Technical Appendix

MH/SUD disorder diagnoses were defined as those with diagnostic codes 291, 292, 295 through 309 (except 305.1 and 305.8), and 311 through 314 in the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM). An inpatient was considered a user of MH/SUD services if the last primary diagnosis and the majority of all primary diagnoses in the inpatient record were MH/SUD diagnoses. An outpatient was considered a user of MH/SUD services if any of the following was indicated: a MH/SUD primary diagnosis, a procedure specific to MH/SUD care, or a face-to-face encounter with a provider of such care or treatment at a facility specializing in MH/SUD care. To identify use of psychotropic medications, we developed a list of medications used only for MH/SUD diagnoses and considered any use of those medications as MH/SUD care. We made an additional list of medications used both for treating MH/SUD conditions and other conditions, such as tricyclic antidepressants and anti-seizure medications, and only considered them as MH/SUD care if use of those medications was accompanied by a MH/SUD diagnosis in the claims data.

As noted in the manuscript, we performed Kolmogorov-Smirnov tests to determine if the distribution of the change in the post-parity service amount of a given service compared to the pre-parity amount in the FEHB plans differed from the distribution of change in service amounts observed in the comparison plans among individuals who used that type of service in the pre- period. As a sensitivity analysis, we repeated the analyses among all individuals who used any one of these types of services in the pre-period. The findings followed the same pattern, whether the analysis focused on individuals who received a specific category of service (results presented in Table 1 of manuscript) or for all service users taken together.

One strategy for health plans in the FEHB Program to control costs after parity implementation was to contract with a managed behavioral health care carve-out firm. Research indicated a substantial increase in carving out among FEHB plans in the year following parity implementation (Barry and Ridgely, 2008). We conducted stratified analyses to determine whether a plan's adoption of a carve-out contract before or after parity might have affected the results. Because we conducted multiple tests (for each category of service and for different subsets of plans defined by presence of a carve-out), we considered differences to be statistically significant if the p-value was smaller than 0.001. Results by carve-out status are presented in Technical Appendix Table 1 below. As noted in the manuscript, the effect of parity on the quantity of services used was remarkably stable whether or not a health plan had a carve-out contract before parity or shifted to a carve-out contract after parity.

References:

Barry CL, Ridgely MS (2008). Mental Health and Substance Abuse Insurance Parity for Federal Employees: How Did Health Plans Respond? *Journal of Policy Analysis and Management* 27(1): 155-170.

Technical Appendix Table 1: Difference-in-Differences Results by Carve-out Status

Outcome	**Group**	**No. of Beneficiaries**	**Mean Difference Post-Minus Pre-Parity (SD)**	**Kolmogorov Test Statistic**	**p-value**
Number of Bed Days	Comparison Group	1117	-8.05 (19.8)	Comparison Group	
	Intervention Group (All Plans)	3123	-7.26 (15.2)	1.02	0.25
	Carve-Out in Pre- and Post-periods	940	-7.52 (17.2)	0.567	0.90
	Carve-Out in Post-only	1880	-7.26 (15.2)	1.42	0.04
	Never Carve-out	2820	-7.39 (15.2)	0.90	0.40
Total Number of MH/SUD Visits	Comparison Group	34720	-2.08 (14.4)	Comparison Group	
	Intervention Group (All Plans)	72026	-2.41 (12.2)	6.53	**< 0.0001**
	Carve-Out in Pre- and Post-periods	26097	-3.25 (15.0)	5.42	**<0.0001**
	Carve-Out in Post-only	37483	-1.94 (9.72)	12.21	**<0.0001**
	Never Carve-out	63580	-2.48 (12.2)	6.87	**<0.0001**
Number of Medication Management Visits	Comparison Group	7466	-1.00 (4.98)	Comparison Group	
	Intervention Group (All Plans)	12978	-1.26 (5.20)	2.24	**<0.0001**
	Carve-Out	4750	-1.31	2.13	**0.0002**

	in Pre- and Post- periods		(5.38)		
	Carve-Out in Post- only	5992	-1.34 (4.99)	3.01	**<0.0001**
	Never Carve-out	10742	-1.33 (5.17)	2.93	**<0.0001**
Number of Psychotherapy Visits	Comparison Group	23301	-3.07 (15.5)	Comparison Group	
	Intervention Group (All Plans)	38479	-3.98 (14.2)	4.02	**<0.0001**
	Carve-Out in Pre- and Post- periods	17030	-4.67 (16.5)	7.20	**<0.0001**
	Carve-Out in Post- only	16991	-3.42 (11.5)	5.69	**<0.0001**
	Never Carve-out	34021	-4.04 (14.2)	3.89	**<0.0001**
Number of MH/SUD Prescriptions	Comparison Group	64795	0.0811 (2.17)	Comparison Group	
	Intervention Group (All Plans)	122044	-0.174 (2.10)	6.26	**<0.0001**
	Carve-Out in Pre- and Post- periods	43468	-0.181 (2.11)	4.52	**<0.0001**
	Carve-Out in Post- only	63096	-0.183 (2.11)	7.46	**<0.0001**
	Never Carve-out	106564	-0.182 (2.11)	6.84	**<0.0001**

Notes: Carve-out in Pre- and Post- refers to intervention plans having a carve-out in place prior to and after the introduction of parity. Carve-out in Post- only refers to intervention plans implementing a carve-out at the same time the parity policy was

implemented. Never carve-out refers to intervention plans having no carve-out in place prior to or after the introduction of parity. The Kolmogorov-Smirnov test compares the distribution of utilization before the parity policy was implemented (1999-2000) with the distribution of utilization after the parity policy was implemented (2001-2002) for the FEHB Program enrollees ("Intervention Group") and comparison group enrollees. For each outcome, we examine only individuals who had at least some use of that type of service in the pre- period. SD denotes standard deviation. Total number of mental health outpatient visits combines medication management visits, outpatient therapy visits, and other types of outpatient visits. A negative value for the mean difference post minus pre parity implies less use in the post- period.