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# New Jersey's Efforts To Improve Postpartum Depression Care Did Not Change Treatment Patterns For Women On Medicaid

**ABSTRACT** Identification and treatment of postpartum depression are the increasing focus of state and national legislation, including portions of the Affordable Care Act. Some state policies and proposals are modeled directly on programs in New Jersey, the first state to require universal screening for postpartum depression among mothers who recently delivered babies. We examined the impact of these policies on a particularly vulnerable population, Medicaid recipients, and found that neither the required screening nor the educational campaign that preceded it was associated with improved treatment initiation, follow-up, or continued care. We argue that New Jersey's policies, although well intentioned, were predicated on an inadequate base of evidence and that efforts should now be undertaken to build that base. We also argue that to improve detection and treatment, policy makers contemplating or implementing postpartum depression mandates should consider additional measures. These could include requiring mechanisms to monitor and enforce the screening requirement; paying providers to execute screening and follow-up; and preliminary testing of interventions before policy changes are enacted.

**D**epression—an illness characterized by periods of low mood; fatigue; and changes in appetite, body weight, and sleeping patterns—is a leading cause of disability, particularly among women.<sup>1</sup> An estimated 19 percent of new mothers experience depression during the first three months following childbirth.<sup>2</sup> Low-income women enrolled in state Medicaid programs may be at increased risk for developing postpartum depression, which can occur up to a year after giving birth.<sup>3-6</sup>

Screening helps detect postpartum depression, and efficacious treatments such as psychotherapies and antidepressant medications are available.<sup>7-15</sup> Left untreated, postpartum depres-

sion can have severe negative affects on a mother's health and well-being; her relationships with family members; the baby's subsequent cognitive, behavioral, and emotional development; and greater long-term health care and social costs.<sup>16-20</sup> The health effects and potential costs of untreated postpartum depression underscore the need for evidence-based policy.

Recent national and state legislative efforts aim to improve detection of and treatment for postpartum depression. The Patient Protection and Affordable Care Act contained two sections with implications for postpartum depression. The first, section 2713, pertaining to preventive services, requires all new health plans to cover comprehensive women's preventive care, including screening for postpartum depression. The

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second, section 2952, a law previously introduced as the Melanie Blocker Stokes MOTHERS Act, authorizes \$3 million annually to support a national public awareness campaign on postpartum mental health as well as research into maternal mental health, postpartum depression, and the benefits of postpartum depression screening.

The research provides an important opportunity to build on the existing evidence base to inform policy making at the state level, which is already moving forward. As of late December 2010, ten states had active legislation related to postpartum depression; two other states had legislation pending. Key provisions of the MOTHERS Act and the state-level efforts are described in detail in the Appendix.<sup>21</sup>

Portions of both enacted legislation and additional proposals are modeled on seminal efforts by the State of New Jersey. These have unfolded in several stages.

First, the New Jersey Postpartum Wellness Initiative was established in July 2005 by Gov. Richard Codey to raise awareness about postpartum depression and to increase access to appropriate clinical services. This continuing initiative targets health care providers and the public, and it provides information about symptoms, screening, diagnosis, and treatment.<sup>22,23</sup> Outreach to women and their families consists of a toll-free hotline, brochures, and online resources, coupled with state-sponsored television commercials and public service announcements.<sup>24</sup>

During the program's initial scaling up (July 2005–April 2006), the Postpartum Wellness Initiative trained more than 4,500 clinicians to provide screening, referrals, and treatment for postpartum depression. These early efforts reached approximately 58 percent of obstetricians, 13 percent of pediatricians, and up to 12 percent of internal medicine and family practice providers in the state.<sup>23</sup> Targeted trainings continue to take place in hospitals, clinicians' offices, conferences, and continuing medical education programs, with the goal of reaching all clinicians who may be able to identify or treat women who suffer from postpartum depression.<sup>23</sup>

Second, on October 10, 2006, New Jersey became the first state to require postpartum depression screening of women who had recently given birth. The New Jersey Postpartum Depression Act requires that health care professionals educate women and their families about postpartum depression, both before and after delivery.<sup>25</sup> The law also instructs all licensed health care professionals providing postnatal care, including physicians and midwives, to screen

women for symptoms before they are discharged from the hospital and again at "the first few" postpartum follow-up visits.<sup>25</sup>

Although clinicians are charged with screening, there are no specified consequences for failure to do so. Furthermore, the law stipulates no specific mechanisms for monitoring or enforcing compliance among clinicians or for covering the cost of screening services.

The purpose of this study was to measure the effects of New Jersey's outreach and education campaign, as well as its law requiring postpartum depression screening, on postdelivery use of mental health services in a particularly vulnerable group: Medicaid enrollees.

## Study Data And Methods

Levels and trends in postpartum depression treatment were measured over time to identify changes in initiation and continuation of care that were associated with implementation of New Jersey's initiative and legislation. Post-policy outcomes were compared to what would have been expected, given prior trends, in the absence of these policy changes. The study was reviewed and designated as exempt by the Institutional Review Board of the Harvard Pilgrim Health Care Institute.

**DATA** Data for this study came from the administrative database for New Jersey's Medicaid program and included eligibility and enrollment information, as well as claims for doctor visits, procedures, and prescription medications. This data set includes complete service use and prescription data on all Medicaid-financed services. However, there are limitations to administrative data. Information such as symptom severity and personal history of depression (prior to the study period) are not available. Structured clinical interviews or chart reviews are the gold standard for establishing psychiatric diagnoses in study populations; claims data can be less accurate for these purposes.

**STUDY POPULATION** The study population included women who gave birth between July 1, 2004, and October 31, 2007, and met two criteria: the delivery of their babies was covered by New Jersey's Medicaid program, and the mothers had continuous enrollment in Medicaid for at least six months before and one year after delivery. We received data on 103,414 women who had Medicaid coverage at the time of their deliveries. Medicaid coverage for mothers above a specific income threshold (\$23,800 for a family of four in 2007) ends sixty days after delivery, so many women ( $n = 70,415$ ) were excluded from the study based on the continuous Medicaid coverage requirement. This inclusion criterion was

necessary in order to examine care received beyond sixty days after delivery. For this reason, women whose Medicaid eligibility resulted solely from pregnancy were excluded from this analysis.

Although people with bipolar disorder or schizophrenia may also suffer from depressive symptoms, we excluded 841 women who had claims with these diagnoses during the study period because of the different treatment requirements for these illnesses.<sup>26,27</sup> To distinguish new cases of depression from ongoing illnesses, we also excluded 1,193 women who received antidepressant medication during pregnancy or who had prenatal diagnoses of depression or anxiety (anxiety is often a feature of depressive episodes and may be prone to misclassification in claims).<sup>28</sup> The final study population comprised 30,955 women.

**MEASUREMENT OF VARIABLES** Initiation of treatment was defined as having filled a prescription for an antidepressant medication or having had an outpatient mental health visit in the six months following delivery. The first three months after giving birth present the highest risk for developing postpartum depression.<sup>12</sup> However, we measured initiation within a six-month window to allow for potential delays in clinicians' recognition of the symptoms and in patients gaining access to treatment. Depression diagnoses are generally underreported in claims data,<sup>29,30</sup> and diagnosis codes are not required for payment of claims by New Jersey's Medicaid program. Thus, this study did not require a documented diagnosis to indicate treatment initiation.

For those women who initiated treatment, we measured follow-up and continued care. *Follow-up* was defined as either filling a second antidepressant prescription or receiving a second outpatient mental health visit. We defined *continued care* as three or more antidepressant prescriptions or outpatient mental health visits. Both follow-up and continued care were measured within 120 days of treatment initiation (the "acute phase," during which patients have the greatest treatment needs).<sup>31</sup>

We also included measures of age at delivery and race/ethnicity, which were both self-reported, as well as drug dependency, diabetes, preterm delivery, cesarean delivery, and high-risk pregnancy, all based on diagnosis and payment codes.

Additional information on doctor visit, procedure, diagnosis, and medication codes used to identify analytic variables is provided in the Appendix.<sup>21</sup> All variables were assessed between six months before and one year after delivery. We thus were not able to control for preexisting

clinical factors or mental health services use before pregnancy.

**STATISTICAL ANALYSIS** We conducted a population-level analysis to measure changes in the level and trend in monthly rates of treatment initiation associated with the implementation of the Postpartum Wellness Initiative and the Postpartum Depression Act.<sup>32</sup> We then conducted patient-level analyses that allowed us to control for characteristics of individual women by examining the effect of the educational campaign and screening law on the probability of treatment initiation, follow-up, and receipt of continued care. Additionally, we conducted several sensitivity tests, and we found the results of our analyses unchanged by alternative specifications. A complete description of all statistical methods is provided in the Appendix.<sup>21</sup>

## Study Results

Exhibit 1 presents characteristics of women who delivered babies prior to the educational campaign, during the campaign but before implementation of the screening law, and after the implementation of the law. The groups were similar in terms of age at delivery and rates of drug dependency, diabetes, preterm delivery, and high-risk pregnancy. The rate of cesarean delivery increased over time, and the racial composition of the population changed slightly across the three study groups.

Both before and after the policy interventions, fewer than 7 percent of women initiated mental health care in the six months following delivery. Of those who initiated care, about 90 percent used both an antidepressant medication and outpatient mental health services. In all three study groups, about 60 percent of those who initiated care filled at least one additional antidepressant prescription or had one additional outpatient mental health visit during the acute treatment phase, and approximately one-third received continued care beyond that.

Results from the population-level model indicated that neither the Postpartum Wellness Initiative nor the Postpartum Depression Act were associated with any change in the trend of treatment initiation in the six months following delivery (Exhibit 2). Moreover, additional analyses indicated that there were no significant changes in receipt of either follow-up or continued care associated with the policies (results shown in the Appendix).<sup>21</sup>

In the patient-level models (Exhibit 3), neither the initiative nor the law was associated with a change in the odds of initiating treatment. Certain clinical factors were associated with initiating care: Women who had a preterm delivery, a

**EXHIBIT 1**

**Descriptive Statistics For Women In The Study Population Of Mothers Following Childbirth, New Jersey, 2004-07**

	Group 1: pre-policy changes (gave birth before 7/18/05; n=7,679)		Group 2: after initiative, before act (gave birth 7/19/05-10/9/06; n=11,815)		Group 3: after act (gave birth on or after 10/10/06; n=11,461)	
	Number	Mean	Number	Mean	Number	Mean
<b>COVARIATES</b>						
Age at delivery (years)		25.16		25.27		25.56
White	3,124	40.68%	5,041	42.67%	4,836	42.20%
Black	3,699	48.17%	5,103	43.19%	4,614	40.26%
Other race	855	11.13%	1,671	14.14%	2,011	17.55%
Drug dependency diagnosis	443	5.77%	602	5.10%	511	4.46%
Diabetes (diagnosis or medication)	525	6.84%	857	7.25%	788	6.88%
Preterm delivery (< 37 weeks' gestation)	859	11.19%	1,238	10.48%	1,119	9.76%
Cesarean delivery	992	12.92%	2,456	20.79%	3,668	32.00%
High-risk pregnancy diagnosis	2,811	36.61%	4,280	36.23%	4,157	36.27%
<b>OUTCOMES</b>						
Initiation	486	6.33%	708	5.99%	714	6.23%
Of those who initiated care (n = 1,908)						
Any antidepressant <sup>a</sup>	459	94.44%	682	96.33%	683	96.50%
Any mental health outpatient visit <sup>a</sup>	459	94.44%	679	95.90%	679	95.94%
Combination treatment <sup>a</sup>	432	88.89%	653	92.23%	654	92.44%
Follow-up <sup>a</sup>	298	61.32%	446	62.99%	424	59.94%
Continued care <sup>a</sup>	157	32.30%	230	32.49%	236	33.33%

**SOURCE** Authors' analysis. **NOTE** N = 30,955. <sup>a</sup>This study outcome is evaluated within an acute treatment phase of 120 outpatient days following initiation. Initiation is indicated by receipt of an antidepressant medication or depression-related mental health outpatient visit in the six months following delivery. Combination treatment includes both antidepressant medication and outpatient care. Follow-up is indicated by either a second outpatient visit or a second antidepressant medication. Continued care consists of at least three antidepressant prescriptions or three outpatient visits during the acute treatment phase.

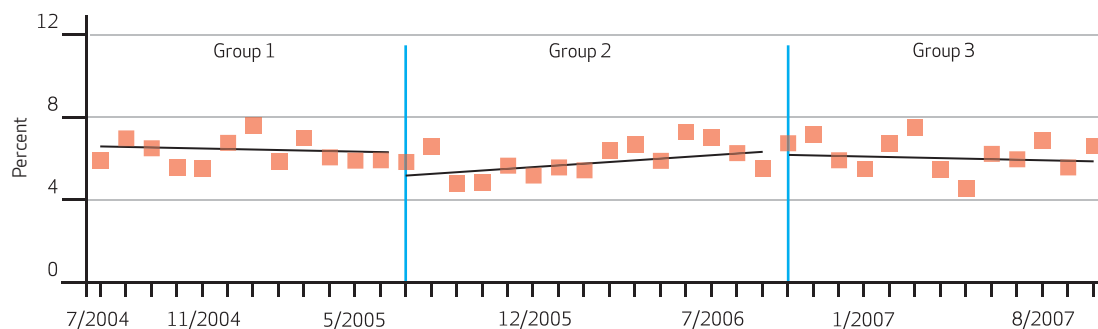
cesarean delivery, a high-risk pregnancy, diabetes, or a substance use disorder had higher odds of treatment initiation. Also, compared to whites, blacks and other nonwhites had lower odds of treatment initiation. For those who initiated treatment in the six months following delivery, neither the campaign nor the law significantly affected the odds of receiving follow-up or continued care (Exhibit 3).

**Discussion**

**LACK OF POLICY IMPACTS** Our findings indicate that New Jersey's policies to improve the detection and treatment of postpartum depression, which have been used as models for state and national legislative efforts, were not effective in a particularly vulnerable group of mothers: Medicaid recipients. Because our study was limited to Medicaid enrollees in only one state, they might

**EXHIBIT 2**

**Trend Over Time In The Percentage Of Women Who Initiate Treatment In The Six Months After Delivery, New Jersey, 2004-07**



**SOURCE** Authors' analysis. **NOTES** N = 30,955. Groups and time frames are in Exhibit 1. Treatment initiation is indicated by receipt of an antidepressant medication or mental health outpatient visit in the six months following delivery.

**EXHIBIT 3**

**Odds Ratios From Controlled Logistic Regression Models For Postpartum Depression Treatment Initiation, Follow-Up, And Continued Care, New Jersey, 2004-07**

	Initiation	Conditional on initiation of treatment within six months of delivery (n=1,908)	
		Follow-up	Continued care
Change at the time of the Postpartum Wellness Initiative	0.99	0.89	0.76
Monthly post-initiative trend	1.01	0.98	0.99
Change at the time of the Postpartum Depression Act	0.99	0.98	0.78
Monthly post-act trend	1.00	0.97	0.98
Age at delivery	1.01*	1.01	1.01
Black (vs. white)	0.43****	0.68****	0.85
Other race (vs. white)	0.55****	0.75*	0.74*
Drug dependence	4.23****	2.51****	2.83****
High-risk pregnancy	1.11**	0.87	1.11
Cesarean delivery	1.24****	0.93	1.07
Preterm delivery	1.28****	0.89	0.95
Diabetes	1.29***	0.86	0.75

**SOURCE** Authors' analysis. **NOTES** N = 30,955. Cell entries are odds ratios. All models also include an intercept term and control for county of delivery and for preexisting levels and trends in study outcomes. Initiation is indicated by receipt of an antidepressant medication or depression-related mental health outpatient visit in the six months following delivery. Follow-up and continued care are evaluated within an acute treatment phase of 120 days following initiation. Follow-up is indicated by either a second outpatient visit or a second antidepressant medication. Continued care consists of at least three antidepressant prescriptions or three outpatient visits during the acute treatment phase. \*p < 0.10 \*\*p < 0.05 \*\*\*p < 0.01 \*\*\*\*p < 0.001

not be generalizable to other populations or across policies with different features. Nevertheless, they indicate a worrying lack of effect, and they raise potential issues that policy makers elsewhere should consider when forging and enacting their own measures.

Among the continuously enrolled Medicaid recipients in this study, rates of treatment initiation for postpartum depression fell well below prevalence rates reported in clinical studies (10–24 percent).<sup>2,33</sup> These rates did not change after implementation of the education and outreach initiative, or after the enactment of legislation requiring universal screening for postpartum depression. Furthermore, among those who initiated care after delivery, there were no policy-associated changes in receipt of follow-up or continued care.

There are several potential explanations for our findings. First and foremost, both clinical and policy evidence are critical inputs to effective policy making, and New Jersey had a limited policy research base to guide its decision making. The Postpartum Wellness Initiative and Postpartum Depression Act were consistent with available clinical research indicating that postpartum depression screening improves detection and treatment.<sup>13,14</sup> However, implementation and operational research that might have alerted policy makers to potential obstacles or facilitating factors was lacking, because no other state had ever attempted universal screening. Moreover, statewide action was taken without

undertaking demonstration projects that could have provided early evidence of challenges to successful policy implementation.

Second, to the extent that relevant data existed for our use, they were not always compatible enough with the policies we studied to answer important questions. The current study examined postpartum depression treatment patterns but could not determine whether the campaign or the law had an impact on screening rates for postpartum depression, as policy makers intended. New Jersey's Medicaid program does not make specific payments for postpartum depression screening. Thus, no direct measure of screening was available in the payment claims data used for this analysis. Instead, we used available data for postpartum depression treatment as a proximal measure for the law's focus on screening. Nor could the study identify system, provider, or patient factors—some of which are discussed below—that might have influenced the lack of intended policy impact among Medicaid recipients.

Nevertheless, the literature provides insights into potential barriers that were encountered and that therefore should be considered when states are crafting new legislation or deciding how to best implement existing policy.

► **HEALTH SYSTEM AND PROVIDER FACTORS:** Health care delivery systems, as well as clinicians' knowledge and experience, may influence the patterns of screening and treatment for postpartum depression.<sup>10,34</sup> Quality improvement in

depression care has often required sizable investment of resources as well as direct incentives for change for both clinicians and patients.<sup>26,35,36</sup>

The Postpartum Wellness Initiative and the Postpartum Depression Act provided funding for outreach and education to health care providers and the general public. However, these policy measures did not include specific payments for the provision of screening services, nor did they specify mechanisms for compliance monitoring or enforcement. It may be unrealistic to expect time-constrained clinicians to provide an additional service without financial compensation or incentive. Moreover, without monitoring, it is impossible to ascertain whether screening patterns changed. Additional system- and provider-level factors may have influenced treatment patterns among continuously enrolled Medicaid recipients, including low Medicaid reimbursement rates and payment delays.<sup>37,38</sup>

► **PATIENT-LEVEL FACTORS:** For new mothers, both stigma and logistical challenges such as insurance coverage, time constraints, child care arrangements, and transportation may present barriers to obtaining mental health care after childbirth.<sup>34,39</sup> However, the full range of reasons underlying low rates of mental health treatment among new mothers who suffer from depression remains poorly understood.<sup>40</sup> The Postpartum Wellness Initiative and Postpartum Depression Act focused on raising awareness and reducing stigma, but not on patient-oriented incentives that may help overcome known barriers.<sup>41</sup>

Also, both policies were statewide efforts aimed at the general population, not specifically targeted at mothers insured by the state's Medicaid program. For women with low incomes, competing demands; high stress levels; and limited financial, social, and emotional support may be barriers to seeking care.<sup>41,42</sup> These potential barriers were not explicitly addressed by New Jersey's efforts, and they remain largely unaddressed in other enacted and pending legislation (see Appendix Exhibit 1).<sup>21</sup>

**IMPROVING THE POLICY STRATEGY** To strengthen the policy response to postpartum mental illness, legislative provisions must be consistent with available evidence. Before enacting new policy or refining existing policy, it is necessary to build upon the evidence base, with rigorous research, demonstration projects, and data collection requirements for monitoring and evaluation purposes.<sup>43,44</sup>

Policy to improve postpartum depression care must account for known challenges and barriers. When developing postpartum depression-related policies, policy makers should consider three key issues that address health systems and provider factors: challenges in ensuring continu-

ity of care during pregnancy, delivery, and the postpartum period; the variety of clinicians who interact with women during this time (such as obstetricians, midwives, primary care providers, and pediatricians); and the lack of integration of mental health services and support into prenatal, postpartum, and pediatric care.

For example, consideration could be given to alternative prenatal and postpartum care delivery models, such as the use of home visits, which has effectively improved postpartum depression detection in the United Kingdom.<sup>45,46</sup> Special attention should be given to prenatal care visits as an opportunity to screen for depression during pregnancy, which is a risk factor for postpartum depression.<sup>47,48</sup> Additionally, patient provisions such as child care, transportation, and culturally competent outreach services, which have proven effective in previous research, may be helpful for improving treatment patterns, especially among diverse low-income women.<sup>41</sup>

Implementation of the MOTHERS Act and the broader Affordable Care Act will provide opportunities to build on existing knowledge at the federal and state levels, by conducting research into new community, clinical, and policy efforts to address maternal mental health—for example, insurance coverage of postpartum depression screening.

The same opportunities may also be used to study and evaluate innovative state-level strategies. Among these are provisions in existing state-level legislation that address factors that we note may have impeded success in New Jersey: Medicaid reimbursement for postpartum depression screening and integration of screening requirements into Medicaid managed care contracts in Illinois (the Perinatal Mood Disorders and Prevention Act); and a multistakeholder advisory commission to formulate screening guidelines and data collection requirements in Massachusetts (Chapter 313, An Act Relative to Postpartum Depression).

## Conclusions

The State of New Jersey enacted unprecedented legislation to support patient education and clinician-led universal screening for postpartum depression. It made a substantial financial investment in raising awareness about and training for recognition and care of postpartum depression. Although laudable in intent, these efforts had no measurable effect on the initiation of mental health treatment after childbirth or on the receipt of follow-up or continued care, among continuously enrolled Medicaid recipients.

Given heightened interest in addressing post-

partum depression at both the state and national levels, it is important to recognize that education, outreach, and screening requirements—absent monitoring, enforcement, and coverage provisions—may not suffice to improve detection and treatment among Medicaid enrollees. Additional provider- or patient-level factors may need to be considered in order to achieve desired outcomes. The health risks and potential financial waste of policies that are not sufficiently evidence based should be avoided. Any new pol-

icy strategy to address the negative effects of postpartum depression should be premised upon a sound research base, then rigorously and comprehensively studied in order to ensure effectiveness.<sup>44</sup>

Improving detection and treatment of postpartum depression is a worthy goal. New Jersey's recent experience provides important insights that can help inform the implementation of existing legislation and the development of future policies. ■

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## ABOUT THE AUTHORS: KATY BACKES KOZHIMANNIL, ALYCE S. ADAMS, STEPHEN B. SOUMERAI, ALISA B. BUSCH & HAIDEN A. HUSKAMP



**Katy Backes Kozhimannil** is an assistant professor at the University of Minnesota School of Public Health.

In the context of a growing national focus on postpartum depression, Katy Backes Kozhimannil and colleagues examined the affect of groundbreaking efforts in New Jersey to increase detection and treatment. They found that both a state-led initiative to encourage awareness among clinicians and separate state legislation requiring screening yielded no evidence of improved screening and treatment among women on Medicaid.

“Clearly, tremendous effort on the part of legislators and administrators went into the initiatives we studied,” Kozhimannil says, “so our failure to detect improvements was certainly disappointing.” Yet she finds this result “not shocking,” given the complexities of improving care among low-income women. The researchers argue nonetheless that much can and should be done to increase the likelihood that future interventions will make a difference in raising screening and treatment rates.

Kozhimannil is an assistant professor in the Division of Health Policy and Management at the University of Minnesota School of Public Health. She holds a doctorate in health policy from Harvard University and a master’s degree in public affairs from Princeton University. Her research focuses on women’s health, quality of care, and evaluation of program and policy impacts on health outcomes.



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Stephen Soumerai is a professor in the Department of Population Medicine at Harvard Medical School and the Harvard Pilgrim Health Care Institute, where he directs the Drug Policy Research Group. He is a frequent adviser to Congress, state legislatures, and federal and international agencies. His research has informed expanded access to medications under Medicaid and Medicare. He earned a doctorate in health services administration at the Harvard School of Public Health.



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Alisa Busch is a psychiatrist and an assistant professor of psychiatry and of health care policy at Harvard Medical School and director of Integration of Clinical Measurement and Health Services Research at McLean Hospital. Busch earned her medical degree at the Johns Hopkins University and a master’s degree in health policy and management at the Harvard School of Public Health. Her research focuses on measuring and improving mental health treatment quality at the system level.



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