



EXECUTIVE SUMMARY

Evolving Models of Behavioral Health Integration: Evidence Update 2010-2015

by Martha Gerrity, MD, MPH, PhD

May 2016

Six years ago, the Milbank Memorial Fund published a [report](#), “Evolving Models of Behavioral Health Integration in Primary Care,”¹ that quickly became widely cited and one of the Fund’s most popular publications. Since 2010, the field of behavioral health integration (BHI) has advanced conceptually, and there has been a proliferation of research. Policy-makers continue to be interested in the topic and struggle with how to best deliver care and support recovery for people with mental illness or substance use disorders.

Policymakers are focusing on this population because it has its own set of challenges. Mental illness and substance use disorders are common, affect people of all ages, and may result in substantial disability. Depression alone will be one of the three leading causes of disability in the developed world by 2030,² and approximately 8 million deaths each year are attributable to mental illness.³ Individuals with mental health and substance use disorders are often underdiagnosed and undertreated in primary care settings.⁴⁻⁷ Similarly, those with mental illness and substance use disorders lack adequate general medical care.⁸⁻¹¹

For decades, policymakers and providers have seen worse health outcomes for people with behavioral health disorders compared to those without them. Some of the reasons for this include the lack of understanding of the relationship between mental and physical disorders and siloed behavioral and physical health care systems.¹² For some people, the symptoms of their mental disorders, such as depression or anxiety, makes it a real challenge to engage in the health care system. For others, stigma associated with severe mental illness or lack of behavioral health staff in primary care offices makes it a challenge to find a primary care home where they feel they can fit in. For some people with severe mental illness or substance use disorders, their lives may be too chaotic or disorganized to access the care they need.

People with mental disorders have high rates of adverse health behaviors, including tobacco and other substance use, physical inactivity, and poor diet.¹³ Unhealthy behaviors contribute to high rates of chronic medical conditions and substantial reductions in life expectancy. Like everyone else, people with mental disorders need preventive services such as immunizations, cancer screenings, and tobacco cessation counseling.¹³ If they have a chronic medical condition, they need coordinated management of the condition.¹⁴ However, people with mental disorders often do not receive these preventive services and often have a lower quality of care for their medical conditions.⁹ They die early—not from their behavioral health disorder—but because of chronic medical conditions, infections, or suicide.

With advances in understanding behavioral health disorders, there are now more opportunities to diagnose and effectively treat these conditions, recognize the relationship between physical and mental health, spend health care dollars more efficiently, and help people avoid the consequences of homelessness, broken families, and criminal justice system involvement that might affect those with behavioral health disorders.

In response to this critical need to improve care for people with behavioral health disorders,

many have called for the integration of behavioral health, including both mental health and chemical dependency treatment, and primary medical care.^{9,15} In a patient-centered approach, behavioral health integration addresses all the health needs of a patient no matter where they receive care.

Over the past 20 years, research on BHI has grown rapidly. Initiatives at the federal, state, and local levels encouraged research and efforts to integrate behavioral health and primary care services.¹⁶ The focus of these efforts was primarily on integrating mental health into primary care services and less on integrating primary care into mental health services or mental health and chemical dependency services.^{1,16,17} Interest in integrating primary care services into mental health services is growing, recognizing that there should be no wrong door for people with more serious behavioral health disorders who may feel more comfortable with their mental health center as their health home.

The Fund's 2010 report was very useful at that time. It described the potential benefits of behavioral health/primary care integration, identified eight BHI models and provided additional resources to assist policymakers interested in pursuing BHI. The report provided a brief analysis of the evidence base for each BHI model and referred readers to the federal Agency for Healthcare Research and Quality's (AHRQ's) 2008 review of randomized controlled trial studies of integrated care for further information.⁷

Aim

Since the 2010 report was published, federal agencies have funded new research on behavioral health integration care models and convened experts to standardize terms and models describing BHI. The aim of this report is to assist policymakers and health care planners to understand and pursue BHI by:

1. Providing an updated scan of the literature over a five-year period (2010 to 2015) to identify changes and gaps in the evidence regarding BHI since publication of the 2010 report; and
2. Identifying resources to assist policymakers and health care planners in selecting, implementing, and sustaining BHI models appropriate for their populations and settings.

This report does not provide a detailed analysis of either the research or implementation models. Detailed analyses can be found through many of the resources noted in this report.

Methods

Since 2010, there has been rapid growth in studies of BHI models across mental health conditions and care settings. We used a broad search strategy to cover all mental health and substance use disorders and care settings. We searched databases of systematic reviews, PubMed, and pertinent websites focusing on BHI. The evidence review included only systematic reviews, technology assessments, and randomized controlled trials, because these types of studies are more likely to yield good-quality evidence that is at lower risk of bias.¹⁸⁻²⁰ The purpose of this report is to provide a scan of the research, so we did not assess the quality of individual studies, and the report does not include a detailed analysis of study results. Instead, the report highlights areas where new evidence is emerging and additional work may be needed.

Findings

Since publication of the Milbank Memorial Fund report in 2010, the field of BHI has advanced conceptually and has experienced a proliferation of research. Overall, evidence for BHI, and specifically the collaborative care management (CCM) model, is even stronger than in 2010, and new findings are emerging regarding components of the CCM model associated with improved outcomes and strategies for addressing comorbid mental and medical disorders.

Specific findings from the literature scan are organized into three areas: research findings, conceptual frameworks and lexicon, and implementation issues.

Research Findings

Key Findings—Research

Overall, evidence for BHI, and specifically the CCM model, is even stronger than in 2010. New findings are emerging regarding components of CCM associated with improved outcomes and strategies for addressing comorbid mental and medical disorders.

- The predominant model for BHI is the CCM model, where care or case managers systematically link patients with mental health and primary care providers.
- High-quality evidence from more than 90 studies involving over 25,000 individuals support that the CCM model improves symptoms from mood disorders and mental health-related quality of life.
- CCM components that appear to be most strongly associated with improved patient outcomes are well-trained and supported care managers who provide systematic monitoring and follow-up of patients, communicate with providers, and in some studies provide psychological interventions.

The literature search for this report identified 140 studies meeting inclusion criteria. These studies revealed several important research findings and gaps:

- The vast majority of research involves interventions that enhance coordination and collaboration and focuses mostly on mood disorders and integration in primary care settings.^{16,21}
- CCM, the predominate model used in these studies, is a multicomponent model that systematically links patients with mental health and primary care providers in a joint management effort. This joint effort is coordinated by a care or case manager.²²
- Based on high-quality evidence (more than 90 randomized trials involving over 25,000 individuals), CCM results in small to moderate improvements in symptoms from mood disorders and mental health-related quality of life.^{16,21}
- CCM improves mental health outcomes across a wide range of patient subgroups (e.g., ethnic minorities) and care settings, including mental health practices and rural areas.^{23,24}
- CCM improves mental health outcomes for patients with chronic medical conditions (e.g., chronic pain, diabetes, cardiovascular risk) and may improve medical outcomes, especially if care managers also address the medical conditions.^{25,26} Research involving patients with diabetes has the strongest evidence base and generally demonstrates improvement in hemoglobin A1C.
- The key components of CCM interventions associated with positive patient outcomes are:^{16,23,27-29}
 - o Care or case managers who provide systematic patient follow-up using standardized symptom measures, monitor treatment adherence, communicate with providers, and, in some models, provide psychological interventions;
 - o Training and regular supervision and support of care managers by mental health providers to ensure that individuals progress in their treatment and recovery; and
 - o Active follow-up for at least 16 weeks.
- Studies that did not find improved patient outcomes were generally in settings without additional personnel, training, and oversight provided in the original studies of CCM or had small sample sizes.
- Other promising findings emerging from the research literature include:
 - o Use of CCM for children and adolescents with depression, attention deficit hyperactivity disorder, and serious emotional disturbance;³⁰⁻³⁴
 - o Use of CCM for individuals with serious mental illness;²⁴

- o Colocated integrated care for individuals with serious mental illness and chemical dependency who have medical conditions;³⁵ and
- o Possible cost-effectiveness of CCM compared to usual care.¹⁶

In emerging areas of research where there are fewer studies, the overall quality of evidence is low. This means there is greater uncertainty in the findings that these models improve mental and/or physical health outcomes for the targeted groups. However, given the pressing challenges to improve care and outcomes for children and for people with severe behavioral health disorders, policymakers can consider piloting these interventions and evaluating their impact to ensure they result in similar outcomes described in research studies.

Several research gaps exist. Only a few studies describe integration of primary care into mental health and chemical dependency treatment settings, and very few studies look at the integration of mental health and chemical dependency services. Moreover, few studies examine colocation of providers and fully integrated care for individuals with serious mental illness or chemical dependency, making it difficult to draw firm conclusions about the impact of these models of care on mental health and medical outcomes. In 2014, the Milbank Memorial Fund commissioned and published on its website a detailed [review](#) of studies focusing on BHI for individuals with serious mental illness and substance use disorders, including colocation of care. This study is titled *Integrating Primary Care into Behavioral Health Settings: What Works for Individuals with Serious Mental Illness*.³⁵

Terminology and Conceptual Frameworks

Key Findings—Terminology and Conceptual Frameworks

We now have more defined and common language, as well as a clearer idea of the key components of the models that drive improved patient health outcomes.

- Models that integrate mental health and medical care systematically connect mental health and primary care providers to improve their communication and coordination to meet all of the patient's health needs, no matter where they seek care.
- The AHRQ developed a lexicon, practice parameters, and quality metrics to assist policymakers and health care planners in setting standards and contracting for BHI services.
- An expert panel of the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Health Resources and Services Administration (HRSA) developed a conceptual framework defining six levels of collaboration spanning three practice structures (coordinated care, colocated care, and integrated care). Behavioral health integration models can be placed on this six-level continuum of collaboration based on their practice structure and strategies used to enhance coordination and collaboration.

Another change in the field since 2010 is recognition of the need to create a common language and understanding of BHI models. To that end, the AHRQ developed a lexicon, practice parameters, and quality metrics to assist policymakers and health care planners in setting standards and contracting for BHI services.^{36,37} In addition, a SAMHSA-HRSA expert panel developed a conceptual framework defining six levels of collaboration spanning three practice structures (coordinated care, colocated care, and integrated care).³⁸ Behavioral health integration models can be placed on this six-level continuum of collaboration based on their practice structure and strategies used to enhance coordination and collaboration. These tools can be used in conjunction with the SAMHSA-HRSA Four Quadrant Clinical Integration Model^{39,40} to better match the needs of patient populations with an appropriate integration model. The SAMSHA-HRSA framework for levels of integrated health care also provided a structure for organizing the BHI models (enhanced coordination versus colocation and integration) used in the research studies included in this report.

Implementation

Key Findings—Implementation

The issues facing policymakers looking to implement BHI have changed. The question policymakers now face is not *whether* to promote BHI, but how to provide the infrastructure and funding needed to implement, ensure fidelity, and sustain the model.

There are now resources available to policymakers to answer these key implementation questions.

- The Institute for Clinical and Economic Review (ICER) organized an extensive list of resources for implementing BHI models in action guides for [California](#) and [New England](#). These guides provide resources for policymakers and others to embark on or improve efforts to integrate care.
- The University of Washington [Advancing Integrated Mental Health Solutions Center](#) has extensive resources to support CCM implementation, including an implementation guide.

CCM is a multicomponent model that requires change in practice structures and relationships. It is challenging to implement and sustain. For policymakers and health care planners, as well as researchers, the focus has shifted from questions about whether these models work to questions about how to implement and sustain the models. The questions include:

- Identifying key components of complex interventions;
- Maintaining fidelity to the intervention;
- Appropriate patient selection;
- Providing sustainable financing; and
- Removing barriers by modifying rules and regulations.

Fortunately, many organizations have developed resources for implementing and sustaining CCM models. ICER organized an extensive list of resources for implementing BHI models in action guides it developed for the [California Technology Assessment Forum](#) and [New England Comparative Effectiveness Public Advisory Council](#). These guides provide resources for policymakers and others to embark on or improve efforts to integrate care. The University of Washington [Advancing Integrated Mental Health Solutions \(AIMS\) Center](#) also has produced extensive resources to support CCM implementation, including an implementation guide.

In addition, ICER summarized the economic studies of CCM models.¹⁶ Although the economic studies had methodological problems, ICER concluded that CCM is probably cost effective compared to usual care. Incremental cost-effectiveness ratios range from \$15,000 to \$80,000 per quality-adjusted life year gained. These studies also indicated that costs to organizations implementing CCM increase in the short term. Unfortunately, there is little information about long-term costs and cost offsets in other areas. Based on ICER's analysis, organizations would need to invest about \$3 to \$22 per member per month to implement and sustain CCM models, and Medicaid annual expenditures would rise an estimated 0.3% to 4.0%, depending on the prevalence of depression in the population.

Summary

Since publication of the Milbank Memorial Fund report in 2010, the field of BHI has advanced conceptually, and research has proliferated. Overall, evidence for BHI, and specifically the CCM model, is even stronger now than it was in 2010. New findings are emerging regarding components of the CCM model associated with improved outcomes and strategies for addressing comorbid mental and medical disorders.

The conclusions of this literature scan are similar to those of the 2010 Milbank Memorial Fund report: BHI models are important tools to improve outcomes for individuals with mental illness and to overcome the fragmentation of care that occurs in our health care systems. As with any task, it is important to select the right tool, or in this case BHI model, for the task and patient population.

Notes

- ¹ Collins C, Hewson DL, Munger R, Wade T. *Evolving Models of Behavioral Health Integration in Primary Care*. New York, NY: Milbank Memorial Fund; 2010. (Accessed March 2, 2016: <http://www.milbank.org/uploads/documents/10430EvolvingCare/EvolvingCare.pdf>.)
- ² Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med*. 2006;3(11):e442.
- ³ Walker E, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: A systematic review and meta-analysis. *JAMA Psychiatry*. 2015;72(4):334-341.
- ⁴ Young AS, Klap R, Sherbourne CD, Wells KB. The quality of care for depressive and anxiety disorders in the United States. *Arch Gen Psychiatry*. 2001;58(1):55-61.
- ⁵ Duhoux A, Fournier L, Gauvin L, Roberge P. Quality of care for major depression and its determinants: a multilevel analysis. *BMC Psychiatry*. 2012;12:142.
- ⁶ Williams JW Jr, Gerrity M, Holsinger T, Dobscha S, Gaynes B, Dietrich A. Systematic review of multifaceted interventions to improve depression care. *Gen Hosp Psychiatry*. 2007;29(2):91-116.
- ⁷ Butler M, Kane RL, McAlpine D, et al. Does integrated care improve treatment for depression? A systematic review. *J Ambulatory Care Manage*. 2011;34(2):113-125.
- ⁸ Salsberry PJ, Chipps E, Kennedy C. Use of general medical services among Medicaid patients with severe and persistent mental illness. *Psychiatr Serv*. 2005;56(4):458-462.
- ⁹ Druss BG, von Esenwein SA. Improving general medical care for persons with mental and addictive disorders: systematic review. *Gen Hosp Psychiatry*. 2006;28(2):145-153.
- ¹⁰ Bradford DW, Slubicki MN, Avishek N, Wing L, Williams JW. *Effects of Care Models to Improve General Medical Outcomes for Individuals With Serious Mental Illness*. Washington, DC: Veterans Health Administration Health Services Research & Development Service; 2011. (Accessed March 2, 2016: <http://www.hsrd.research.va.gov/publications/esp/smi-exec.pdf>.)
- ¹¹ Nasrallah HA, Meyer JM, Goff DC, et al. Low rates of treatment for hypertension, dyslipidemia and diabetes in schizophrenia: data from the CATIE schizophrenia trial sample at baseline. *Schizophr Res*. 2006;86(1-3):15-22.
- ¹² Horvitz-Lennon M, Kilbourne AM, Pincus HA. From silos to bridges: meeting the general health care needs of adults with severe mental illnesses. *Health affairs (Project Hope)*. 2006;25(3):659-669.

13. Ward MC, White DT, Druss BG. A meta-review of lifestyle interventions for cardiovascular risk factors in the general medical population: lessons for individuals with serious mental illness. *J Clin Psychiatry*. 2015;76(4):e477-e486.
14. Bradford DW, Cunningham NT, Slubicki MN, et al. An evidence synthesis of care models to improve general medical outcomes for individuals with serious mental illness: a systematic review. *J Clin Psychiatry*. 2013;74(8):e754-e764.
15. Pincus HA, Jun M, Franx G, van der Feltz-Cornelis C, Ito H, Mossialos E. How can we link general medical and behavioral health care? International models for practice and policy. *Psychiatr Serv*. 2015;66(8):775-777.
16. Tice JA, Ollendorf DA, Reed SJ, Shore KK, Weissberg J, Pearson SD. *Integrating Behavioral Health into Primary Care: A Technology Assessment Final Report*. Boston, MA: Institute for Clinical and Economic Review; 2015. (Accessed March 2, 2016: http://ctaf.org/sites/default/files/u148/BHI_Final_Report_060215.pdf.)
17. Carey TS, Crotty KA, Morrissey JP, et al. Future research needs for evaluating the integration of mental health and substance abuse treatment with primary care. *J Psychiatr Pract*. 2013;19(5):345-359.
18. Guyatt GH, Oxman AD, Vist GE, et al. GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. 2008;336(7650):924-926.
19. National Institute for Health and Care Excellence (NICE). *Developing NICE guidelines: The Manual; 2014*. (Accessed April 29, 2016: <https://www.nice.org.uk/article/pmg20/chapter/1%20Introduction%20and%20overview>.)
20. Scottish Intercollegiate Guidelines Network (SIGN). *Critical appraisal: Notes and checklists*. Published 2009. (Accessed March 2, 2016: <http://www.sign.ac.uk/methodology/checklists.html>.)
21. Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *Cochrane Database Syst Rev*. 2012;10:CD006525.
22. Oxman T, Dietrich A, Williams J Jr, Kroenke K. A three-component model for reengineering systems for the treatment of depression in primary care. *Psychosomatics*. 2002;43(6):441-450.
23. Miller CJ, Grogan-Kaylor A, Perron BE, Kilbourne AM, Woltmann E, Bauer MS. Collaborative chronic care models for mental health conditions: cumulative meta-analysis and metaregression to guide future research and implementation. *Med Care*. 2013;51(10):922-930.
24. Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS. Com-

parative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care settings: systematic review and meta-analysis. *Am J Psychiatry*. 2012;169(8):790-804.

25. Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med*. 2010;363(27):2611-2620.
26. Katon W, Lin EH, Von Korff M, et al. Integrating depression and chronic disease care among patients with diabetes and/or coronary heart disease: the design of the TEAMcare study. *Contemp Clin Trials*. 2010;31(4):312-322.
27. Rubenstein LV, Williams JW Jr, Danz M, Shekelle P. *Determining Key Features of Effective Depression Interventions*. Washington, DC: Veterans Health Administration Health Services Research & Development Service; 2009. (Accessed March 2, 2016: <http://www.hsrd.research.va.gov/publications/esp/Depression-Interventions-2009.pdf>.)
28. Coventry PA, Hudson JL, Kontopantelis E, et al. Characteristics of effective collaborative care for treatment of depression: a systematic review and meta-regression of 74 randomised controlled trials. *PLoS One*. 2014;9(9):e108114.
29. Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. *Arch Intern Med*. 2006;166(1):2314-2321.
30. Kolko DJ, Campo J, Kilbourne AM, Hart J, Sakolsky D, Wisniewski S. Collaborative care outcomes for pediatric behavioral health problems: a cluster randomized trial. *Pediatrics*. 2014;133(4):e981-e992.
31. Asarnow J, Rozenman M, Wiblin J, Zeltzer L. Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: a meta-analysis. *JAMA Pediatr*. 2015.
32. Silverstein M, Hironaka LK, Walter HJ, et al. Collaborative care for children with ADHD symptoms: a randomized comparative effectiveness trial. *Pediatrics*. 2015;135(4):e858-e867.
33. Myers K, Vander Stoep A, Zhou C, McCarty CA, Katon W. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015;54(4):263-274.
34. Richardson LP, Ludman E, McCauley E, et al. Collaborative care for adolescents with depression in primary care: a randomized clinical trial. *JAMA*. 2014;312(8):809-816.

35. Gerrity M, Zoller E, Pinson N, Pettinari C, King V. *Integrating Primary Care into Behavioral Health Settings: What Works for Individuals with Serious Mental Illness*. New York, NY: Milbank Memorial Fund; 2014. (Accessed March 2, 2016: <http://www.milbank.org/uploads/documents/papers/Integrating-Primary-Care-Report.pdf>.)
36. Peek CJ, the National Integration Academy Council. *Lexicon for Behavioral Health and Primary Care Integration: Concepts and Definitions Developed by Expert Consensus*. Rockville, MD: Agency for Healthcare Research and Quality; 2013. (Accessed March 2, 2016: <https://integrationacademy.ahrq.gov/sites/default/files/Lexicon.pdf>.)
37. Korsen N, Narayanan V, Mercincavage L, et al. *Atlas of Integrated Behavioral Health Care Quality Measures*. Rockville, MD: Agency for Healthcare Research and Quality Integration Academy; 2013. (Accessed March 2, 2016: <http://integrationacademy.ahrq.gov/atlas>.)
38. Heath B, Wise Romero P, Reynolds K. *A Standard Framework for Levels of Integrated Healthcare*. Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions; 2013. (Accessed March 2, 2016: http://www.integration.samhsa.gov/integrated-care-models/A_Standard_Framework_for_Levels_of_Integrated_Healthcare.pdf)
39. Mauer BJ. *Behavioral Health/Primary Care Integration and the Person-Centered Healthcare Home*. Washington, DC: National Council for Community Behavioral Healthcare; 2009. (Accessed March 2, 2016: <http://integration.samhsa.gov/BehavioralHealthandPrimaryCareIntegrationandthePCMH-2009.pdf>.)
40. Mauer BJ. *Behavioral Health/Primary Care Integration: Finances, Policy and Integration of Services*. Washington, DC: National Council of Community Behavioral Healthcare; 2006. (Accessed March 2, 2016: <http://www.integration.samhsa.gov/Behavioral-HealthandPrimaryCareIntegrationandthePCHM-2006.pdf>.)