show some consistency to similar measures collected by the National Committee on Quality Assurance (NCQA) in private insurance health plans.[37,38] In years 1999, 2001 and 2002, NCQA observed 3 months continuous antidepressant prescribing rates during acute phase depression of 58.8%, 56.9% and 59.8% respectively, which is similar to our acute phase observations. Also, the rates for receiving 3 follow-up visits in the first 12 weeks after a depression diagnosis were 21.4%, 19.8% and 19.2% respectively, which is lower than our observations for follow-up intensity.

Our results are consistent with those of Bao and Sturm who found that state parity was not associated with improvements in the perception of improved access or quality for mental health care.[39] However, their data are very different than ours. They utilized data from surveys in which persons were asked their views on the extent of coverage and quality of health care, broadly defined. Our results are based on claims based quality measures and therefore measure actual utilization.

There are some important limitations to these data. First, these analyses are based on PPO plans from one large national insurer with multiple regional plans and therefore the results may not be generalizable to other plans or geographical regions in which parity is implemented. Because we limit the analyses to enrollees continuously enrolled all four years, we cannot comment on

the association between parity implementation and quality for enrollees who were enrolled a shorter period of time.

These data use an algorithm based on administrative data to establish a major depression cohort. The gold standard for establishing a diagnostic cohort is based on structured clinical interviews. Studies examining the agreement between administrative data and either structured clinical interview or chart review have found fair agreement for depressive disorders.[40,41] However, we use a more stringent algorithm than other published claims data studies of MDD quality of care. This approach, also likely increases the "false negative" rate in our cohort identification.

In this stable cohort of enrollees, parity was not associated with improvements in MDD detection rates. The annual treatment analyses indicate there was some improvement in access to any recommended treatments once MDD was identified, however the marginal improvement was small (90% vs. 92%). Additionally, it was a very minimal quality standard (i.e., at least one prescription filled, at least one psychotherapy visit). The more nuanced measures in the acute phase analyses that specify minimum frequencies/intensities and durations of follow-up **tell a modest quality improvement story.**

Additionally, it is important to note that some quality improvements in the post-parity implementation period varied by plan and by specific measures. This is possibly a result of local contextual differences such as baseline quality in the plans, geographical practice variation (or geographical enrollee preferences). In other analyses on the FEHBP parity, plans reported they did not change their management strategies post-parity.[28]

Finally, these analyses do not control for secular trends that would affect quality independent of parity. For example, recent literature indicates that the rate of MDD treatment has increased overall and the rate of antidepressant utilization has increased in particular over the past several years (while at times MH/SA ambulatory visits in general have remained constant[42] but psychotherapy utilization specifically has declined).[43-47] In our analyses, the strongest improvements were seen in the likelihood of receiving any guideline-recommended treatments (i.e., either psychotherapy or antidepressants), although these gains typically resulted from increases in the likelihood of receiving antidepressants. Thus, the strongest improvements observed may be entirely related to secular trends and not parity. Difference-in-differences analyses can adjust for secular trends; such analyses performed by co-investigators of the FEHBP parity implementation study demonstrate that increases observed in the probability of any overall MH/SA use and spending were similar to trends observed in non-FEHBP privately insured populations that served as a study comparison.[28] Thus, it is quite possible that these MDD quality results also reflect secular trends independent of parity implementation.

These results have mixed implications for parity and its effect on quality of mental health care. On the positive side, parity implementation and reliance on mental health carve-outs to manage the benefits did not result in quality decrements for the treatment of MDD. However, parity implementation was associated with little consistent or significant improvements in MDD treatment quality. (The exception was the duration of MH/SA follow-up duration once acute phase MDD was identified.) Many of the improvements seen were consistent with prior literature on secular trends. Thus suggesting that the forces shaping the secular trends overpower whatever increases in utilization one might see as a result of parity.

It is notable that both before and after parity implementation, there were considerable shortfalls in MDD quality of care. While mental health and substance abuse parity is an important goal, it is also clearly not enough if the aim is to improve quality. First, there are many mental health services that do not have comparable services in general medical care (e.g., day hospital or residential care) and many private insurance plans do not cover these effective components of care.[12] Second, the literature on quality improvement demonstrates that quality improvement

typically involves concerted efforts and interventions that rely on multiple methods/efforts to effect practice change aimed at improving treatment quality;[48] and the more complex the goals are for practice change the more effort is required on the part of the organization.[49,50] Thus, while parity is an important policy goal, it alone is inadequate if one's aim is to improve quality of care.

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Table 1

MDD calendar-year identification rates across plans

Health Plan	1999	2000	2001	2002
PPO-W	2.4	2.5	2.8	2.9
PPO-NE1	1.5	1.7	1.8	1.9
PPO-NE2	1.3	1.4	1.6	1.6
PPO-S	2.0	2.1	2.2	2.3
PPO-MA1	2.5	2.6	2.8	2.8
PPO-MA2	2.6	2.8	3.0	3.0
All Plans	**2.3**	**2.4**	**2.6**	**2.6**

All are expressed as percent of enrollee population

Table 2

Calendar-year population characteristics

	Pre-parity (N = 16,817)		Post-parity (N= 18,640)	
	N	%		%
Female	11,508	68.4	12,602	67.6
Employee	10,310	61.3	11,363	61.0
Co-occurring SUD	212	1.3	265	1.4
Co-occurring mental health	11,202	66.6	13,026	69.9
Inpatient/residential treatment	246	1.5	301	1.6
Mean age, years (Standard Deviation)	46.6 (8.25)		48.4 (8.34)	

Table 3

Calendar-year MDD analyses

Frequency of outcomes measures					
	Pre Parity (N=16,817)		**Post Parity (N=18,640)**		**Percentage point change**
Outcome measure	N	%	N	%	%
At least 1 psychotherapy visit	9,150	54.1	10,322	55.4	+1.3
At least 1 antidepressant prescription	13,142	78.2	14,959	80.2	+2.0
Psychotherapy and/or antidepressant medication	15,241	90.6	17,275	92.7	+1.9

Logistic regression results. Log-odds and odds ratio of receiving care post-parity, adjusting for baseline characteristics.					
Outcome measure	**β**	**s.e.**	**Z score**	**OR**	**CI**
At least 1 psychotherapy visit	(-)0.0236	0.0219	(-)1.08	0.98	0.94−1.02
At least 1 antidepressant prescription	0.1282	0.0195	6.57*	1.14	1.09−1.18
Psychotherapy and/or antidepressant medication	0.2332	0.0324	7.19*	1.26	1.18−1.34

* p. value <0.0001

Table 4

Acute phase episode analyses

Frequency of outcomes measures					
	Pre Parity (N=1,753)		**Post Parity (N=2,255)**		**Percentage point change**
Outcome measure	N	%	N	%	%
Duration of follow-up (MH/SA visits and/or antidepressants) ≥ 4 months	909	51.9	1,335	59.2	+7.3
Intensity of follow-up (i.e., any MH/SA visit) 1st 2 months ≥ 2 per month	451	25.7	635	28.2	+2.5
Intensity of follow-up (i.e., any MH/SA visit) 2nd 2 months ≥ 1 per month	533	30.4	723	32.1	+1.7
Conditional on any psychotherapy, duration ≥3 months^	519	56.8	743	59.0	+2.2
Conditional on any psychotherapy, intensity ≥2 per month^	278	30.4	344	27.3	−3.1
Conditional on any antidepressant, duration at least 3 months^	363	56.7	459	58.6	+1.9
^ Percentages based on subset of population receiving the specific treatment.					

Logistic regression results. Log-odds and odds ratio of receiving care post-parity, adjusting for baseline characteristics.					
Outcome measure	**β**	**s.e.**	**Z score**	**OR**	**CI**
Duration of follow-up (MH/SA visits and/or antidepressants) ≥ 4 months	0.316	0.067	4.72*	1.37	1.20−1.56
Intensity of follow-up (i.e., any MH/SA visit) 1st 2 months ≥ 2 per month	0.088	0.069	1.27	1.09	0.95−1.25
Intensity of follow-up (i.e., any MH/SA visit) 2nd 2 months ≥ 1 per month	0.048	0.068	0.70	1.05	0.92−1.20
Conditional on any psychotherapy, duration ≥3 months	0.106	0.088	1.20	1.11	0.93−1.32
Conditional on any psychotherapy, intensity ≥2 per month	(-)0.144	0.093	(-)1.55	0.86	0.72−1.04
Conditional on any antidepressant, duration at least 3 months	0.020	0.109	0.18	1.02	0.82−1.26

* p. value <0.0001