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

Summary Evidence Table

1st Author & Year **Study Design** **Data Source** **Quality Scoring (Limitations)** **Funding Source**	**Location** **Intervention Description** **Comparison**	**Study Years** **Study Population** **Baseline population characteristics**	**Results** **Outcomes** **Effect size metric** **Effect estimate (effect estimates used in analysis are in bold)**	**Summary** **Applicability** **Conclusions**
An 2010 Post only California Health Interview Survey Fair (4 limitations) Limitations for 1) Measurement (exposure) - not able to account for ERISA exemption 2) Data analysis – does not control for secular trends 3) Interpretation – loss to follow up (37.7% completed the survey) 4) Interpretation – unreliable baseline	California, US Type of legislation/policy: California mental health parity mandate Year policy went into effect: 2000 Insurance Type: Private insurance Covered conditions: Serious Mental Illness Comparison: NA	2001-2005 Study groups comparable: NA Study population: California residents age 18 and older included in waves 2001 and 2005 of California Health Interview Survey Total: 2001: 56270; 2005: 43020 Exclusion Criteria**:** NR Population characteristics: Sex: NR; Mean Age: NR; Race: NR; SES: NR; Policyholder type: NR	Utilization: Use of mental healthcare in last 12 months for those expressing need (%); Absolute percentage point (pct pt) change **Use of mental healthcare in last 12 months for those expressing need (%):** 2001 (SE):6.68 (0.28) 2005 (SE):7.1 (0.25) **Absolute pct pt change: -0.42** Note: Perceived unmet need for mental health care services increased significantly in all groups, (the privately insured, those with public insurance, and the uninsured) (p<.001 for all).	**Applicability:** Those with private who live in California **Conclusions:** Parity legislation applied to the privately insured, but it did not result in increased use of mental health care services in this group
Azrin 2007 **Linked studies:** Azzonne ’11; Burnam ’04; Busch ’06; Goldman ’06	Nationwide, US Type of legislation/policy: Federal Employee Health	1999-2000 vs 2001-2002 Study groups	Utilization: Mental health or substance abuse (MH/SA) service use (%); Financial protection: Total MH/SA Out of Pocket (OOP) Spending Per User, ($);	**Applicability:** Child enrollees in FEHB PPO plans **Conclusions:** Full MH/SA

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Other design with concurrent comparison group Claims data Good (1) 1. Sampling - excluded children 15 to 18 years at baseline; not representative of all children National Institute of Mental Health; John D. and Catherine T. MacArthur Foundation Network on Mental Health Policy Research	Benefit (FEHB) Year policy went into effect: 2001 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions; substance abuse Comparison: Those covered under self-insured plans	comparable: Yes Study population: Continuously enrolled children under age 18 in each of the study years (1999-2002) in each of 7 FEHB plans; Total (intervention baseline): 177,938 Exclusion Criteria**:** age >15 at start of study Population characteristics (intervention): Sex: Female: 48%; Mean Age: NR; Race: NR; SES: NR; Policy holder type: Dependent children: 100 %;	Change pre- to post-parity in probability of MH or SA service use relative to comparison group (Difference-in-Differences (DD) analysis) **MH/SA service use (%)** Pre / Post National 6.80 / 8.50 National comparison 9.45 / 11.65 Mid-Atlantic 1 10.13 / 12.85 Mid-Atlantic 1 comparison 8.15 / 10.45 Mid-Atlantic 2 10.01 / 13.02 Mid-Atlantic 2 comparison 8.15 / 10.45 Northeast 1 5.46 / 7.74 Northeast 1 comparison 8.15 / 10.45 Northeast 2 6.56 / 8.81 Northeast 2 comparison 8.15 / 10.45 West 6.10 / 7.67 West comparison 9.90 / 11.75 South 7.15 / 9.10 South comparison 9.90 / 11.75 **Change Pre-parity to Post-parity in Probability of MH/SA Service Use Relative to Comparison Group (95% CI)** National **-0.39 (-0.85, 0.09)** Mid-Atlantic 1 **0.48 (-0.27, 1.17)** Mid-Atlantic 2 **0.73 (0.01, 1.46)** Northeast 1 **-0.03 (-0.77, 0.70)** Northeast 2 **-0.04 (-0.92, 0.80)** West **-0.24 (-0.87, 0.42)** South **0.06 (-0.52, 0.65)** **Change pre-parity to post-parity total MH/SA OOP Spending**	parity for children covered by FEHB can achieve improved financial protection, however, may not expand utilization for those children who need MH/SA services

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			Per User, $ (95% CI) National **-15.99 (-32.90, 0.93)** Mid-Atlantic 1 **-30.51 (-75.49 , - 21.74)** Mid-Atlantic 2 **-62.25 (-104.76, -21.74)** Northeast 1 **-23.94 (-70.59, 22.70)** Northeast 2 **-50.76 (-111.33, 9.81)** West **-105.82 (-137.70, -73.93)** South **-200.22 (-233.08, -67.36)** Note – study only reported effect size effect estimate for OOP spending	
Study: Azzone 2011 **Linked studies:** Azrin 2007; Burnam 2004; Busch 2006; Goldman 2006 Retrospective cohort Study from the Department of Health and Human Services; FEHB PPO plans/Marketscan claims data Good (1) 1. Measurement - substance abuse underreported National Institute on Drug Abuse through Brandeis-Harvard Center for Managed Care and Drug Abuse Treatment	Nationwide, US Type of legislation/policy: Federal Employee Health Benefit (FEHB) Year policy went into effect: 2001 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions; substance abuse (SA) Comparison: Self-insured plans included in MarketScan database	Study years: 1999-2000 vs 2001-2002 Study groups comparable: Yes Study population: Adults 18-64 years of age continuously enrolled in FEHB or self-insured plans; Total: 90,000 Exclusion Criteria**:** enrollees in plans that were close to parity before intervention (2 HMO plans); analytic resources not sufficient (1 PPO) Population characteristics	Utilization: Any SA treatment; Diagnosis: Identification of substance abuse disorder; Quality of Care: Initiation and Engagement (continued use for 30 days) of treatment for SA; Difference-in-difference **Any SA treatment** Pre-parity: Intervention: 0.51% Comparison: 0.34% Post-parity: Intervention: 0.66% Comparison: 0.38% **Difference-in-difference (adjusted) (95% CI): 0.079 (-0.002, 0.159)** **Identification of SA disorder** Pre-parity: Intervention: 0.39% Comparison: 0.26% Post-parity: Intervention: 0.50% Comparison: 0.28%	**Applicability:** Those covered by PPO FEHB plans **Conclusions:** Findings suggest that for continuously enrolled populations covered by FEHB, parity was associated with improved substance abuse diagnosis but not treatment initiation and engagement, or quality of care.

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		(intervention): Sex: Female: 53.5%; Mean Age: Age group 18-25 years: 1.8% 26-35 years: 12.4% 36-45 years: 29.0% 46-55 years: 40.6% 56-64 years: 16.3% Race: NR; SES: NR; Policyholder type: Employee: 62.3%; Dependent adult/child: 37.7%;	**Difference-in-difference (adjusted) (95% CI): 0.10 (0.02, 0.19) (p<.05)** **Initiation of treatment for SA** Pre-parity: Intervention: 23.5% Comparison: 31.5% Post-parity: Intervention: 24.0% Comparison: 35.6% **Difference-in-difference (adjusted) (95% CI): -4.12 (-12.88, 4.26)** **Engagement (continued use) of SA treatment for 30 days** Pre-parity: Intervention: 10.8% Comparison: 11.6%; Post-parity: Intervention: 10.4% Comparison: 15.9% **Difference-in-difference (adjusted) 95% CI): -5.12 (-11.64, 1.16)**	
Bao 2004 Other design with concurrent comparison group (pre/post design w/concurrent comparison group) Waves 1 and 2 of Healthcare for Communities (HCC) and Community Tracking Study (CTS) surveys. Fair (3 limitations) 1. Measurement (exposure)-	Nationwide, US Type of legislation/policy: State parity mandates; Parity was further categorized as 'strong' parity (states that require equality in all cost-sharing and allow no exemptions); 'medium' parity (allow exemptions for small employers and employers that experience cost increase	1997-1998 ; 2000-2001 Study groups comparable: Can't tell Study population: Adults that are covered by either employer-provided insurance or self-bought insurance; Total: 4984 Exclusion Criteria: State enacted parity	Utilization: Any specialty mental health (MH) visits (%) and # of mental health specialty visits; Access: Perceived access to care and insurance; Difference-in-Difference-in-Difference: Persons with mental health disorders (relative to those without) in states with parity legislation (relative to the no/weak parity states) in the years after legislation (relative to before) **Any MH specialty visits (%)** Those w/out a mental disorder pre-parity: Intervention: 2.7% Comparison: 2.2%	**Applicability:** Persons in private insurance plans **Conclusions:** State mental health parity legislation has no statistically significant effect on specialty care utilization or perceived access to care.

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cannot identify those subject to parity through ERISA exemption 2. Interpretation -loss to follow up - 64% response rate for wave 1; 70% response rate for wave 2 3. Missing data Robert Wood Johnson Foundation and National Institute of Mental Health	due to the mandate, or contain "if offered" provisions) Year policy went into effect: 1999 or 2000 (depending on state). Insurance Type: Private insurance Covered conditions: Varies by state Comparison: States with weak/no state parity mandate	prior to 1999 or after 2000, reside in MA, or HCC wave 2 interview was conducted in 2000; Population characteristics: Sex: NR; Mean Age: NR Race: NR; SES: NR; Policyholder type: NR;	Those w/out a mental disorder post-parity: Intervention: 2.1% Comparison: 1.3% Those with any mental disorder pre-parity: Intervention: 25.6% Comparison: 22.0% Those with any mental disorder post-parity: Intervention: 17.7% Comparison: 15.3% **Difference-in-Difference-in-Difference (SE): -1.5 (5.1)** **MH specialty visits, if any (#)** Those w/out a mental disorder pre-parity: Intervention: 13.9 Comparison: 9.6 Those w/out a mental disorder post-parity: Intervention: 10.9 Comparison: 10.1 Those with any mental disorder pre-parity: Intervention: 15.6 Comparison: 12.6 Those with any mental disorder post-parity: Intervention: 17.6 Comparison: 12.6 **Difference-in-Difference-in-Difference (SE): 5.4 (6.0)** **Perceived access to be easier (%)** Those w/out a mental disorder pre-parity: Intervention: 13.0	

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			Comparison: 12.7 Those w/out a mental disorder post-parity: Intervention: 12.1 Comparison: 11.5 Those with any mental disorder pre-parity: Intervention: 13.9 Comparison: 15.0 Those with any mental disorder post-parity: Intervention: 18.6 Comparison: 11.2 **Difference-in-Difference-in-Difference (SE): 8.1 (6.1)** **Strong parity vs No/weak parity - effect estimate only reported Any MH specialty visits (%)** **Difference-in-Difference-in-Difference (SE): -4.5 (4.6)** **Perceived access easier (%)** **Difference-in-Difference-in-Difference (SE): 12.6 (7.2); p<0.10** **Medium parity vs No/weak parity - effect estimate only reported** **Any MH specialty visits** **Difference-in-Difference-in-Difference (SE): -2.7 (4.6)** **Perceived access easier (%)** **Difference-in-Difference-in-Difference (SE): 5.4 (7.2)**	

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Barry 2008 Other design with concurrent comparison National Survey of American Families (NSAF) and MEPS-Insurance Component (MEPS-IC) surveys; based definition of parity state on the National Alliance for Mentally Ill website ('04) Fair (2 limitations) 1. Measurement (exposure) – Cannot account for ERISA exemption; 2. Interpretation (temporal confounding)- does not control for laws enacted at different times; Robert Wood Johnson Foundation	Multiple states in the US: Alabama (AL), California (CA), Colorado (CO), Florida (FL), Massachusetts (MA), Michigan (MI), Minnesota (MN), Mississippi (MS), New Jersey (NJ), New York (NY), Texas (TX), Washington (WA), Wisconsin (WI) Type of legislation/policy: State parity mandates; state parity mandates defined as using moderately strict criteria. States with parity laws that applied only to state employees, mirror federal MHPA, or allow special inpatient day or outpatient visit limits were not considered parity states Year policy went into effect: 1995 - MN; 1998 - CO; 1999 – NJ; 2000 – CA; 2001 - MA; 2002 - AL; Note - All but MN implemented a parity law during the study period. MN had parity the entire study period.	1997-2002 Study groups comparable: Can't tell Study population: Children with continuous private insurance; Total: 26196 Exclusion criteria: Had any other source of insurance coverage during the past 12 months Population characteristics: Sex: NR; Mean Age: NR Race: NR; SES: NR; Policyholder type: dependent children: 100%;	Utilization: Any mental health visit (%); Absolute pct pt change and odds ratio (OR) with standard error (SE); **Any mental health visit (%)** Intervention: 1997 2002 **Absolute pct pt change** AL: 3.39% 5.78% **2.39%** CA: 4.11% 6.21% **2.10%** CO: 8.38% 9.16% **0.78%** MA: 7.61% 9.83% **2.22%** MN: 7.52% 8.55% **1.03%** NJ: 6.51% 7.39% **0.88%** Comparison 1997 2002 **Absolute pct pt change** FL: 5.80% 7.74% **1.94%** MI: 4.97% 6.59% **1.62%** MS: 2.48% 4.64% **2.16%** NY: 5.14% 5.85% **0.71%** TX: 6.82% 9.49% **2.67%** WA: 5.91% 7.11% **1.20%** WI: 4.88% 9.71% **4.83%** **Effect estimate data only:** **Any mental health visit** **OR (SE) = 1.103 (0.149)** **Children with mental health need** **OR (SE) = 1.453 (0.562)** **Children without mental health need** **OR (SE) = 1.059 (0.179)**	**Applicability:** Children covered by private insurance who live in states that have a parity mandate. **Conclusions:** State parity mandates do not affect the likelihood of a child receiving any mental health services. The effect of parity appears to be larger and positive among the subset of children with a need for mental health care.

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	Insurance Type: Private insurance Covered conditions: Serious/severe mental illness (CA); biologically-based disorders (CO, NJ, MA); broad-based mental illness (AL, MN) Comparison: Weak/No State Parity Mandate: FL, MI, MS, TX, WA, WI			
Barry 2007 Retrospective cohort 2000 State and Local Area Integrated Telephone Survey National Survey of Children with Special Health Care Needs; data on state parity laws obtained thru National Alliance for the Mentally Ill (NAMI) website and validated with other groups; three data sources for state level political data were used. Fair (3) 1. Description - Demographics given for total population not by group 2. Measurement -	Nationwide, US (3 states excluded) Type of legislation/policy: 23 states with parity laws implemented before January 2001 (did not include states with parity laws that apply only to state employees, mirror the federal law or allow insurers to impose special limits). Year policy went into effect: before 2001 (varies by state) Insurance Type: Private insurance	2000-2001 Study groups comparable: Can't tell Study population: Children with continuous private insurance; Total: 21,930 Exclusion Criteria: Children with more than one type of insurance coverage (e.g., Medicaid and private), children living in Washington D.C. and 3 states that enacted parity legislation during study time period	Utilization: Received all needed MH care (%); Financial Burden: Child out of pocket cost (OOP) spending > $1,000; OOP spending reasonable (%); Child's health care has caused financial problems (%); Needed additional income to care for child (%); Absolute pct pt change; Difference in Difference Analysis (Individuals in parity states reporting need minus no reported need for MH care minus non-parity states reported need for mental health care minus no reported need); **Received all needed mental health care (%)** Intervention: 86.9 Comparison: 85.9 **Absolute pct pt change: 1.0** **Difference in difference: 1.95 (p< .10)** **Child OOP spending > $1000 (%)** Intervention: 20.7 Comparison: 27.8	**Applicability:** Children with mental health needs covered by private insurance in states with parity mandates. **Conclusions:** Results indicate that state parity laws are providing important economic benefits to families with children with mental health conditions.

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Measurement of exposure did not account for ERISA exemption 3. Interpretation – Unknown if intervention and comparison groups comparable at baseline Robert Wood Johnson Foundation (Changes in Health Care Financing and Organization initiative), National Institute of Mental Health	Covered conditions: Broad based mental illness Comparison: States with no parity laws	Population characteristics (full sample): Sex: **:** Female: 40.2%; Mean Age: 10.5 Race: Hispanic: 6.4% Nonwhite: 13%; Other: 80.6%; SES: < 150% federal poverty level: 8%; Policyholder type: dependent children: 100%;	**Absolute pct pt change: -7.1** **Difference in difference: -.40** **OOP spending reasonable (%)** Intervention: 30.3 Comparison: 41.3 **Absolute pct pt change: -11.0** **Difference in difference: -1.33** **Child's health care has caused financial problems (%)** Intervention: 25.2 Comparison: 34.6 **Absolute pct pt change: - 9.4** **Difference in difference: 1.31 (p< 0.01)** **Needed additional income to care for child (%)** Intervention: 22.5 Comparison: 26.0 **Absolute pct pt change: - 3.5** **Difference in difference: 0.56 (p<0.05)** **GMM Regression Results** (Full sample with interaction of parity and MH care need) (coefficient (SE)) Predicting the effect of living in a state with parity law on a child with reported need for mental health care. **OOP spending > $1000** **Parity law in effect -0.014 (0.015)** **Needed MH care 0.102(0.017)*** **Parity x MH -0.057(0.024)*** **OOP spending reasonable (1=never, rarely)** **Parity law in effect -0.002 (0.014)** **Needed MH care 0.103(0.023)*** **Parity x MH -0.108 (0.034)***	

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			Child's health care has caused financial problems **Parity law in effect -0.019 (0.013)** **Needed MH care 0.096(0.017)*** **Parity x MH -0.074(0.025)*** **Needed additional income to care for child** **Parity law in effect 0.017 (0.013)** **Needed MH care 0.081(0.013)*** **Parity x MH -0.053 (0.024)** * p<0.01	
Barry 2004 Other design with concurrent comparison group Healthcare for Communities waves 1 and 2, Community Tracking Study Fair (2) 1. Measurement of the exposure - cannot identify those under ERISA exemption, 2. Interpretation-loss to follow up - 64% response rate for wave 1; 70% response rate for wave 2 National Institute of Mental Health	Nationwide, US (HCC survey did not include AK, HI, DE, ND, VT, WY) Type of legislation/policy: 23 states with parity laws implemented before January 2001 (did not include states with parity laws that apply only to state employees, mirror the federal law or allow insurers to impose special limits). Year policy went into effect: before 2001 (varies by state) Insurance Type: 11% private insurance Covered conditions:	1997-1999; 2000-2001 Study groups comparable: Yes Study population: Adults with private insurance who lived in a state that passed parity law at least 12 months prior to the interview date; Total: 6228 Exclusion Criteria: NR Population characteristics (intervention): Sex: **:** Female: 48.0%; Mean Age: NR Race: African American: 11%;	Utilization: Any mental health and substance abuse (MH/SA) service users (%), specialty MH/SA service users (%), # of specialty mental health visits; Absolute pct pt change, absolute mean difference; **HCC wave 1** **Any MH/SA users** Intervention: 9.0% Comparison: 10.0% **Absolute pct pt change: -1.0; p = 0.122** **Percentage specialty mental health users (among those who used any MH/SA services)** Intervention: 49 Comparison 48 **Absolute pct pt change: 1.0; p = 0.943** **Number of specialty visits** Intervention: 10.98 Comparison: 12.78 **Absolute mean difference: -1.80; p = 0.35**	**Applicability:** Persons with private insurance living in states with parity mandates. **Conclusions:** Results suggest state parity mandates do not affect utilization of mental health services.

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	Broad based mental health conditions (some states only cover severe mental illness or biologically-based disorders at parity) Comparison: States with no parity laws or with state laws applied only to state employees, mirrored federal law, or allowed insurers to impose special inpatient day or outpatient visit limits.	Hispanic:7%; Other: 5% SES: NR Policyholder type: NR	**HCC wave 2** **Any MH/SA users** Intervention: 7.0% Comparison: 9.0% **Absolute pct pt change: -2.0; p = 0.039** **Percentage specialty mental health users (among those use used any MH/SA services)** Intervention: 46% Comparison: 57% **Absolute pct pt change: -11.0; p = 0.159** **Number of specialty visits** Intervention: 15.27 Comparison: 10.56 **Absolute mean difference: 4.71; p = 0.001** **HCC wave 2; "Full Parity"** Any MH/SA users Intervention: 9.0% Comparison: 9.0% **Absolute pct pt change: 0; p = 0.69** **Percentage specialty mental health users (among those who used any MH/SA services)** Intervention: 41.0% Comparison: 59.0% **Absolute mean difference: -18.0; p = 0.07** **Number of specialty visits** Intervention: 12.68 Comparison: 10.36 **Absolute mean difference: 2.32; p = 0.27**	

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<tr><th>1st Author & Year

Study Design

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Quality Scoring (Limitations)

Funding Source</th><th>Location

Intervention Description

Comparison</th><th>Study Years

Study Population

Baseline population characteristics</th><th>Results

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Applicability

Conclusions</th></tr>
<tr>
<td>Barry 2003
Linked studies: Jensen 1998

Before-After

2002
Kaiser Family Foundation/Health Research & Educational Trust Employer Health Benefits Survey, 1991 Health Insurance Association of America survey.

Fair (3)
1. Description - few characteristics of employers reported, no worker characteristics reported
2. Measurement (exposure) – Does not control for the ERISA exemption
3. Interpretation – Low response rate (50%) in 2002

John D. and Catherine T. MacArthur Foundation, National Institute of Mental Health</td>
<td>Nationwide

Type of legislation/policy: MHPA and 34 states with state mandates implemented

Year policy went into effect:
MHPA: 1998, State mandates: 1991-2002

Insurance Type: Private insurance

Covered conditions:
MHPA: broad-based mental illness; state mandates: varies by state law

Comparison:
Before law implementation</td>
<td>1991, 1995, 2002

Study groups comparable: Yes, random selection of firms, samples for each year contain some of the same firms;

Study population:
Employee benefits managers and public and private employers with three or more workers;
Total: 5245 firms

Exclusion Criteria:
NR

Population characteristics:
Sex: : NR
Mean Age: NR
Race: NR
SES: NR
Policyholder type: NR</td>
<td>Access: Coverage for mental health benefits for inpatient and outpatient care;

Absolute pct pt change;

Workers in Firms covering Mental Health Benefits for Inpatient Care (%)
<table>
<tr><th></th><th>1991</th><th>1995</th><th>2002</th><th>Abs pct pt Change</th></tr>
<tr><td>All insured workers</td><td>87%</td><td>93%</td><td>96%</td><td>9%*</td></tr>
<tr><td>Firm size</td><td></td><td></td><td></td><td></td></tr>
<tr><td>< 50 workers</td><td>65%</td><td>81%</td><td>84%</td><td>19%*</td></tr>
<tr><td>50–199 workers</td><td>73%</td><td>89%</td><td>93%</td><td>20%*</td></tr>
<tr><td>≥200 workers</td><td>88%</td><td>97%</td><td>99%</td><td>11%*</td></tr>
<tr><td>By region</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Northeast</td><td>90%</td><td>92%</td><td>97%</td><td>7%*</td></tr>
<tr><td>South</td><td>87%</td><td>95%</td><td>96%</td><td>9%*</td></tr>
<tr><td>Midwest</td><td>88%</td><td>93%</td><td>96%</td><td>8%*</td></tr>
<tr><td>West</td><td>82%</td><td>86%</td><td>93%</td><td>11%*</td></tr>
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* significantly different 1991 to 2002, p < 0.05

Workers in Firms covering Mental Health Benefits for Outpatient Care (%)
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<tr><td>South</td><td>87%</td><td>92%</td><td>96%</td><td>11%*</td></tr>
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</td>
<td>Applicability: Persons covered by employer-sponsored private insurance plans.

Conclusions: Coverage for care increased for both inpatient and outpatient care, across regions for 1991 to 2002. Larger firms appear to have most consistently offered mental health benefits.</td>
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			Midwest 88% 95% 98% **10%*** West 83% 88% 97% **14%*** * significantly different 1991 to 2002, p < 0.05	
Branstrom 2004 **Linked studies:** Branstrom 2002 Before/After (2 groups) United Behavioral Health (UBH) claims data Fair (2 limitation) 1. Description – no population demographics 2. Sampling -employer groups are similar but we do not know if they represent the state population Funding source not reported	California Type of legislation/policy: California parity mandate Year policy went into effect: 2000 Insurance Type: Private insurance Covered conditions: Severe Mental Illness Comparison: Before law implementation	2000-2001 Study groups comparable: Yes (from same employers) Study population: Enrollees with continuous enrollment in one of two UBH carve our plans who from last quarter of 2000 to first quarter of 2001; Total: (Full carve-out=23,895; partial carve-out=58955) Exclusion Criteria: NR Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Utilization: New users (defined as members, new and preexisting, who had not used UBH services in the previous 12 months); Absolute pct pt change; **Full carve-out group** **New users (%)** After intervention: 3.30 Before intervention: 1.95 **Absolute pct pt change: 1.35** **Partial carve-out group** **New users (%)** After intervention: 4.33 Before intervention: 3.13 **Absolute pct pt change: 1.20**	**Applicability:** Similar employer groups (in the same industry with employees of similar levels of income and education) covered with private insurance. **Conclusions:** Parity does not have a statistically significant association with the increased percentage of new users in either the full or partial carve-out plan.

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Branstrom 2002 Linked studies: Branstrom 2004 Before/After (2 groups) Assumed from employer or MBHO (not reported in study) Fair (2 limitations) 1. Description – no population demographics 2. Sampling -employer groups are similar but we do not know if they represent the state population Funding source not reported	California (CA) Type of legislation/policy: California parity mandate Year policy went into effect: 2000 Insurance Type: Private insurance Covered conditions: Severe Mental Illness Comparison: Before law implementation	2000-2001 Study groups comparable: Yes (from same employers) Study population: Insured by one large employer group in CA Total: (Full carve-out=24,103; partial carve-out=58939) Exclusion Criteria: NR Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR > Insurance Status: 100% insured	Utilization**:** Outpatient visits (Number per 1,000 members per yr); Inpatient days (Number per 1,000 members per yr); Days of intermediate-care services (Number per 1,000 members per yr); Absolute mean difference; **Full-carve out group** **Outpatient visits (per 1,000 members per yr)** After intervention: 672 Before intervention: 892 **Absolute mean difference : -220.0** **Inpatient days (per 1,000 members per yr)** After intervention: 11.9 Before intervention: 18 **Absolute mean difference: -6.1** **Days of intermediate-care services (per 1,000 members per yr)** Intervention: 17.3 Before intervention: 41.5 **Absolute mean difference: -24.2** **Partial carve-out group** **Outpatient visits (per 1,000 members per yr)** After intervention: 663.6 Before intervention:534.8 **Absolute mean difference: 128.8** **Inpatient days (# per 1,000 members per yr)** After intervention: 21.5 Before intervention: 19.3 **Absolute mean difference: 2.2**	**Applicability:** Employees covered by private insurance plans who work for similar employer groups (higher education levels, SES, industry specific). **Conclusions:** Findings suggest that plans with high costs and high service use (partial-carve-out) show stable or declining spending and lower-cost plans show increases at a tolerable level. More comprehensive studies across a broad range of benefits plans and populations are needed.

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			Days of intermediate-care services (per 1,000 members per yr) Before intervention: 26.8 Before intervention: 22.8 **Absolute mean difference: 4.0**	
Burnam 2004 **Linked studies:** Azrin 2007; Azzonne 2011; Busch 2006; Goldman 2006 Other design with concurrent comparison group Plan claims and enrollment data Good (1) 1. Description population demographics Health and Human Services, National Institute on Mental Health, National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, Substance Abuse and Mental Health Services Administration, Agency for Healthcare Research and Quality	Nationwide, US Type of legislation/policy: FEHB Year policy went into effect 2001 Covered conditions: Broad based mental health conditions and substance abuse Comparison: Self-insured non-parity plans	Study years: 1999-2002 Study periods comparable: Yes Study population: Those continuously enrolled (1999-2002) in one of seven FEHB plans or self-insured plans Total: 40000 Population characteristics (intervention): Sex: 52; Mean Age: NR; Race: NR; SES: NR; Policyholder type: employees: 55.6%; adult and dependent child: 44.4%; Subgroup of intervention: Those with major depressive	Utilization: Mental health and substance abuse (MH/SA) service use; Financial Protection: Out-of-Pocket (OOP) Spending Per User; Quality of care: Receipt of appropriate care; Difference-in-difference in probability of MH/SA use from pre- to post; Absolute pct pt change; adjusted odds ratio (OR) **MH/SA use** Baseline: (%) Comparison:20.2% Intervention:13.6% F/U 48m: Comparison: 23.8% Intervention: 16.8% **Difference in difference: -0.4** **Out-of-Pocket (OOP) Spending Per User ($) – effect estimate data only** Plan Type - Region / **Difference-in-difference** National **4.48** FFS-MA1 **-37.24** FFS-MA2 **-34.92** FFS-NE1 **-23.21** FFS-NE2 **-76.51** FFS-W **-42.57** FFS-S **-95.25**	**Applicability:** Those covered by PPO FEHB plans **Conclusions:** Adult and child beneficiaries in all plans were more likely to use mental health and substance abuse services after parity was implemented. Thus, use of mental health and substance abuse services was more likely after parity but at a rate consistent with comparison group.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
		disorder (MDD) Total: 18273 (7 plans combined) Subgroup of intervention: Those with major depressive disorder (MDD) Total: 15799 (7 plans combined) Subgroup of intervention: Those with major depressive disorder (MDD) Total: 10783 (7 plans combined) Children under age 18 continuously enrolled (1999-2002) in one of seven FEHB plans Total: 20000	**Subgroup analysis** **Percentage of enrollees diagnosed with MDD who received any psychotherapy or antidepressant** Plan Type - Region / Pre-parity / Post-parity / **Abs pct pt change** FFS-MA1 92.9% 94.1% **1.2** FFS-MA2 90.4% 92.4% **2.0** FFS-NE1 88.2% 90.7% **2.5** FFS-NE2 91.4% 92.9% **1.5** FFS-W 89.1% 91.9% **2.8** FFS-S 88.8% 92.0% **3.2** HMO-W1 87.6% 90.7% **3.1** **Adjusted Odds Ratio (OR) – Enrollees Receiving Any Psychotherapy or Antidepressant Relative to Post- vs. Pre-parity** Plan Type - Region / OR / 95% Confidence Interval (C.I.) FFS-MA1 **1.23; p≤0.001** **(1.09, 1.39)** FFS-MA2 **1.26; p≤0.001** **(1.11, 1.43)** FFS-NE1 **1.20** **(0.95, 1.52)** FFS-NE2 **1.18** **(0.85, 1.65)** FFS-W **1.26; p≤0.01** **(1.07, 1.46)** FFS-S **1.36; p≤0.0001** **(1.18, 1.57)** HMO-W1 **1.07** **(0.82, 1.38)**	

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions

Percentage of Enrollees Who Received any Antidepressant

Plan Type - Region	Pre-parity	Post-parity	**Abs pct pt change**
FFS-MA1	79.6	81.9	**2.3**
FFS-MA2	79.9	81.8	**1.9**
FFS-NE1	72.3	75.9	**3.6**
FFS-NE2	69.7	75.7	**6.0**
FFS-W	74.8	75.5	**0.7**
FFS-S	80.1	83.5	**3.4**
HMO-W1	75.9	76.4	**0.5**

Adjusted Odds Ratio - Enrollees Receiving Any Antidepressant Relative to Post- vs. Pre-parity

Plan Type - Region	OR	95% C.I.
FFS-MA1	**1.14; p≤0.0001**	**(1.07, 1.22)**
FFS-MA2	**1.14; p≤0.01**	**(1.05, 1.23)**
FFS-NE1	**1.21; p≤0.01**	**(1.05, 1.40)**
FFS-NE2	**1.34; p≤0.01**	**(1.11, 1.61)**
FFS-W	**1.06**	**(0.97, 1.17)**
FFS-S	**1.14; p≤0.01**	**(1.03, 1.26)**
HMO-W1	**1.00**	**(0.85, 1.18)**

Percentage of enrollees diagnosed with MDD who received any psychotherapy

Plan Type - Region	Pre-parity	Post-parity	**Abs pct pt change**
FFS-MA1	64.5	61.4	**-3.1**
FFS-MA2	49.2	50.7	**1.5**
FFS-NE1	53.7	56.6	**2.9**
FFS-NE2	64.1	65.9	**1.8**
FFS-W	54.1	58.9	**4.8**
FFS-S	40.3	44.3	**4.0**
HMO-W1	34.2	46.5	**12.3**

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			Children only MH/SA use (actual) Baseline: (%) Comparison:8.9% Intervention:6.6% F/U 12m: Comparison: 12.3% Intervention: 8.9% **Difference in difference: -1.1**	
Busch 2008 Other pre/post design with concurrent comparison group National Survey of America's Families, National Alliance for Mentally Ill (NAMI) Website; validated w/data collected by other groups Good (1 Limitation) 1. Description - Demographics for total population not by group	Multiple states in the US: Alabama (AL), California (CA), Colorado (CO), Florida (FL), Massachusetts (MA), Michigan (MI), Minnesota (MN), Mississippi (MS), New Jersey (NJ), New York (NY), Texas (TX), Washington (WA), Wisconsin (WI) Type of legislation/policy: State parity mandates Year policy went into effect: 1995 - MN; 1998 - CO; 1999 – NJ; 2000 – CA; 2001 - MA; 2002 - AL; Note - All but MN implemented a parity law during the study period. MN had parity the entire	1997 – 2002 Study groups comparable: Yes Study population: Adults <65 yrs old w/employer-sponsored private insurance; Total: 16,675 Exclusion Criteria: Self-employed, unpaid workers, occasional workers, government employees, and firms with less than 50 employees; Population characteristics (intervention + comparison group): Sex: NR;	Utilization: Use of mental health services**,** At least 1 mental health visit (%); Odds ratio (OR); **Effect estimate only reported** **Use of mental health services** Full sample **OR(SE): 1.081 (.078)** Interaction of parity and low income **OR(SE): 1.256 (.293)** Interaction of parity and poor mental health **OR (SE): 1.212 (.207)** **Use of mental health services – employers w/50 – 100 employees** All employers w/50-100 **OR(SE): 1.512 (.318); p<.05** Low income, <200% FPL **OR (SE): 1.009 (.140)**	**Applicability:** Adults with employer sponsored private insurance **Conclusions**: Results report significant effects of state parity laws on mental health service use among smaller employer groups (50 to 100 employees); among these groups, low-income individuals are most affected.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
	study period; states with parity laws that apply only to state employees, mirror the federal law, or allow insurers to retain inpatient day or outpatient visit limits are not considered parity states in this analysis. Insurance Type: Private insurance Covered conditions: Serious mental illness (CA); biologically-based disorders (CO, NJ, MA); broad-based mental illness (AL, MN) Comparison: Weak/No State Parity Mandate: FL, MI, MS, TX, WA, WI	Mean Age: 55.4% Race: NR; SES: <200% federal poverty level (FPL): 10.8% >Education: No HS diploma: 6.3% HS diploma: 60.9% Bachelor's degree: 32.9%; Policyholder type: NR	Interaction of parity and low income **OR(SE): 1.684 (.430)** Interaction of parity and poor mental health **OR (SE): 1.815 (.638)** **Use of mental health services – employers w/100-500 employees** All employers w/100-500 **OR(SE): 1.043 (.202)** Low income, <200% FPL **OR (SE): .977 (.149)**	
Busch 2006 **Linked Studies:** Burnham '04 Interrupted Time Series Four years of archival enrollment data, health claims/encounter data, and pharmacy claims	Nationwide plans in western, northeast, mid-Atlantic, and southern regions, US Type of legislation/policy: FEHB Year policy went into effect: 2001	1999-2002 Study groups comparable: Yes Study population: Adults age 18-64 enrolled at least 10 of 12 months for study	Utilization: At least 1 psychotherapy visit, at least 1 antidepressant prescription, psychotherapy, antidepressant medication; Diagnosis: Identification rates for MDD; Appropriate Utilization: Duration of follow up (MH/SA visits and/or antidepressants), intensity of follow-up (any MH/SA visit); Absolute pct pt change, relative percent change and odds ratio (OR);	**Applicability:** Adults covered by FEHB PPO regional plans **Conclusions:** Parity under managed care was associated with modest improvements. The observed improvements were consistent with secular trends in MDD treatment.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Good (1 limitation) 1. Interpretation: Loss to follow up (data not reported) and did not control for secular trends	Insurance Type: Private insurance, PPO/POS Covered conditions: Broad-based mental health and substance abuse (All DSM-IV disorders) Comparison: Before intervention implementation	years; enrolled in PPO/POS plan, major depressive disorder (MDD) diagnosis only Total: 35457 Exclusion Criteria: Enrollees who received any diagnosis of schizophrenia or bipolar disorder during the 4 years; Population characteristics: (full sample): > Mean Age: NR > Female: 67.6% > SES: NR > Race: NR > Policyholder Type: Employee: 61.0% Dependent adult: 39.0%	**At least 1 psychotherapy visit** Intervention: 55.4% Comparison: 54.1% **Absolute pct pt change: 1.3** **OR (95% CI): 0.98 (0.94–1.02** **At least 1 antidepressant prescription** Intervention: 80.2% Comparison: 78.2% **Absolute pct pt change: 2.0** **OR (95% CI): 1.14 (1.09–1.18)** **Psychotherapy and/or antidepressant medication** Intervention: 92.7% Comparison: 90.6% **Absolute pct pt change: 1.9** **OR (95% CI): 1.26 (1.18– 1.34)** **Acute phase episode time for MDD post vs pre-FEHB policy change** **Duration of follow up (MH/SA visits and/or antidepressants) ≥4 mo** Intervention: 59.2% Comparison: 51.9% **Absolute pct pt change: 7.3** **OR (95% CI): 1.37 (1.20–1.56)** **Intensity of follow-up (any MH/SA visit) first 2 mo. ≥2 per mo** Intervention: 28.2% Comparison: 25.7% **Absolute pct pt change: 2.5** **OR (95% CI): 1.09(0.95-1.25)** **Intensity of follow up (any MH/SA visit) second 2 mo. ≥1 per**	

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			mo. Intervention: 32.1% Comparison: 30.4% **Absolute pct pt change: 1.7** **OR (95% CI): 1.05 (0.92-1.20)** **Conditional on any psychotherapy, duration ≥3 mo.** Intervention: 59.0% Comparison: 56.8% **Absolute pct pt change: 2.2** **OR (95% CI): 1.11(0.93-1.32)** **Conditional on any psychotherapy, intensity ≥2 per mo**. Intervention: 27.3% Comparison: 30.4% **Absolute pct pt change: -3.1** **OR (95% CI): 0.86(0.72-1.04)** **Conditional on any antidepressant, duration at least 3 mo**. Intervention: 58.6% Comparison: 56.7% **Absolute pct pt change: 1.9** **OR (95% CI): 1.02(0.82–1.26)** **Identification rates for MDD** Intervention: 2.6% Comparison: 2.3% **Absolute pct pt change: 0.3** **Relative percent change: 13.0%**	
Study: Ciemins 2004 Interrupted Time Series Claims data	Massachusetts, US Type of legislation/policy: Minimum benefit mandate Year policy went into	1998-2001 Study groups comparable: Can't tell Study population:	Utilization: Number of children (unique) using any mental health (MH) services; Number of children (unique) using substance abuse (SA) services; Mean difference (standard deviation);	**Applicability:** Those with private insurance coverage in Massachusetts **Conclusions:** The utilization patterns of children and adult

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Fair (2 limitations) 1. No description population demographics 2. Measurement of exposure – Unable to control for ERISA exemption	effect: 2000 Insurance Type: Private insurance Covered conditions: Broad-based mental illness Comparison: Before intervention implementation	Those covered under group insurance commission plan, 07/98 – 12/01 Total (intervention baseline): 35,585 Exclusion Criteria: NR Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	**Number of children (unique) using any MH services** Intervention (SD): 174.80 (31.53) Comparison (SD): 180.29 (42.35) **Mean difference: -5.49** **Number of children (unique) using SA services (weekly mean)** Intervention (SD): 4.83 (1.64) Comparison (SD): 6.72 (3.70) **Mean difference: -1.89** **Number of adults (unique) using any MH services (weekly mean)** Intervention (SD): 1131.28 (175.58) Comparison (SD): 1161.65 (164.52) **Mean difference: -30.37** **Adults only** **Number of adults (unique) using SA services (weekly mean)** Intervention (SD): 28.84 (4.85) Comparison (SD): 30.01 (7.16) **Mean difference: -1.17**	decreased after the implementation of a minimum benefit mandate
Dave 2009 Other design with concurrent comparison group Treatment Episodes Data Set (TEDS); National Household Survey on Drug Abuse (NHSDA) Fair (2 limitations) 1. Description - no description	Nationwide, US Type of legislation/policy: State parity mandates Year policy went into effect: '92-'07 Insurance Type: Private and public insurance	1992-2007 Study groups comparable: Can't tell Study population: 18+ age, received care at private or public facility which received public funding Total: NR	Utilization: treatment admissions for substance abuse (SA); Difference-in-difference-in-difference (obtained by subtracting the coefficient estimate on Criminal Justice Referrals); **Broad Parity Mandates vs. States with Weak/No** **Total SA admissions** **Difference-in-difference-in-difference(SE): 0.128 (.05); p≤0.01** **Self-referred SA admissions**	**Applicability:** Most likely people with private insurance **Conclusions:** States with broad parity mandates that include substance abuse and mental health treatment are associated with an increase in the total number of self-referred treatment admissions.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
of the study population 2. Measurement of exposure - does not account for the ERISA exemption Funding source not reported	Covered conditions: Broad-based mental illness including substance abuse disorders Comparison: States with weak parity mandates	Exclusion Criteria: NR Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	**Difference-in-difference-in-difference(SE): 0.138 (0.0675); p≤0.01** **Privately referred SA admissions** **Difference-in-difference-in-difference(SE): 0.113 (0.07); p<0.05** **Limited Parity vs. Weak/No Parity** **Total SA admissions** **Difference-in-difference-in-difference(SE): 0.047 (.03) p<0.05** **Self-referred SA admission** **Difference-in-difference-in-difference(SE): -0.0125 (0.05); p>.05** **Privately referred SA admissions** **Difference-in-difference-in-difference(SE): -0.031 (0.05); p>.05**	
Dinallo 2009 Before/After Claims data; Harvard Research Team Fair (3 limitations) 1. Description – no description of the study population available from the original data source. 2. Measurement of exposure – does not control for the ERISA exemption 3. Other - data was not stored consistently from one insurer to	New York , US Type of legislation/policy: New York state minimum benefit mandate Year policy went into effect: 2007 Insurance Type: NR Covered conditions: broad-based mental health conditions Comparison: Before intervention	2006-2008 Study groups comparable: NA Study population: Insured by 1 of 5 major NY insurers for 2006-2008 (six months) Total: 8,648,617 Exclusion Criteria: NR Population characteristics: > Mean Age: NR	Access: Percentage of people covered Absolute pct pt change People covered by the “30/20” benefit (%): Large and small group market combined Intervention: 100% Comparison: 42.0% **Absolute pct pt point change: 58.0** People covered by the BBMI/SED benefit (%): Large group market Intervention: 100% Comparison: 11.0% **Absolute pct pt point change: 89.0** Small group market Intervention: 43.7%	**Applicability:** Persons insured by 1 of 5 major NY insurers **Conclusions:** New York state mandate has extended coverage of mental health benefits

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
the next Funding source not reported	implementation	> Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Comparison: 9.60% **Absolute pct pt point change: 34.1** Large and small group market combined Intervention: 80.11% Comparison: 10.48% **Absolute pct pt point change: 69.62**	
Goldman 2006 **Linked studies:** Azrin 2007; Azzonne 2011; Burnam 2004; Busch 2006 Other design with concurrent comparison group Plan claims and enrollment data Good (1) 1. Description population demographics Contract with Department of Health and Human Services to Northrop Grumman and grants from the John D. and Catherine T. MacArthur Foundation for the Network on Mental Health Policy Research, the National Institute of Mental Health, and the UCLA-RAND National Institute of Mental Health Center for Research on Quality in Managed Care	Nationwide, US Type of legislation/policy: FEHB Year policy went into effect: 2001 Covered conditions: Broad based mental health conditions and substance abuse Comparison: Self-insured non-parity plans	Study years: 1999-2002 Study periods comparable: Yes Study population: Adults continuously enrolled (1999-2002) in one of seven FEHB plans or self-insured plans Total: 40000 Population characteristics: Sex: NR; Mean Age: NR; Race: NR; SES: NR; Policyholder type: employees: NR	Utilization: Mental health and substance abuse (MH/SA) service use; Financial Protection: Out-of-Pocket (OOP) Spending Per User; Difference-in-difference in probability of MH/SA use from pre- to post; **MH/SA use (%)** Baseline Comparison:20.60% Intervention:14.05% F/U 48m: Comparison: 23.05% Intervention: 16.40% **Difference in difference (adjusted) (95% CI): -0.10 (0.66, 0.44)** **OOP Spending per User ($)** Baseline Comparison: $938.50 Intervention: $637.00 F/U 48m: Comparison: $1058.00 Intervention: $692.50 **Difference in difference (95% CI): -64.00 (-89.02, 48.92)**	**Applicability:** Those covered by PPO FEHB plans **Conclusions:** Use of mental health and substance abuse services was more likely after parity but at a rate consistent with comparison group. Overall, the implementation of parity was associated with significant reductions in out-of-pocket spending

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Harris 2006 Other design with concurrent comparison group National Surveys on Drug Use and Health (NHSDA) Fair (2 limitations) 1. Measurement (exposure) – Does not control for ERISA exemption 2. Measurement (outcome) - Employers slow to adjust benefit changes Substance Abuse and Mental Health Services Administration Office of Applied Studies	Nationwide, US Type of legislation/policy: States with "strong or moderate" parity mandates Year policy went into effect: Varies by states Insurance Type: Private insurance Covered conditions: broad-based mental health conditions Comparison: States with weak or no parity mandate	2001-2003 Study groups comparable: Can't tell Study population: Adults 18+, had mental health problems, covered by employer-sponsored health insurance Total: 83,351 Exclusion Criteria: NR Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Utilization: Any mental health (MH) care, any MH medication use, any MH outpatient care (all within the last year (%)) Absolute pct pt and relative percent change **Any MH care last year (%)** Intervention: 13.18% Comparison: 12.2 % **Absolute pct pt change: 0.98** **Relative percent change: 8.03%** **Any MH medication use last year (%)** Intervention: 10.26% Comparison: 9.57% **Absolute pct pt change: 0.69** **Relative percent change: 7.21%** **Any MH outpatient care last year (%)** Intervention: 7.55% Comparison: 7.38% **Absolute pct pt change: 0.17** **Relative percent change: 2.30%** **Subgroup analysis** **Among those with K6 Distress Scale Score >6:** **Any MH care last year (%)** Intervention: 27.73 Comparison: 26.74 **Absolute pct pt change: 0.99** **Any MH medication use last year (%)** Intervention: 22.16	**Applicability:** Privately insured adults in states with a parity mandate **Conclusions:** This study suggest that parity expanded utilization of mental health care; predominantly for adults with mild mental health problems

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			Comparison: 21.29 **Absolute pct pt change: 0.87** **Any MH outpatient care last year (%)** Intervention: 16.89 Comparison: 17.26 **Absolute pct pt change: 0.99**	
Jensen 1998 **Link studies:** Barry 2003 Post only 1)1991 Employer Health Benefits Survey; 2)1995 Survey of Employer-Sponsored Health Benefits. Dun and Bradstreet's electronic registry of the nation's employers used as sampling frame; 3)1991 & 1995 US BLS Ongoing Employee Benefit Survey Fair (2 limitations) 1. Description - no worker characteristics reported 2. Measurement (exposure) – Does not control for the ERISA exemption National Institute of Mental	Nationwide, US Type of legislation/policy: State parity mandates Year policy went into effect: between 1991-1995, varies by states Insurance Type: Private insurance Covered conditions: broad-based mental health conditions Comparison: Post only comparison between employer s in states with parity mandates and employers in states with no parity mandate	1991 and 1995 Study groups comparable: Yes, employer groups comparable Study population: Employees of private or public companies in the 22 states with a mandated benefit responding to the 1995 Survey of Employer-Sponsored Health Benefits; Total: 1208 employer groups Exclusion Criteria: Federal Employees and those with self-insured plans	Access: Percentage of workers covered Absolute pct pt change Percent of workers with mental health benefits in 1995 **Inpatient care** Intervention: 85% Comparison: 93% **Absolute pct pt change: -8.0** **Outpatient care** Intervention: 87% Comparison: 92% **Absolute pct pt change: -5.0**	**Applicability:** Persons with private insurance **Conclusions** State mandates did not have an effect on whether employers provided at least some mental health benefits

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Health		Population characteristics: > Mean Age: NR > Female: NR > SES: NR > Race: NR > Policyholder Type: NR		
Klick 2006 Interrupted time series State mortality data files; National Center for Health Statistics Compressed Mortality file Good (1 limitation) 1. Description - No demographics Funding source not reported	Nationwide, US Type of legislation/policy: state parity mandates Year policy went into effect: Varies by state Insurance Type: Medicaid, Medicare, FEHB, private insurance plans Covered conditions: Broad-based mental health conditions Comparison: Before intervention implementation Comparison: NA (time series data)	1981-2000 Study groups comparable: NA Study population: Ages 25-64, committed suicide Total: NR Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Morbidity: Suicide rates; TSLS regression coefficient with t-statistic; **Effect estimate only reported** **Arm** **Sample Size** **# Parity States** **TSLS Regression** **t-stat*** 1 1000 42 **-0.739** **-1.70** 2 1000 18 **-0.245** **-0.26** 3 1000 4 **-0.145** **-1.70** 4 1000 20 **-0.212** **-0.27** 5 1000 18 **-0.642** **-1.10** 6 1000 4 **-6.513** **-1.50** 7 1000 20 **-1.057** **-0.82** **Arms:** 2-Required mental health benefit vs. no mandate plus states with laws not mandates to provide benefits 3-Partial parity vs. less than any parity (includes no mandates) 4-Full parity vs. less than full parity (includes no mandates) 5-Mandated offerings only vs. no mandates 6-Mandated benefits that are not on parity with physical health vs. no mandates 7-Mandated benefits that are on parity with physical health vs. no mandates ***** p<.05 in all arms	**Applicability:** Because inclusion criteria included various insurance types and the study gave no **Conclusions:** Mental health mandates are effective in reducing suicide rates

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Lang 2011 Other Design (interrupted time series) with Concurrent Comparison Multiple Cause-of-Death Public-Use Files (NCHS) Good (1 Limitation) 1. Description - No demographics Funding source not reported	Nationwide, US Type of legislation/policy: state parity mandates Year policy went into effect: Varies by state Insurance Type: NR Covered conditions: NR Comparison: NA (time series data)	1990-2004 Study groups comparable: NA Study population: Suicide data from States with Parity laws and those with "Mandated Offering" from study years Total: NR Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Mortality: Suicide Rates; Log difference, Relative percent change; **The Impact of Mental Health Mandates on State Suicide Rates (effect estimate only reported)** **Log difference = -0.05 (SE – 0.02), (p<.01)** **Log Difference in suicide rate relative to enactment year (standard error):** Years prior to enactment: 5+ (0.01) (0.02); 4 (-0.004) (0.02); 3 (-0.002) (0.02); 2 (0.01) (0.02); 1 (0.01) (0.02) Years After: 1 (-0.06*) (0.03); 2+ (-0.03*) (0.03) * p<.05 **<u>Age-Specific Regressions:</u>** Age 18-64 **Log Suicide Rate (SE):-0.05 (0.01), p<.01** Age 18-34 **Log Suicide Rate (SE): -0.03 (0.02), p<.05** Age 35-64 **Log Suicide Rate (SE): -0.05 (0.02), p<.01** Age 65+ **Log Suicide Rate = 0.01, p>.1** **<u>Regressions by type of law:</u>** Parity Law **Relative percent change = -0.06 (0.02)** Mandated Offering Law	**Applicability:** Adolescents and Adults living in the United States from 1990-2004. **Conclusions:** Results suggest state parity mandates have had a significant impact on reduction in suicides. This is being driven by the population most likely to be impacted by mental health insurance parity laws, primarily the 35-64 year olds and to a lesser degree the 15-34 year olds.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			Relative percent change = -0.12 (0.03), p<.01 Mandated if Offered Law **Relative percent change = -0.04 (0.02), p<.1** No Law **Relative percent change = -0.03 (0.02), p>.1**	
McConnell 2011 Other Design with concurrent comparison group Intervention group: on-site interviews, medical, pharmacy, claims data; Comparison group: Thomson-Reuters Marketscan database Good (1Limitation) 1. Interpretation – Group comparability (statistically significant difference between intervention and comparison group demographics) National Institute on Drug Abuse	Oregon, US Type of legislation/policy: Oregon state parity Year policy went into effect: 2007 Insurance Type: Private insurance, PPOs Covered conditions: Broad based mental illness Comparison (n): Those covered by self-insured plans in Oregon	2005-2008 Study groups comparable: No, self-insured plans more likely to include females and children Study population: Age 4-64 yrs, continuously enrolled in 1 of 4 PPO's in which on-site interviews were conducted or self-insured plans in Oregon; Total: 119,962 Exclusion Criteria: NR Population characteristics (intervention): > Mean Age (SD): Plan A: 37.4 (17.9) Plan B: 38.7 (17.3) Plan C: 37.4 (17.4)	Utilization**:** Any mental health (MH) or substance abuse (SA) service use (%); Difference-in-difference probability of using MH and SA services (95% CI); **Any MH or SA service use (%)** Intervention: Pooled Group Health Plans Pre-parity: 20.72% Post-parity: 22.77% Comparison Pre-parity: 23.72% Post-parity: 26.08% **Difference-in-difference (95%CI) = -0.28 (-0.79, -0.11)** **Children only** **Any MH or SA service use (%)** Intervention: Pooled Group Health Plans Pre-parity: Not reported Post-parity: Not reported Comparison: Pre-parity: 10.84% Post-parity: 12.93% **Difference-in-difference (95%CI): 0.007 (-0.9, 0.8)**	**Applicability:** Privately insured adults and children in PPO plans living in Oregon. **Conclusions:** Two of four plans experienced statistically significant decreases in mental health and substance abuse service use relative to self-insured (parity exempt) comparison plans. The remaining two plans showed no statistically significant increase or decrease in utilization relative to comparison.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
		Plan D: 36.4 (17.0) > Female: 50% > SES: NR > Race: NR > Policyholder Type: Employee: 53% Dependent adult:19% Dependent child: 28%		
McGuire 1982 Retrospective cohort Psychologists' and psychiatrists' hours based on formula approved by American Medical Association and American Psychological Association **Quality Scoring:** Fair (2 Limitations) 1. Description – pop. characteristics not available from data sources 2. Measurement (exposure) – does not account for ERISA Foundation's Fund for Research in Psychiatry	Nationwide, US Type of legislation/policy: State mandated coverage for mental health services Year policy went into effect: Policies in effect by 1978 in the following states: CO, CT, MD, MA, MN, NH, ND, OH, WI Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: States without a mandate	1976-1978 Study groups comparable: Can't tell Study population: States with populations >1,000,000 Total: NR Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Utilization :Use of psychiatrists' and psychologists' services in fee-for-service practice; Absolute pct pt change and regression coefficient t-statistic; **Effect estimate only reported:** **Use of psychiatrists' services 1978 - All states** **Absolute pct pt change: 12.3** **t-statistic: 1.33 (ns)** **Use of psychiatrists' services 1978 - 38 states pop. > 1 million** **Absolute pct pt change: 9.18** **t-statistic: 0.88 (ns)** **Use of psychologists' services - All states** **Absolute pct pt change: 24.9** **t-statistic: 1.18 (ns)** **Use of psychologists' services - 38 states pop. > 1 million** **Absolute pct pt change: 18.0** **t-statistic: 1.26 (ns)** Note – estimate for 38 states was used for analysis based on the author's note that it is considered a more accurate estimate of psychologists' services	**Applicability:** Persons covered by private insurance plans. **Conclusions:** Mandates for mental health benefits may improve service use among those with private insurance

<table>
<tr><th>1st Author & Year

Study Design

Data Source

Quality Scoring (Limitations)

Funding Source</th><th>Location

Intervention Description

Comparison</th><th>Study Years

Study Population

Baseline population characteristics</th><th>Results

Outcomes

Effect size metric

Effect estimate (effect estimates used in analysis are in bold)</th><th>Summary

Applicability

Conclusions</th></tr>
<tr>
<td>Morrisey 1987

Before/After

Bureau of Labor Statistics Employee Benefit Survey (BLS-EBS)

Fair (3 limitations)
1. Description - Population not well described
2. Data analysis - did not control for secular trends
3. Interpretation – (confounding) – did not include small employers (<250 employees) in some analysis

National Center for Health Services and Health Care Technology Assessment grant</td>
<td>Nationwide, US
Intervention: State mandates for substance abuse

Type of legislation/policy: state mandates for alcoholism in 35 states, 18 states mandated coverage for drug abuse treatment

Year policy went into effect: <1985

Insurance Type: Private insurance

Covered conditions: Alcohol treatment, drug abuse treatment

Comparison: Before intervention implementation</td>
<td>1981, 1983, 1985

Study groups comparable: Can’t tell

Study population: workers who completed BLS-EBS survey during study period
Total: 1275 to 1350 employer groups;

Exclusion Criteria: Executives (involved in policy making); part-time, temporary and seasonal workers;

Population characteristics:
> Mean Age: NR;
> Female: NR
> SES: NR
> Race: NR
> Policyholder Type: NR</td>
<td>Access: Percentage of employees covered by alcoholism and drug abuse treatment;

Absolute pct pt change;

Percent Employees Covered for Alcoholism treatment Before/After State Mandate (1983 v 1985)
<table><tr><th></th><th>1981</th><th>1983[a]</th><th>1985</th><th>Absolute pct pt change</th></tr><tr><td>Overall</td><td>36.2</td><td>53.3</td><td>68.5</td><td>15.2</td></tr><tr><td>By Region</td><td></td><td></td><td></td><td></td></tr><tr><td>Northeast</td><td>39.5</td><td>53.9</td><td>67.9</td><td>14.0</td></tr><tr><td>South</td><td>31.9</td><td>43.0</td><td>61.3</td><td>20.3</td></tr><tr><td>North central</td><td>41.3</td><td>61.3</td><td>71.6</td><td>10.3</td></tr><tr><td>West</td><td>37.3</td><td>58.6</td><td>77.8</td><td>19.2</td></tr><tr><td>By Number of Employees</td><td></td><td></td><td></td><td></td></tr><tr><td>50-99</td><td>25.0</td><td>46.1</td><td>62.8</td><td>16.7</td></tr><tr><td>100-499</td><td>30.9</td><td>45.1</td><td>61.7</td><td>16.6</td></tr><tr><td>500-999</td><td>36.2</td><td>48.1</td><td>58.6</td><td>10.5</td></tr><tr><td>1000-2499</td><td>36.5</td><td>48.7</td><td>67.3</td><td>18.6</td></tr><tr><td>2500+</td><td>43.5</td><td>68.8</td><td>81.9</td><td>13.1</td></tr></table>
[a]1983 used pre-intervention; 1981 not available for Drug Abuse treatment

Percent Employees Covered for Drug Abuse treatment Before/After State Mandate (1983 v 1985)
<table><tr><th></th><th>1983</th><th>1985</th><th>Absolute pct pt change</th></tr><tr><td>Overall</td><td>42.9</td><td>61.1</td><td>18.2</td></tr><tr><td>By Region</td><td></td><td></td><td></td></tr><tr><td>Northeast</td><td>41.0</td><td>59.7</td><td>18.7</td></tr><tr><td>South</td><td>35.0</td><td>53.0</td><td>18.0</td></tr><tr><td>North central</td><td>51.0</td><td>65.1</td><td>14.1</td></tr><tr><td>West</td><td>46.6</td><td>71.2</td><td>24.6</td></tr><tr><td>By Number of employees</td><td></td><td></td><td></td></tr><tr><td>50-99</td><td>29.0</td><td>53.5</td><td>24.5</td></tr></table>
</td>
<td>Applicability: Employer-sponsored coverage in firms within the US

Conclusions: Growth in employer-sponsored coverage for alcoholism and drug abuse treatment can be attributed, in part, to the increase in state mandates over this time period</td>
</tr>
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1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			100-499 32.5 54.7 **22.2** 500-999 39.5 53.3 **13.8** 1000-2499 37.9 56.3 **18.4** 2500+ 60.1 75.1 **15.0** **By Insurance Type** HMO 89.2 88.0 **-1.2** Blue Cross 63.4 76.0 **13.4** Commercial 34.6 50.3 **15.7** Self-insured 30.6 56.4 **25.8**	
Morton 2005 Before/After National Compensation Survey; Employee Benefits Survey Fair (3 limitations) 1. Description – No description of study participants across surveys 2. Measurement of the exposure – Does not account for the ERISA exemption 3. Interpretation - Comparable groups: Different surveys used for pre/post data - EBS/NCS Funding source not reported	Nationwide, US Type of legislation/policy**:** Federal Mental Health Parity Act (MHPA) Year policy went into effect: 1998 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: Before intervention implementation	1997 - 2002 Study groups comparable: Can't tell Study population: Workers in private industry, state and local government and employers with one or more workers; Total: NR Exclusion Criteria: Workers in Federal government and quasi-Federal agencies, military personnel, agricultural workers, workers in private households, the self-employed, volunteers, unpaid workers, those receiving long-term disability benefits,	Access: Percentage of employees covered the same for mental health (MH) benefits and physical health (PH) benefits; percentage of employees covered the same for alcohol abuse benefits and PH benefits; Absolute pct pt change; **Employees covered the same for mental health (MH) benefits and physical health (PH) benefits (%)** All employees / 1-99 employees / 100 + employees **Inpatient** Intervention: 11.0 / 14.0 / 9.0 Comparison: 12.0 / NR / NR **Abs pct pt Change: -1.0 / --- / ---** **Outpatient** Intervention: 7.0 / 10.0 / 6.0 Comparison: 2.0 / NR / NR **Abs pct pt Change: 5.0 / --- / ---** **Percentage of employees covered the same for alcohol abuse benefits and PH benefits**	**Applicability:** May not be applicable beyond NCS/EBS survey demographics and criterion **Conclusions:** Outpatient coverage increased for both mental health and substance abuse while inpatient coverage decreased for both post enactment of MHPA

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
		those working overseas, those who set their own pay and token wages; Total: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	All employees / 1-99 employees / 100 + employees **Inpatient detoxification** Intervention: 20.0 / NR / NR Comparison: 25.0 / 26.0 / 15.0 **Abs pct pt change: -5.0 / --- / ---** **Inpatient rehabilitation** Intervention: 8.0 / 14.0 / 4.0 Comparison: 7.0 **Abs pct pt change: 1.0 / --- / ---** All employees / 1-99 employees / 100 + employees **Outpatient rehabilitation** Intervention: 8.0 / 12.0 / 6.0 Comparison: 6.0 / NR / NR **Abs pct pt change: 2.0 / --- / ---**	
Pacula 2000 Retrospective cohort Healthcare for Communities Survey (HCC) wave 1; National Alliance on Mental Illness Fair (2 limitations)	Nationwide, US Type of legislation/policy: Strict state parity mandates that passed at least 1 year prior to the study Year policy went into	1997-1998 Study groups comparable: Can't tell Study population: Adults 18 years ad older; Total: 6243	Utilization: Any MH care, any MH specialty care, number of MH specialty visits; Mean difference and multivariate logistic regression coefficient (z-score); **Any mental health care** Parity states mean (SD): 0.09 (.28) Non-parity states mean (SD): 0 .11 (.31)	**Applicability:** Most likely to adult population with private insurance plans **Conclusions:** States that pass parity legislation do not experience significant increases in utilization of

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Limitations for: 1. Measurement (exposure) - cannot identify those under ERISA exemption. 2. Data analysis - does not control for plan type Robert Wood Johnson Foundation and National Institute for Mental Health	effect: Varies by state Insurance Type: Private insurance Covered conditions: Varies by state from serious mental illness only to board-based mental health conditions Comparison: States without a parity mandate	Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	**Mean difference: -0.02** **Multivariate logistic regression coefficient (z-score):** Parity states vs non-parity states: **-0.44 (-2.63)** States with parity legislation vs. states without (predicted parity legislation*those in poor mental health): **-0.79 (-0.88)** **Any MH specialty care** Parity states: mean (SD): 0.04 (.19) Non-Parity states: mean (SD) =0 .05 (.22) **Mean difference: -.01** **Multivariate logistic regression coefficient (z-score):** Parity states vs non-parity states: **-0.62 (-1.96)** States with parity legislation vs. states without (predicted parity legislation*those in poor mental health): **-0.53 (-.34)** **Number of MH specialty visits** Parity states: mean (SD) = 11.86 (12.78) Non-parity states: mean (SD) = 12.81 (14.27) **Mean difference: -0.95** **Multivariate logistic regression coefficient (z-score):** Parity states vs non-parity states = **.08 (.16)** States with parity legislation vs. states without (predicted parity legislation*those in poor mental health): **0.30(.46)** **Strict parity mandate vs No/Weak parity mandate (effect estimate only reported)** **Number of MH visits** **Multivariate linear regression coefficient (z-score)** States with parity legislation vs. states without (predicted parity legislation) = **-.310 (-.958)** States with parity legislation vs. states without (predicted parity legislation*MHI-5≤50) = **.827 (2.918)**	mental health services. However, when analyses are restricted to states with more generous legislation (more comprehensive parity), there are more mental health visits among those in poor mental health

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Rosenbach 2003a Interrupted Time Series Blue Cross Blue Shield Vermont (BCBSVT) and Kaiser Claims/ Encounter data Fair (2 limitation) 1. Description – does not provide demographics of the study population 2. Measurement of exposure – does not control for ERISA exemption Substance Abuse and Mental Health Services Administration	Vermont, US Type of legislation/policy: Vermont Mental Health and Substance Abuse Parity Law Year policy went into effect: 1998 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions and substance abuse Comparison: Before intervention implementation	1996-1998 Study groups comparable: NA Study population: Those continuously enrolled in one of the two health plans during '98-'99 calendar year; Total: NR Exclusion Criteria: Those insured under Medicaid, federal or state employee contracts, plan members residing outside Vermont, those over age of 64. Did not include those enrolled in BCBSV plans that had managed care pre intervention Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Utilization: Number of mental health (MH) users per 1000 members per quarter; number of MH services used per 1000 members per quarter; Number of substance abuse (SA) users per 1000 members per quarter; number of SA services used per 1000 members per quarter; Relative percent change (% change) ; multivariate regression with odds ratio; **Kaiser/Community Health Plan (Managed care):** **Number MH services users/1000 members/quarter:** Any MH Visit: 19.28 / 20.53 / **6.5; p<.05** Inpatient: 0.34 / 0.21 / **-38.2; p<.05** Partial: 0.08 / 0.14 / **75.0** Outpatient: 19.24 / 20.48 / **6.4; p<.05** **Number MH services used per 1000 members/quarter:** Inpatient: 3.98 / 2.51 / **-36.9** Partial: 0.80 / 1.16 / **45.0** Outpatient: 19.24 / 20.48 / **14.4; p<.05** **Number SA services users/1000 members/quarter:** Any SA Visit: 5.69 / 4.77 / **-16.2; p<.01** Inpatient: 0.56 / 0.18 / **-67.9; p<.01** Partial: 0.18 / 0.24 / **33.3** Outpatient: 5.43 / 4.68 / **-13.8; p<.01**	**Applicability:** Individuals residing in Vermont insured through BCBSVT or Kaiser for at least one year from the study period of 1996-1999 **Conclusions:** Use of mental health services in general improved with parity while use of substance abuse services decreased

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions

Number SA services used per 1000 members/quarter:

	Before	After	% change
Inpatient	5.70	1.19	**-79.1; p<.01**
Partial	1.52	1.79	**17.8**
Outpatient	23.97	21.08	**-12.1**

Blue Cross Blue Shield VT: Unmanaged

Number MH services users/1000 members/quarter:

	Before	After	% change
Any MH Visit	31.13	33.57	**7.8; p<.01**
Inpatient	0.23	0.40	**73.9; p<.05**
Partial	--	0.07	**--**
Outpatient	31.09	33.54	**7.9; p<.01**

Number MH services used per 1000 members/quarter:

	Before	After	% change
Inpatient	1.99	3.18	**59.8; p<.05**
Partial	---	0.75	---
Outpatient	156.79	159.43	**1.7**

Number SA services users/1000 members/quarter:

	Before	After	% change
Any SA Visit	4.98	3.53	**-29.1; p<.01**
Inpatient	0.39	0.18	**-53.8; p<.01**
Partial	0.25	0.33	**32.0**
Outpatient	31.09	33.54	**-30.3; p<.01**

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			Number SA services used per 1000 members/quarter: Before / After / **% change** Inpatient 4.21 / 1.91 / **-54.6; p<.01** Partial 2.47 / 5.18 / **109.7; p<.05** Outpatient 23.08 / 14.24 / **-38.3; p<.01**	
Rosenbach 2003b Cross Sectional survey, posttest only Unemployment Insurance (UI) data maintained by Vermont Department of Employment and Training (DET); employer CATI survey Fair (2 limitation) 1. Description – does not provide demographics of the study population 2. Data analysis – does not control for secular trends Substance Abuse and Mental Health Services Administration and Department of Health and Human Services	Vermont, US Type of legislation/policy: Vermont Mental Health and Substance Abuse Parity Mandate Year policy went into effect: 1998 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions including substance abuse Comparison: NA	2000 Study groups comparable: NA Study population: Employers in operation in Vermont 1998 and earlier Total: 806 employers Exclusion Criteria: Employers with fewer than 5 employees in 1999, Federal and State government entities Population characteristics: > Mean Age: NR; > Female: NR > SES: Self-reported financial status (of employer): Excellent: 31.1% Good: 48.0%	Access: Eligible employees participating in health plans (%); Absolute pct pt difference; **Eligible employees participating in health plans (%)** Fully insured / Self-insured / **Abs pct pt difference** Increased 11.9 / 23.9 / **-12.0** Decreased 7.0 / 4.4 / **2.6** No change 81.1 / 71.7 **Eligible employees electing dependent coverage post Vermont mandate implementation (%)** Fully insured / Self-insured / **Abs pct pt difference** Increased 7.3 / 19.5* / **-12.2** Decreased 8.9 / 6.9 / **2.0** No change 83.8 / 73.6 * p<0.05	**Applicability:** Employees with employer-sponsored private insurance who live and work in Vermont **Conclusions:** Parity in benefit design has been achieved; however, the level of employees electing insurance coverage in fully insured plans remains largely unchanged

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
		Fair or poor: 21.0% > Race: NR > Policyholder Type: NR		
Study: Rosenbach 1997 Time Series Health Care Financing Administration 's Part B Medicare Annual Data beneficiary files Fair (3 limitations) 1. Description – does not provide demographics of the study population 2. Measurement for exposure-intervention is not clear 3.Data Analysis- Did not control for secular trends National Institute of Mental Health (NIMH)	Nationwide, US Type of legislation/policy: Medicare Part B benefits expansion Year policy went into effect: '88-'92 Insurance Type: Public insurance Covered conditions: Broad-based mental health conditions Comparison: Before intervention implementation	1987-1992 Study groups comparable: NA Study population: Any Medicare recipient during study years Total: 14436540 Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Utilization : Number of MH users per 100 Medicare Beneficiaries; Relative percent change; **Number of MH users per 100 Medicare Beneficiaries** Intervention: 4.02 Comparison: 2.33 **Relative percent change: 72.9%** Note: see study for results by age	**Applicability:** Medicare recipients with plans implementing Medicare Part B expansion **Conclusions:** There is an increase in user rate and average number of services post benefits expansion
Sturm 2000 Retrospective cohort Healthcare for Communities wave 1 and Community Tracking surveys	Nationwide, US Type of legislation/policy: State parity mandates Year policy went into effect: Prior to survey	1996-1998 Study groups comparable: Can't tell Study population: Adults 18-64 with	Access: Perceived insurance generosity got better among those with any MH disorder; perceived it easier to get good healthcare among those with any MH disorder; Absolute pct pt change; multivariate logistic regression OR with standard error (SE);	**Applicability:** Working age adults with private insurance who live in states with parity mandates **Conclusions:** Perception of

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Fair (2 limitations) 1. Measurement (exposure) - cannot identify those under ERISA exemption. 2. Data analysis - does not control for plan type Robert Wood Johnson Foundation; National Institute of Mental Health	(1997) Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: States without parity mandates	private insurance who have expressed need for mental health services Total: 2085 Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	**Perceived insurance generosity got better among those with any MH disorder** Intervention: 21.6 Comparison: 16.5 **Absolute pct pt change: 5.1** **Multivariate logistic regression OR (SE): -0.225 (.249); p>0.05** **Perceived easier to get good healthcare among those with any MH disorder** Intervention: 16.3 Comparison: 13.0 **Absolute pct pt change: 3.3** **Multivariate logistic regression OR (SE): -0.172 (.236); p>0.05**	access to mental health care was similar in both groups
Sturm 1999 Retrospective Cohort Healthcare for Communities (HCC) and Community Tracking Survey (CTS) Fair (2 limitation) 1. Measurement (exposure) - cannot identify those under ERISA exemption; also uninsured may be included (full sample) 2. Interpretation - potential confounding by other factors. National Institute of Mental Health (NIMH); Robert Wood	Nationwide, US Type of legislation/policy: state parity mandates Year policy went into effect: Prior to survey (1997) Insurance Type: 64% private insurance Covered conditions: Broad-based mental health conditions Comparison: States without parity mandates	1997-1998 Study groups comparable: Can't tell Study population: Adults 18-64 with private insurance; Total: 49077 Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR	Utilization: Any mental health (MH) service use and MH specialty care use; Absolute pct pt change; mean difference; **Full sample** **Any MH use (%)** Intervention: 5.6% Comparison: 6.8% **Absolute pct pt change: -1.2; p<0.05** **MH specialty care use (%)** Intervention: 3.9% Comparison: 5.5% **Absolute pct pt change: -1.0; p<0.001** **Privately insured only**	**Applicability:** Those with private insurance in states with mental illness mandates **Conclusions:** States with below-average utilization were more likely to enact state parity legislation, but utilization in those states continues to lag behind sates without parity legislation.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Johnson Foundation		> Policyholder Type: NR	**Any MH use (%)** Intervention: 5.4% Comparison: 7.0% **Absolute pct pt change: -1.6; p<0.05** **MH specialty care use:** Intervention: 3.8% Comparison: 5.7% **Absolute pct pt change: -1.9; p<0.001** **Number of MH specialty visits in past yr:** Intervention: 10.83 Comparison: 13.33 **Mean difference: -2.51; p<0.001**	
Sturm 1998 Arm 1: Time series (interrupted) Arm2: Before/After (1 group) Claims data from US Behavioral Health, utilization reports from State of Ohio and actuarial summaries Fair (3 limitation3) 1. Description – lack of demographic data. 2. Data analysis – no control for secular trends 3. Missing data -Individual level data only available for 2 years.. National Institute of Mental	Ohio, US Type of legislation/policy: Ohio state employee parity mandate Year policy went into effect: 1990 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: Before intervention implementation	1989-1997 Study groups comparable: Can't tell Study population: Adults 18-64 with private insurance Total: Arm 1:55285; Arm 2: 87639 Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type:	Utilization: Outpatient visits for MH/SA per 1000; Intensive outpatient days per 1000 members; Inpatient days for MH (number per 1000 members per year) Absolute mean difference **Arm1:** **Outpatient visits for MH/SA per 1000 members (92/93 vs. 96/97)** Intervention: 476 Comparison: 534 **Absolute mean difference: -58.0** **Intensive outpatient days per 1000 members** Intervention: 34.4 Comparison: 28.4 **Absolute mean difference: 6.0** **Inpatient days for MH per 1000 members** Intervention:20.1	**Applicability:** States with similar parity mandates and indemnity/HMO plans (Unmanaged/managed carve out) **Conclusions:** Under parity conditions and managed care a decrease in utilization for indemnity plans occurred but an increase in utilization occurred for HMO plans except for inpatient care.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Health, National Institute on Drug Abuse; Robert Wood Johnson Foundation		NR	Comparison: 44.0 **Absolute mean difference: -23.9** **Arm 2:** **Outpatient visits for MH/SA per 1000 members (92/93 vs. 96/97)** Intervention: 547 Comparison: 368 **Absolute mean difference: 179.0** **Intensive outpatient days per 1000 members** Intervention: 14.5 Comparison: 38.8 **Absolute mean difference: 24.3** **Inpatient days for MH per 1000 members** Intervention:16.8 Comparison: 32.6 **Absolute mean difference: -15.8**	
Teich 2007 Before/After Mercer National Survey of Employer-sponsored Health Plans in 1997 and 2003 Fair (3 limitations) 1. Description - original data source does not describe the population 2. Data analysis - Does not control for secular trends 3. Interpretation - Loss to follow up	Nationwide, US Type of legislation/policy: federal MHPA Year policy went into effect: 1998 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: Before	1997 and 2003 Study groups comparable: Can't tell Study population: Adults with employer-sponsored health insurance, working in the US; Total: 2128 Exclusion Criteria: NR Population characteristics:	Access: Percentage of employers covering specific MH services in primary plans (%); Absolute pct pt change; **Employers with less than 500 employees** **Percentage of employers covering specific MH services in primary plans (%):** Inpatient psychiatric care Intervention: 88.00 Comparison: 94.00 **Absolute pct pt change: -6.0; p<0.05** Non-hospital residential care	**Applicability:** Those with private insurance **Conclusion:** Overall, percentage of employers covering mental health benefits increased for outpatient services and decreased for inpatient and crisis services. Considering the baselines are relatively high for all but non-hospital residential care and crisis services, the team also concludes that, in general, employers did not drop any

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
Funding source not reported	intervention implementation	> Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type: NR	Intervention: 48.00 Comparison: 52.00 **Absolute pct pt change: -4.0** Intensive outpatient treatment Intervention: 72.00 Comparison: 64.00 **Absolute pct pt change: 8.0; p<0.05** Outpatient psychotherapy Intervention: 80.00 Comparison: 85.00 **Absolute pct pt change: -5.0; p<0.05** Crisis services Intervention: 46.00 Comparison: 49.00 **Absolute pct pt change: -3.0** **Employers with more than or equal to 500 employees** **Percentage of employers covering specific MH services in primary plans (%):** Inpatient psychiatric care Intervention:98.00 Comparison: 98.00 **Absolute pct pt change: 0** Non-hospital residential care Intervention: 40.00 Comparison: 54.00 **Absolute pct pt change: -14.0; p<0.05** Intensive outpatient treatment Intervention: 76.00	mental health benefit coverage due to parity

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
			Comparison: 71.00 **Absolute pct pt change: 5.0; p<0.05** Outpatient psychotherapy Intervention: 91.00 Comparison: 93.00 **Absolute pct pt change: -2.0** Crisis services Intervention: 32.00 Comparison: 48.00 **Absolute pct pt change: -16.0; p<0.05**	
Trivedi 2008 Time series with concurrent comparison group Medicare HEDIS, Competitive Edge Database, US census Good (1 limitation) 1. Interpretation (confounding) – could not control for other mechanisms plans used to reduce mental health services Health Policy Scholars Award from Pfizer Foundation. Post Doc training grant from Agency for Healthcare Research and Quality.	Nationwide, US Type of legislation/policy: Full parity - Medicare plans mental health cost - sharing less than or equal to primary care cost-sharing; intermediate parity – mental health cost-sharing greater than primary care cost - sharing but less than or equal to specialist cost – sharing Year policy went into effect: 2002-2006 Insurance Type: Public insurance Covered conditions: NR Comparison: Individuals	2002-2006 Study groups comparable: Yes Study population: Individuals enrolled in Medicare managed care plans who had been hospitalized for a mental illness between 2002-2006; plans had to have participated in Medicare for at least 2years; Total: 48,058 Exclusion Criteria: NR Population characteristics (full parity group):	Appropriate utilization**:** Rate of follow up, 7 and 30 days after hospitalization for mental illness; Adjusted percentage point difference (adjusting for individual and health plan characteristics, year, clustering, repeated measures of enrollees); **Full vs. no parity (effect estimate only reported)** Follow-up in 7 days: **Adjusted pct pt difference (95% CI): 10.5 (3.8, 17.1), p = 0.002** Follow-up in 30 days: **Adjusted pct pt difference (95% CI): 10.9 (4.6, 17.3), p<.001** **Intermediate vs. no parity (effect estimate only reported)** Follow-up in 7 days: **Adjusted pct pt difference (95% CI): 3.0 (-0.5, 6.5), p = 0.10** Follow-up in 30 days: **Adjusted pct pt difference (95% CI): 4.0 (0.2, 7.8), p = 0.04**	**Applicability:** Those 65 years and older in US national population insured through Medicare managed care plans. **Conclusions:** Enrollees in plans with some level of parity are more likely to receive timely outpatient care following a hospitalization for mental illness.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
	in Medicare managed care plans without parity	> Mean Age: 67; > Female: 61% > SES: Below poverty level (%): 11% > Race: White: 81% Black: 13% Other: 6% > Policyholder Type: NR	**Discontinued v. maintained parity (effect estimate only reported)** Follow-up in 7 days: **Adjusted pct pt difference (95% CI): 19.0 (6.6, 31.3), p = 0.003** Follow-up in 30 days: **Adjusted pct pt difference (95% CI): 14.2 (4.5 to 23.9), p = 0.007**	
Study: Zuvekas 2006 Before/After Medical Expenditure Panel Survey Fair (2 limitations) 1. Measurement of exposure - did not control for ERISA exemption 2. Interpretation (confounding) – study did not control for the effect of state mandates Funding source not reported	Nationwide, US Type of legislation/policy: federal MHPA Year policy went into effect: 1998 Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: Before intervention implementation **Inclusion Criteria:** <65, insured by private health insurance plans for the	1996-2003 Study groups comparable: Can't tell Study population: Adults the US age <65, insured by private health insurance plans for the entire calendar year Total: 25,530 Exclusion Criteria: NR Population characteristics: > Mean Age: NR; > Female: NR > SES: NR > Race: NR > Policyholder Type:	**Utilization:** Mental health (MH) service use (%) and mean number of visits per user; financial protection - mean out of pocket expenses (OOP); Absolute pct pt change and mean difference; **Any MH ambulatory visits (%)** Intervention: 7.1% Comparison: 6.8% **Absolute pct pt change: 0.3** **Any prescription drug fills for MH per user (%)** Intervention: 9.5% Comparison: 6.2% **Absolute pct pt change: 3.3** **Mean number of ambulatory visits for MH per user** Intervention: 6.4% Comparison: 7.2% **Absolute pct pt change: -0.8** **Mean # of prescription drug fills for MH per user** Intervention: 8.0%	**Applicability:** Adults with private insurance **Conclusions:** The overall result suggests MHPA had no effect in increasing utilization and a positive effect in reducing MH OOP spending and improving financial protection.

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
	entire calendar year	NR	Comparison: 6.6% **Mean difference: 1.4** **Mean OOP expense as % of total for ambulatory visits for MH** Ambulatory Visits Intervention: 35.4% Comparison: 39.4% **Absolute pct pt change: - 4.0** **Mean OOP expense as % of total prescription drug fills for MH** Ambulatory Visits Intervention: 44.6% Comparison: 45.9% **Absolute pct pt change: -1.3**	
Study: Zuvekas 2005a **Linked studies :** Zuvekas 2002 and 2005b Other pre/post design with concurrent comparison group Claims data Good (1) 1. Description of population and location Funding source not reported	Location not reported Type of legislation/policy: State parity mandate Year policy went into effect: Can't tell (do not know state) Insurance Type: Private insurance Covered conditions: Broad-based mental health conditions Comparison: Multiple states with no parity mandate	4 year period (1 year before and 3 year after) Study groups comparable: Can't tell Study population: Individuals insured through a large employer (intervention) or medium/small employer (comparison)during study period Total: 88,000 Exclusion Criteria: age ≥ 55 during study pre-period	Utilization: Psychotropic prescription medication use per quarter (%) Absolute pct pt difference **Pre/Post difference in the probability of psychotropic prescription medication use per quarter (SE)** Intervention: -0.22 (.03)*; p<0.01 Comparison: -0.10 (.08) **Absolute pct pt difference: -0.12**	**Applicability:** Large employer groups with private insurance. **Conclusions:** The effect of parity mandates on utilization is not clear

<table>
<tr><th>1st Author & Year

Study Design

Data Source

Quality Scoring (Limitations)

Funding Source</th><th>Location

Intervention Description

Comparison</th><th>Study Years

Study Population

Baseline population characteristics</th><th>Results

Outcomes

Effect size metric

Effect estimate (effect estimates used in analysis are in bold)</th><th>Summary

Applicability

Conclusions</th></tr>
<tr><td></td><td></td><td>Population characteristics (intervention):
> Mean Age: 31;
> Female: 51%
> SES: NR
> Race: NR
> Policyholder Type: 52% employees</td><td></td><td></td></tr>
<tr><td>Study: Zuvekas 2002 & 2005b
Linked studies : Zuvekas 2005a

Other pre/post design with concurrent comparison group

Claims data

Zuvekas 2002 – Fair (2)
Description of population
Data analysis -
Cannot control secular trends

Zuvekas 2005b - Good (1)
1. Description of population

Funding source not reported</td><td>Location not reported

Type of legislation/policy: state parity mandate

Year policy went into effect: Can’t tell (do not know state)

Insurance Type: Private insurance

Covered conditions: Broad-based mental health conditions (from Zuvekas 05a</td><td>4 year period (1 year before and 3 year after)

Study groups comparable: Can’t tell

Study population: Individuals insured through a large employer (intervention group) or medium/small employer (comparison group) throughout the four year study period
Total: 88,000

Exclusion Criteria: age ≥ 55 during study pre-period

Population characteristics:
> Mean Age: NR;
> Female: NR
> SES: NR</td><td>Utilization: Treatment prevalence MH/SA (%);
Inpatient MH/SA admissions per 1000;
Mean inpatient length-of-stay MH/SA; Outpatient any use MH/SA (%);Mean number of visits per user MH/SA

Absolute % point change and mean difference

Treatment prevalence MH/SA (%)
<table><tr><th></th><th>Yr 1</th><th>Yr 4</th><th>Abs pct pt change</th></tr><tr><td>Employee and dependents</td><td>5.0</td><td>7.3</td><td>2.3; p<.0.05</td></tr><tr><td>Employees</td><td>5.7</td><td>8.2</td><td>2.5; p<.0.05</td></tr><tr><td>Spouse</td><td>5.4</td><td>7.1</td><td>1.7; p<.0.05</td></tr><tr><td>Non-spousal dependent</td><td>3.7</td><td>6.0</td><td>2.3; p<.0.05</td></tr><tr><td>0-5 yr old dependent</td><td>1.3</td><td>3.4</td><td>2.1; p<.0.05</td></tr><tr><td>6-12 year old dependent</td><td>4.5</td><td>7.3</td><td>2.8; p<.0.05</td></tr><tr><td>13-17 year old dependent</td><td>4.5</td><td>6.7</td><td>2.2; p<.0.05</td></tr><tr><td>18 yrs and older dependent</td><td>4.0</td><td>4.5</td><td>0.5</td></tr></table>
Inpatient MH/SA admissions per 1000
<table><tr><th></th><th>Yr 1</th><th>Yr 4</th><th>Abs pct pt change</th></tr><tr><td>Employee and dependents</td><td>5.6</td><td>5.2</td><td>-0.4</td></tr></table></td><td></td></tr>
</table>

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions
		> Race: NR > Policyholder Type: employees, spousal and non-spousal dependents	Employees 4.3 4.5 **0.2** Spouse 4.9 6.3 **1.4** Non-spousal dependent 7.6 5.9 **-1.7** 0-5 yr old dependent 0.2 0.0 **-0.2** 6-12 year old dependent 5.5 2.1 **-3.4; p<.0.05** 13-17 year old dependent 15.9 12.3 **-3.6** 18 yrs and older dependent 11.9 6.6 **-5.3** **Mean inpatient length-of-stay MH/SA** **Yr 1** **Yr 4** **Mean difference** Employee and dependents 24.9 9.1 **-15.8; p<.0.05** Employees 14.3 7.5 **-6.8 ; p<.0.05** Spouse 12.7 7.3 **-5.4; p<.0.05** Non-spousal dependent 36.2 11.5 **-24.7 ; p<.0.05** 0-5 yr old dependent - - - 6-12 year old dependent 33.7 7.1 **-26.6; p<.0.05** 13-17 year old dependent 42.1 12.7 **-29.4; p<.0.05** 18 yrs and older dependent 22.5 10.7 **-11.8; p<.0.05** **Outpatient any use MH/SA (%)** **Yr 1** **Yr 4** **Abs pct pt change** Employee and dependents 4.7 7.0 **2.3; p<.0.05** Employees 5.5 7.9 **2.4; p<.0.05** Spouse 5.1 6.8 **1.7; p<.0.05** Non-spousal dependent 3.5 5.9 **2.4; p<.0.05** 0-5 yr old dependent 1.3 3.4 **2.1; p<.0.05** 6-12 year old dependent 4.4 7.2 **2.8; p<.0.05** 13-17 year old dependent 4.1 6.5 **2.4; p<.0.05** 18 yrs and older dependent 3.6 4.3 **0.7; p<.0.05** **Mean number of visits per user MH/SA**	

1st Author & Year Study Design Data Source Quality Scoring (Limitations) Funding Source	Location Intervention Description Comparison	Study Years Study Population Baseline population characteristics	Results Outcomes Effect size metric Effect estimate (effect estimates used in analysis are in bold)	Summary Applicability Conclusions

	Yr 1	Yr 4	Mean difference
Employee and dependents	7.4	7.6	**0.2; p<.0.05**
Employees	8.1	8.1	**0.0**
Spouse	5.9	7.8	**1.9**
Non-spousal dependent	6.6	6.5	**-0.1**
0-5 yr old dependent	6.4	4.0	**-2.4; p<.0.05**
6-12 year old dependent	6.2	5.6	**-0.6**
13-17 year old dependent	6.8	7.3	**0.5**
18 yrs and older dependent	7.7	7.8	**0.1**