



U.S. Department of Health and Human Services  
Assistant Secretary for Planning and Evaluation  
Office of Disability, Aging and Long-Term Care Policy

# **EVALUATION OF THE SAMHSA PRIMARY AND BEHAVIORAL HEALTH CARE INTEGRATION (PBHCI) GRANT PROGRAM: FINAL REPORT**

December 2013

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## PREFACE

The Substance Abuse and Mental Health Services Administration's (SAMHSA's) Primary and Behavioral Health Care Integration (PBHCI) grants program is intended to improve the overall wellness and physical health status of people with serious mental illness (SMI), including individuals with co-occurring substance use disorders (SUDs), by making available an array of coordinated primary care (PC) services in community mental health and other community-based behavioral health (BH) settings. In September 2009, SAMHSA partnered with the Office of the Assistant Secretary for Planning and Evaluation (ASPE) to oversee a one-year contract with the RAND Corporation to design an evaluation of the PBHCI grants program. In September 2010, SAMHSA and ASPE entered into a new, three-year contract with the RAND Corporation to execute the evaluation that RAND designed. This is the final report from RAND's evaluation of the PBHCI grants program.

The RAND evaluation of the PBHCI grants program had three main components, each designed to answer one of three research questions:

- **Research Question 1 (Process Evaluation):** Is it possible to integrate the services provided by PC providers and community-based BH agencies (i.e., what are the different structural and clinical approaches to integration being implemented)?
- **Research Question 2 (Outcomes Evaluation):** Does the integration of primary and BH care lead to improvements in the mental and physical health of the population with SMI and/or SUDs served by these models?
- **Research Question 3 (Model Features Evaluation):** Which models and/or model features of integrated primary and BH care lead to better mental and physical health outcomes?

To address these questions, RAND conducted a program-wide process evaluation that assesses PBHCI program structures, procedures, consumers, and their care needs and service utilization (Research Question 1); a small, comparative effectiveness study testing the physical health and BH outcomes of consumers served in PBHCI clinics (Research Question 2); and analysis designed to link PBHCI program features to consumer outcomes (Research Question 3). RAND discusses implications of the study results for programs and the broader field. RAND also provides options for future PBHCI-related research.

This report will be of interest to national and state policymakers, health care organizations and clinical practitioners, patient advocacy organizations, health

researchers, and others responsible for ensuring that individuals with SMI receive appropriate preventive and primary health care services.

RAND's evaluation of the PBHCI grants program was sponsored by SAMHSA and ASPE contract No. OS-42345. Trina Dutta (SAMHSA), and David DeVoursney (ASPE) were the project officers. The research was conducted in RAND Health, a division of the RAND Corporation. A profile of RAND Health, abstracts of its publications, and ordering information can be found at <http://www.rand.org/health>.

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## ACRONYMS

The following acronyms are mentioned in this report and/or appendix.

A1c	Glycated Hemoglobin
AHRQ	HHS Agency for Healthcare Research and Quality
ASPE	HHS Office of the Assistant Secretary for Planning and Evaluation
ATP	Adult Treatment Panel
BH	Behavioral Health
BL	Baseline
BMI	Body Mass Index
BP	Blood Pressure
CCM	Chronic Care Model
CDC	HHS Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHD	Coronary Heart Disease
CI	Confidence Interval
CIHS	HRSA Center for Integrated Health Solutions
CLIA	Clinical Laboratory Improvement Amendments
CM	Centimetre
CMHS	SAMHSA Center for Mental Health Services
CMS	HHS Centers for Medicare and Medicaid Services
CO	Carbon Monoxide
CQI	Continuous Quality Improvement
DBP	Diastolic Blood Pressure
dL	Deciliter
EBP	Evidence-Based Practice
EHR	Electronic Health Record
FPG	Fasting Plasma Glucose
FQHC	Federally Qualified Health Center
FTE	Full-Time Equivalent
FU	Follow-up
GAF	Global Assessment of Functioning
GED	General Educational Development
GPRA	Government and Performance Results Act

HDL	High-Density Lipoprotein
HDL-C	High-Density Lipoprotein Cholesterol
Hg	Hectogram
HHS	U.S. Department of Health and Human Services
HIT	Health Information Technology
HRSA	HHS Health Resources and Services Administration
ICSI	Institute for Clinical Systems Improvement
IOM	Institute of Medicine
kg	kilogram
LDL	Low-Density Lipoprotein
LDL-C	Low-Density Lipoprotein Cholesterol
LPN	Licensed Nurse Practitioner
mg	Milligram
mm	Millimetre
MOA	Memorandum of Agreement
NCQA	National Committee for Quality Assurance
NHLBI	NIH National Heart, Lung, and Blood Institute
NIH	HHS National Institutes of Health
NOM	National Outcome Measure
NP	Nurse Practitioner
OHD	Onsite Health Diagnostics
OMB	U.S. Office of Management and Budget
PA	Physician Assistant
PART	Program Analysis Review Tool
PBHCI	Primary and Behavioral Health Care Integration
PC	Primary Care
PCMH	Patient-Centered Medical Home
PCPI	Physician Consortium for Performance Improvement
PPM	Parts Per Million
RFA	Request for Applications
RN	Registered Nurse
SAMHSA	HHS Substance Abuse and Mental Health Services
SBP	Systolic Blood Pressure
SMI	Serious Mental Illness
Smok	Self-Reported Smoking Status
STD	Standard
SUD	Substance Use Disorder

TC	Total Cholesterol
TRAC	Transformation Accountability
Trig	Triglycerides
WC	Waist Circumference

## EXECUTIVE SUMMARY

This report describes the RAND Corporation's evaluation of the Substance Abuse and Mental Health Services Administration's (SAMHSA's) Primary and Behavioral Health Care Integration (PBHCI) grants program. The PBHCI grants were designed to improve the overall wellness and physical health status of people with serious mental illness (SMI) and/or co-occurring substance use disorders (SUDs) by supporting the integration of primary care (PC) and preventive physical health services into community behavioral health (BH) centers where individuals already receive care. This evaluation provides information about the grantees' implementation of PBHCI, consumer outcomes, and PBHCI program features associated with consumer-level processes and outcomes of care. It also includes implications for programs and the broader field, plus suggestions for future evaluation that may strengthen ongoing and future implementation of PBHCI.

### Background

Excess morbidity and mortality in persons with SMI is a public health crisis. Compared with people without mental illness, individuals with SMI (e.g., schizophrenia, other psychoses, bipolar disorder, and severe depression) have higher rates of chronic medical conditions, including hypertension, diabetes, obesity, cardiovascular disease, and HIV/AIDS; higher frequency of multiple general medical conditions; and more than twice the rate of premature death resulting from these conditions (Kelly, Boggs, and Conley, 2007; Mauer, 2006; Parks et al., 2006; Sokal et al., 2004; Saha, Chant, and McGrath, 2007; Laursen et al., 2013).

Numerous factors contribute to the excess burden of general medical conditions among persons with SMI, including low levels of self-care, medication side effects, substance abuse comorbidity, unhealthy lifestyles, and socioeconomic disadvantage (Burnam and Watkins, 2006; CDC, 2012; Druss, 2007). The organizational and financial separation of the behavioral and general health care sectors contributes to disparities in access to and the quality of general medical care for people with SMI (Alakeson, Frank, and Katz, 2010; Bao, Casalino, and Pincus, 2013; Druss, 2007; Horvitz-Lennon, Kilbourne, and Pincus, 2006).

SAMHSA's PBHCI service grant program is intended to improve the health status among adults with SMI and/or co-occurring SUDs by making available an array of coordinated PC services in community mental health centers and other community-based BH settings. The PBHCI grantees evaluated in this report received \$500,000 per year to coordinate access to PC and/or services for which there was no funding source, including four core (required) program features:



1. screening/referral for needed physical health prevention and treatment;
2. developing a registry/tracking system for physical health needs/outcomes;
3. care management;
4. prevention and wellness support services.

Grantees could also implement six optional program features (same day physical and BH visits; co-located, routine PC services; a supervising PC physician; an embedded nurse care manager; evidence-based practices for preventive care; and wellness programs), infrastructure development, and performance measurement activities.

In 2009-2010, RAND designed the PBHCI evaluation around a structure-process-outcomes framework (Donabedian, 1966, 1980). The evaluation had three evaluation components, each designed to answer one of three research questions:

- **Research Question 1 (Process Evaluation):** Is it possible to integrate the services provided by PC providers and community-based BH agencies (i.e., what are the different structural and clinical approaches to integration being implemented)?
- **Research Question 2 (Outcomes Evaluation):** Does the integration of primary and BH care lead to improvements in the mental and physical health of the population with SMI and/or SUDs served by these models?
- **Research Question 3 (Model Features Evaluation):** Which models and/or model features of integrated primary and BH care lead to better mental and physical health outcomes?

RAND then won a separate three-year contract to conduct this evaluation work (2010-2013). The results of this PBHCI evaluation are described below.

## Results

### ***Research Question 1 (Process Evaluation)***

To answer this descriptive, process-oriented question, we measured the extent to which key integration features and strategies were present at each grantee site (program and staff-level analyses) and the degree to which individuals with SMI received appropriate integrated services (consumer-level analysis). Data showed that PBHCI programs had multidisciplinary teams with different staff mixes, and that they had different infrastructures and offered different packages of services. Programs also varied in the extent to which their structures and procedures reflected integrated care, with programs offering variable levels of co-located services, structures, and systems shared by primary and BH care providers, integrated practices, and clinic cultures.

PBHCI programs also served a diverse population of consumers with high rates of need for integrated primary and BH care services. Once enrolled in PBHCI, most consumers had some primary and BH care contact during their first year in the program, and more than half accessed a basic package of integrated services, including screening or treatment planning, PC, and case management; consumers were less likely to have accessed substance abuse-related services and wellness services targeting smoking and weight. Improving consumer access to the full array of PBHCI services, particularly among consumers with identified physical health needs, could be a target for future improvements to PBHCI.

### ***Research Question 2 (Outcomes Evaluation)***

We conducted a small, comparative effectiveness study consisting of three matched PBHCI and control clinic pairs. Results of a difference-in-difference analysis showed that, relative to consumers receiving services at control clinics, PBHCI consumers showed improvements in some (diastolic blood pressure, total cholesterol, LDL cholesterol and fasting plasma glucose) but not all (systolic blood pressure, body mass index, HDL cholesterol, glycated hemoglobin, triglycerides, self-reported smoking) of the physical health indicators examined. Compared with consumers served at control-sites, consumers served through PBHCI showed no benefit in terms of indicators of BH.

### ***Research Question 3 (Model Features Evaluation)***

Instead of implementing different integrated care models in their entirety (e.g., Cherokee model, Chronic Care Model), our initial work showed that many programs implemented “bits and pieces” or combinations of several integration models (Scharf et al., 2013). As such, our approach to Research Question 3 focused on model features whose presence or absence could be reliably assessed. To answer Research Question 3, we used the full sample of 56 grantee data to first identify program-level predictors of consumer access to PC providers and packages of integrated care. Then we used data from the three intervention sites included in the comparative effectiveness evaluation (Research Question 1) to test the relationship between consumer access to primary, integrated care and consumer physical health outcomes. Overall, results showed that several program features had an effect on consumer access to integrated care (e.g., the number of days a PC clinic was open per week, regularly scheduled integrated staff meetings, and other aspects of program-level integration increased access; rural location decreased access), but consumer access to PC and integrated care was not clearly associated with physical health outcomes.

## Conclusions

PBHCI programs were successful in several ways, such as building integrated, multidisciplinary teams that offer an array of integrated primary, BH, and wellness services, and across PBHCI grantee programs, these services were provided to a diverse clientele with high rates of need for integrated care. PBHCI programs also experienced several challenges, including lower-than-expected rates of consumer enrollment, financial sustainability, intra-team communication, and creating an integrated clinic culture. These programs also experienced challenges related to implementing wellness programs and improving consumer smoking and weight outcomes. Ongoing and future cohorts of grantees could consider several options to improve program implementation, such as maximizing data-driven, continuous quality improvement; monitoring implementation fidelity to evidence-based wellness programs; and investing in strategies that improve consumer access to integrated services, among others. Stakeholders in the field of integrated care could benefit from consensus around program performance expectations, and the establishment of national quality indicators for integrated care accountability and core performance monitoring requirements. Finally, technical assistance providers could consider continuing dissemination of emerging best care practices for adults with SMI and supporting grantees navigating concurrent health care reforms. Future evaluations, such as an evaluation of PBHCI utilization and costs, strategies to improve sustainability, and a prospective trial of alternative models of integrated care could help SAMHSA and grantees demonstrate the value of their PBHCI work.