

# Improving Mental Health and Addressing Mental Illness: Mental Health Benefits Legislation

## Summary Evidence Tables - Economic Review

### Mental Health/Substance Abuse Benefits Expansion for Federal Employees Health Benefits (FEHB) Program

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p><b>Author (Year):</b> Azrin et al. (2007)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> National and regional</p> <p><b>Population:</b> FEHB children in 7 PPO plans</p>	<p><b>Data:</b> Claims from 7 FEHB PPO Plans</p> <p><b>Data Period:</b> Pre: 1999-2000 Post: 2001-2002</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> Inpatient, Outpatient, Pharma</p>	<p>Children MH/SA spending conditional on use decreased significantly in two National (\$174.04) and South (\$320.00). Other five had increased costs ranging from \$128.84 to \$20.36 (not significant).</p>	<p>OOP cost decreased significantly for 3 plans ranging from \$62.25 to \$200.22. Others insignificant.</p>
<p><b>Author (Year):</b> Azzone et al. (2011)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> National and regional</p> <p><b>Population:</b> FEHB enrollees ages 18 through 64 in 6 PPO plans</p>	<p><b>Data:</b> Claims from 6 FEHB PPO Plans</p> <p><b>Data Period:</b> Pre: 1999-2000 Post: 2001-2002</p> <p><b>Included:</b> SA</p> <p><b>Components:</b> Inpatient, Outpatient, Pharma</p>	<p>Total spending for SA per-user decreased by \$275.51 due to parity, but not significant.</p>	<p>OOP cost for SA decreased significantly by \$101.09 due to parity.</p>
<p><b>Author (Year):</b> Goldman et al. (2006)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> National and regional</p> <p><b>Population:</b> FEHB enrollees ages 18 through 64 in 7 PPO plans</p>	<p><b>Data:</b> Claims from 7 FEHB PPO Plans</p> <p><b>Data Period:</b> Pre: 1999-2000 Post: 2001-2002</p> <p><b>Included:</b> MH/SA</p>	<p>There was decrease in per user cost of MH/SA due to parity for three plans (range, -\$201.99 to -\$68.97) and did not change significantly for four plans (range, -\$42.13 to \$27.11).</p>	<p>OOP cost per person decreased significantly in 5 of 7 plans (range \$13.82 to \$87.06) and increased \$4.48 with significance in one plan.</p>

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
		<b>Components:</b> Inpatient, Outpatient, Pharma		
<p><b>Author (Year):</b> Hustead et al. (1978)</p> <p><b>Study Design:</b> Time Series</p> <p><b>Carve-out:</b> No</p>	<p><b>Population:</b> National FEHB enrollees in Blue Cross Blue Shield - 4.6 million; Aetna - 1.2 million</p>	<p><b>Data:</b> Claims</p> <p><b>Data Period:</b> 1966-1973</p> <p><b>Included:</b> MH</p> <p><b>Components:</b> Not reported</p>	<p>The Blues paid \$17.7 million in MH costs in 1967, the first year of benefits expansion, which tripled to \$54.7 million in 1972 and \$62 million in 1973. As percentage of total health costs, the MH costs represented 4.8% in 1966, 6.8% in 1970, and 7.3% in 1973, leveling off thereafter. On the other hand, Aetna MH costs made up 12% of total health costs in 1973.</p>	

**Mental Health/Substance Abuse Benefits Expansion from State Mandates**

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p><b>Author (Year):</b> McConnell et al. (2011)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> 2 of 4 PPOs</p>	<p><b>Location:</b> Oregon</p> <p><b>Population:</b> Enrollees in 4 PPOs</p> <p><b>Intervention:</b> State mandate</p>	<p><b>Data:</b> Claims from 4 PPOs</p> <p><b>Data Period:</b> 2005-2008</p> <p><b>Included:</b> MH/SA</p>	<p>Increase in MH/SA cost per beneficiary due to parity for 4 plans: \$12.15 to \$25.49 and not significant. Increase in 4 plans pooled was \$15.15 and not significant. Children less likely to use MH/SA services but have higher expenditures once they use. The range in MH/SA cost increase due to parity in 4 plans for children was \$15.25 to \$36.32 and not significant.</p>	<p>OOP cost per user decreased by small amount in two plans and significantly -\$16.70 and -\$31.71, increased significantly in a third by \$21.13, and did not change significantly in the 4th.</p>
<p><b>Author (Year):</b> Rosenbach et al. (2003)</p> <p><b>Study Design:</b> Pre-Post</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> Vermont</p> <p><b>Population:</b> Enrollees in BCBS</p> <p><b>Intervention:</b> State mandate</p>	<p><b>Data:</b> Claims from BCBS</p> <p><b>Data Period:</b> 1996-1999</p> <p><b>Included:</b> MH/SA</p>	<p>MH costs per member per quarter (PMPQ) increased from \$13.98 to \$14.25. SA cost PMPQ decreased from \$3.80 to \$3.03. MH/SA cost PMPQ decrease from \$17.78 to \$16.28. MH/SA spending by the health plan as percentage of total health payments increased from 2.30% to 2.47%.</p>	<p>For those with serious MH conditions, the median OOP cost as % of total cost went down from 50% to 19.3% for the \$1-\$500 claims bracket; from 32% to 20% in the \$501-\$1000 bracket; 27.1% to 20.3% in the \$1001-\$2500 bracket; from 18.4% to 14.1% in the \$2501-\$5000 bracket; and from 9.0% to 4.4% in the \$5001 and over bracket.</p>

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p><b>Author (Year):</b> Lang (2011)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> N/A</p>	<p><b>Population:</b> States with parity mandates</p> <p><b>Intervention:</b> State mandates</p>	<p><b>Data:</b> Multiple Causes of Death data from NCHS</p> <p><b>Data Period:</b> 1990-2004</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> N/A</p>	<p>Parity mandates were effective in averting 592 suicides per year</p> <p>Based on literature: Increase in premiums due to mandate is about \$80 to \$200 per family. With 37.5 million affected, societal costs is \$745 million to \$1.8 billion. Conclusion : \$1.3 to \$3.1 million per averted suicide due to parity mandates</p>	

### Mental Health/Substance Abuse Benefits Expansion by Individual Employers

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p><b>Author (Year):</b> Cuffel et al. (1999)</p> <p><b>Study Design:</b> Pre-Post</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> Not Reported</p> <p>Enrollees in self-insured plan</p> <p>Voluntary benefit expansion</p>	<p><b>Data:</b> Claims</p> <p><b>Data Period:</b> 1991-1995</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> Inpatient, outpatient, and other.</p>	<p>Behavioral use declined 5.2% to 4.2% in the pre and increased from 4.9% to 6.1% in post. Per User (Per Life Covered) Cost: 1991 \$4195 (\$220), 1992 \$3223 (\$135), 1993 \$1243 (\$61), 1994 \$1561 (\$76), 1995 \$1178 (\$71). This is an average decrease of 19% per year from 1991 to 1995 in terms of cost per life.</p>	<p>Users of behavioral health care showed 2.9% decrease in medical care costs while non-users of behavioral care showed a 9.4% rise. Note medical care occurred in unmanaged environment and these savings may not occur in managed care.</p>
<p><b>Author (Year):</b> Sasso et al. (2006)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> No</p>	<p><b>Location:</b> Mostly Midwest</p> <p><b>Population:</b> Employees in self-insured plan</p> <p><b>Intervention:</b> Voluntary benefit expansion</p>	<p><b>Data:</b> Claims</p> <p><b>Data Period:</b> 1995-1998</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> Not reported</p>	<p>There was a \$4 per member increase in outpatient costs, \$13 in pharmaceuticals, and \$22 in total cost for behavioral care. For users of behavioral care (conditional on use), outpatient cost per user decreased by \$94, pharmaceutical use increased by \$65, and total cost decreased by \$11.</p>	<p>Relative to control, the probability of any outpatient use increased 1.2 percentage points and pharmaceutical use increased by 2.5 percentage points.</p>
<p><b>Author (Year):</b> Sturm et al.</p>	<p><b>Location:</b> State of Ohio</p>	<p><b>Data:</b> Claims for 1995-1997. Management</p>	<p>No pre data for indemnity plans. But for post-period, increased from</p>	

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p>(1998)</p> <p><b>Study Design:</b> Pre-Post</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Population:</b> Enrollees in self-insured plan</p> <p><b>Intervention:</b> State agency ruling on benefit expansion</p>	<p>reports for 1989-1994.</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> Not reported</p>	<p>\$5.39 in 91/92 to \$6.53 in 93/94 and then fell to \$3.64 in 96/97.</p> <p>The cost per HMO member increased from \$3.66 in 1993 to \$4.66 in the post 1995/96 year and then declined to \$3.64 in 1996/97.</p>	
<p><b>Author (Year):</b> Grazier et al. (2000)</p> <p><b>Study Design:</b> Pre-Post</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> California</p> <p><b>Population:</b> Employees in self-insured plan</p> <p><b>Intervention:</b> Voluntary benefit expansion</p>	<p><b>Data:</b> Claims</p> <p><b>Data Period:</b> 1990-1993</p> <p><b>Components:</b> Not reported</p>	<p>MH Payments Per Member: Total: 1990-\$80.80, 1993 \$68.30; Patient: 1990 \$23.80, 1993 \$27.60; Company: 1990 \$55.40, 1993 \$40.60. Medical costs increased from \$907 in 1990 to \$951 in 1993. MH costs were 6.7% to 8.5% of all health costs during the 3 years.</p>	<p>MH Payments Per User: Total: 1990 \$942, 1993 \$746; Patient: 1990 \$277, 1993 \$375; Company: 1990 \$646, 1993 \$443.</p>
<p><b>Author (Year):</b> Zuvekas et al. (2002, 2005a, 2005b)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> Yes</p>	<p><b>Location:</b> Not reported</p> <p><b>Population:</b> Enrollees in self-insured plan</p> <p><b>Intervention:</b> Voluntary benefit expansion</p>	<p><b>Data:</b> Claims</p> <p><b>Data Period:</b> Not reported</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> Inpatient, outpatient, ER</p> <p>Zuvekas 2005a focus on psychotropic</p>	<p>Due to parity and carve-out, per member plan cost declined by 30-40% over the 4 years (25%-year 2, 13%-year 3, 7%-year 4). Employees had 7% decline and spouses had 22% increase but neither was statistically significant. Most of this large decline was concentrated among those ages 6–12 (69%) and 13–17 (77%).</p>	<p>Per member prescription cost increased from \$4.70 per quarter pre to \$12.66 per quarter post.</p>

## Impact on Business and Employment Due to Mental Health/Substance Abuse Benefits Mandates

Study Characteristics	Intervention Characteristics	Data Characteristics	Primary Results	Secondary Results
<p><b>Author (Year):</b> Cseh (2008)</p> <p><b>Study Design:</b> Pre-Post with Comparison</p> <p><b>Carve-out:</b> N/A</p>	<p><b>Location:</b> National and State</p> <p><b>Population:</b> All employees</p> <p><b>Intervention:</b> State mandates</p>	<p><b>Data Period:</b> March (Demographic)</p> <p>Current Population Survey (CPS) from BLS 1999-2004</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> N/A</p>	Hours worked per week decreases while wage rate increases both negligibly and without significance.	No results were significant. No evidence of increase in uninsured, loss of insurance or reduced generosity of employers in premium contributions.
<p><b>Author (Year):</b> Mathur (2010)</p> <p><b>Study Design:</b> Cross-Sectional</p> <p><b>Carve-out:</b> N/A</p>	<p><b>Location:</b> National and State</p> <p><b>Population:</b> Self-employed and business owners</p> <p><b>Intervention:</b> State mandates</p>	<p>Data: Survey of Income and Program Participation (SIPP) from Census - Focus on Self-Employed or Business Owner</p> <p><b>Data Period:</b> 1993-1995</p> <p><b>Included:</b> MH/SA</p> <p><b>Components:</b> N/A</p>	Based on the predicted probabilities, with each additional mandate the probabilities decrease by 0.3 to 0.9.	Probability of owning firms with more than 1 employee goes down from 0.45 to 0.34 when mandates go up from 0 to 16. Probability of firm with more than 2 employees decreased 50% and owning a firm with six or more employees decreased 35% as mandates went from 0 to 16.

### Abbreviations:

FEHB, Federal Employee Health Benefit

MH, Mental Health

N/A, Not applicable

OOP, Out of Pocket

SA, Substance Abuse