



PROJECT MUSE®

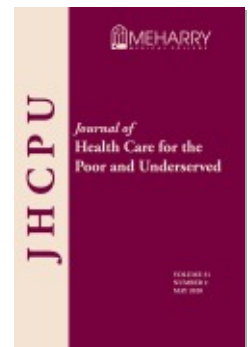
Primary Care Behavioral Health Integration for Anxiety Management in a Safety-Net Health Care System

Ranjani K. Paradise, Karen E. Finnegan, Blessing Dube, Leah Zallman, Emily Benedetto, Ellie Grossman, Hsiang Huang, Colleen O'Brien, Robert C. Joseph

Journal of Health Care for the Poor and Underserved, Volume 31, Number 2, May 2020, pp. 569-581 (Article)

Published by Johns Hopkins University Press

DOI: <https://doi.org/10.1353/hpu.2020.0045>



➔ *For additional information about this article*

<https://muse.jhu.edu/article/756661>

Primary Care Behavioral Health Integration for Anxiety Management in a Safety-Net Health Care System

Ranjani K. Paradise, PhD
Karen E. Finnegan, MPH, PhD
Blessing Dube, MPH
Leah Zallman, MD, MPH
Emily Benedetto, MSW, LCSW
Ellie Grossman, MD, MPH
Hsiang Huang, MD, MPH
Colleen O'Brien, PsyD
Robert C. Joseph, MD, MS

Summary: This report describes the implementation of a primary care behavioral health integration program for anxiety management at Cambridge Health Alliance (CHA), a safety-net health care system. Using a staged implementation process, CHA built upon existing capacities to create a comprehensive infrastructure for managing behavioral health conditions in primary care.

Key words: Anxiety, primary care behavioral health integration, collaborative care, safety net, behavioral health integration, behavioral health.

Background

Anxiety disorders are the most common class of mental disorders in the United States,¹ and are associated with higher emergency department (ED) utilization and higher cost of care.²⁻⁵ Many patients with anxiety disorders do not receive appropriate behavioral health (BH) care, and poor access to BH care is exacerbated in underserved populations.⁶⁻¹⁰ As most patients with anxiety disorders present in primary care (PC)

RANJANI K. PARADISE is affiliated with the Institute for Community Health, Malden, MA and the Tufts University School of Medicine, Boston, MA. **KAREN E. FINNEGAN** is affiliated with Harvard Medical School, Boston, MA. **BLESSING DUBE** is affiliated with Corrona LLC, Waltham, MA. **LEAH ZALLMAN** is affiliated with the Institute for Community Health, Malden, MA, Cambridge Health Alliance, Cambridge, MA, and Harvard Medical School, Boston, MA. **EMILY BENEDETTO** is affiliated with the Cambridge Health Alliance, Somerville, MA. **ELLIE GROSSMAN**, **HSIANG HUANG**, **COLLEEN O'BRIEN** are affiliated with the Cambridge Health Alliance, Somerville, MA and Harvard Medical School, Boston, MA. **ROBERT C. JOSEPH** is affiliated with the Boston Medical Center, Boston, MA, Boston University School of Medicine, Boston, MA, Harvard Medical School, Boston, MA. Please address all correspondence to Ranjani K. Paradise, PhD, Institute for Community Health, 350 Main St, 4th floor, Malden, MA 02148; phone: 781-338-0342, email: rparadise@icommunityhealth.org

rather than specialty psychiatric clinics,^{11–13} integrating BH into PC could improve care for patients with anxiety disorders and help reduce avoidable ED visits, potentially creating cost savings for health care systems.

Collaborative care models provide a framework for integrating BH care into PC, and there is research demonstrating positive outcomes for patients with generalized anxiety disorder and panic disorders.^{14–19} However, few reports detail the pragmatic aspects of implementing collaborative care for anxiety management in real-world settings outside of randomized control trials. This report describes the implementation, expansion, and early evaluation of a primary care behavioral health integration (PCBHI) program based on the collaborative care model and adapted for anxiety management at a safety-net health care system.

Organizational Context

Cambridge Health Alliance (CHA) is a health care delivery system in Massachusetts serving a PC panel of approximately 119,000 patients. Cambridge Health Alliance runs 13 PC clinics, three EDs, and two community hospitals. As a safety-net system, CHA is committed to the care of vulnerable communities, including immigrant, refugee, and low-income populations. There are over 125 ethnicities represented among CHA's patients, and 43% of the PC panel has limited English proficiency. Cambridge Health Alliance payer mix is about 22% commercial insurance, 26% Medicare, 44% Medicaid, and 8% uninsured or covered by the Massachusetts Health Safety Net.

For several years prior to PCBHI implementation, CHA had been building its capacity to participate in value-based payment contracts. The institution recognized that to be successful, it needed to establish formal systems for population-based care management. Cambridge Health Alliance prioritized patients with BH conditions based on the prevalence of these disorders, the significant co-occurrence with medical conditions, and known disparities in health outcomes between patients with BH conditions and those without BH conditions.^{20–22}

By 2013, the evidence base for collaborative care models was building,^{23–26} and CHA identified a need to improve access to BH services, particularly for vulnerable patients. With the impetus of the Public Hospital Transformation and Incentive Initiatives program that was part of the Massachusetts Section 1115 waiver, CHA decided to implement formally a standardized model for PCBHI for adult patients across all PC clinics. With the PCBHI program, CHA aimed to build upon evidence-based models and create a robust structure for population-based management of multiple common BH conditions within PC,²⁷ with focus on depression, substance use disorders (SUDs), and anxiety.

Cambridge Health Alliance was well-positioned to introduce a comprehensive PCBHI program. Its PC practices were already functioning as Patient-Centered Medical Homes, which provided a platform for team-based care across the institution, and all PC sites had some level of co-located BH care in place. In 2012–2013, two PC sites had piloted trainings, outreach protocols, and a registry for depression management, although these activities had not been standardized or scaled up. CHA had also been using several BH screening tools, although screening had not been standardized or universally implemented.

PCBHI Program Implementation and Evaluation

PCBHI program design. In designing the PCBHI program, CHA drew from two evidence-based models: Improving Mood—Providing Access to Collaborative Treatment (IMPACT)²⁴ and Screening, Brief Interventions, and Referral for Treatment (SBIRT).²⁸ Informed by these models, CHA developed a comprehensive integrated care framework, with the first stage of implementation focusing on depression and SUD management. Anxiety-specific program components were added in a second implementation stage after the PCBHI infrastructure was established in all PC sites.

Implementation Stage 1: Creating a PCBHI infrastructure with focus on depression and SUDs. *Timeline and leadership structure.* Primary care behavioral health integration implementation began in late 2014 with development of a leadership structure to support integration (Figure 1), and a staggered program rollout. At the time, CHA had 12 PC sites; six implemented PCBHI between December 2014–June 2015 (early implementer sites) and six implemented PCBHI between September 2015–June 2016 (late implementer sites).

Integrated BH care team members. Cambridge Health Alliance increased BH staffing and embedded three BH care roles into PC teams: consult psychiatrists, integrated therapists, and BH care managers (called mental health care partners (MHCps)). Staffing ratios were determined by a review of the literature, and each role had distinct clinical responsibilities. (Table 1). This staffing structure provided access to multiple levels of BH care support, building PC capacity to address routine care for a range of BH con-

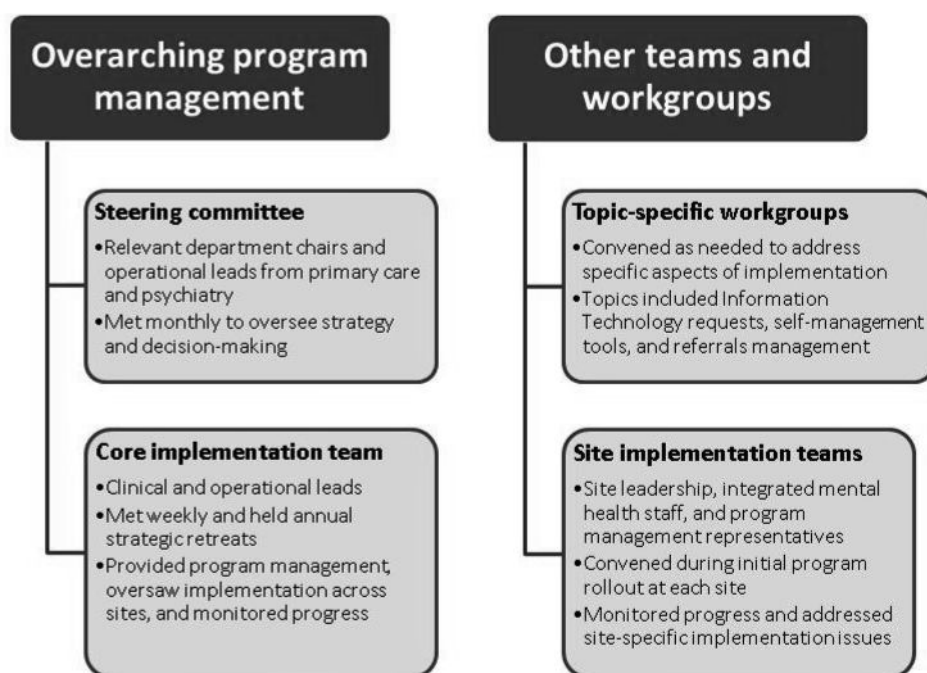


Figure 1. Leadership structure for PCBHI program implementation.

Table 1.
**INTEGRATED BEHAVIORAL HEALTH CARE ROLES
INTRODUCED AS PART OF THE PCBHI PROGRAM**

Role	Staffing ratio per 5,000 patients	Responsibilities
Consult Psychiatrists (MD)	.20 FTE	a) Formal and informal education and consultations to primary care providers b) Initial patient evaluations c) Brief psychiatric treatments in primary care clinics d) Weekly case supervision with MHCPs.
Integrated therapists (LICSW or PhD/PsyD)	.75 FTE	a) Brief evidence-based treatment to patients with moderate behavioral health conditions b) Formal and informal consultation to primary care teams c) Clinical training and support to primary care providers and MHCPs
Mental health care partners (typically unlicensed with at least bachelor's- level training in psychology or social work)	.50 FTE	a) Psychoeducation and coaching around BH symptoms b) Support for self-management of BH conditions c) Immediate visits with patients during their primary care appointments d) Outreach to patients between visits e) Management of mental health registry and team-based proactive outreach to patients in need

ditions and support stable patients with more significant illness, with the expectation that acute, complex cases would be referred to specialty psychiatry. All integrated BH providers and staff were new hires. Funding for the licensed providers was supported by insurance reimbursements, and funding for the unlicensed MHCPs was justified as allowing licensed providers to function at the top of their license.

Workflows. With PCBHI, CHA introduced standardized BH screening and referral workflows into PC. The initial screening workflows focused on depression and SUDs and included short-form first-level screenings* followed by longer second-level screenings.** Formal universal anxiety screening was not part of the initial program

* Depression: Patient Health Questionnaire 2-item (PHQ-2); alcohol use: National Institute on Alcohol Abuse and Alcoholism item 1 (NIAAA-1); drug use: National Institute on Drug Abuse item 1 (NIDA-1)

** Depression: Patient Health Questionnaire 9-item (PHQ-9); alcohol use: 10-item validated Alcohol Use Disorders Identification Test (AUDIT); drug use: Drug Abuse Screening Test (DAST)

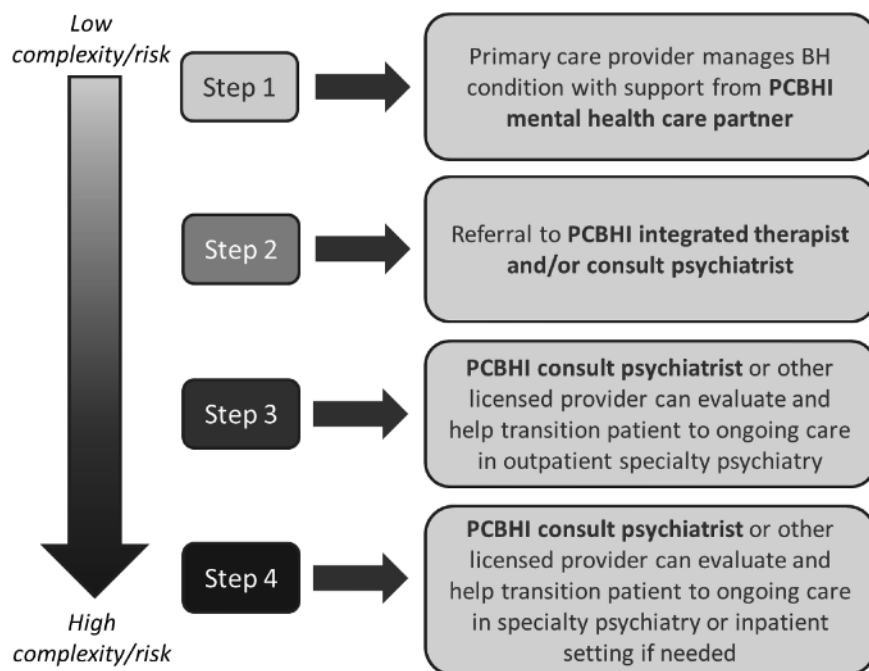


Figure 2. PCBHI stepped care model and referral pathways.

implementation; however, CHA encouraged PC teams to refer patients with anxiety symptoms to the integrated BH staff for assessment and support.

Cambridge Health Alliance also instituted a stepped care model that provided recommended referral pathways based on the level of BH illness complexity and severity (Figure 2). The stepped care model included four levels, ranging from 1 (least complex) to 4 (most complex), and the PCBHI program was primarily focused on treating patients at Steps 1–2.

Electronic medical record (EMR) optimization. Cambridge Health Alliance established and optimized a significant number of new EMR functionalities to facilitate PCBHI. These included BH screening and follow-up tools, automated decision support tools for screening, functionalities to view and monitor screening results and progress, special encounter forms for completing phone outreach, and specialized referral forms for the integrated BH team.

Technology-enabled tools. Cambridge Health Alliance piloted a range of web and smartphone-based tools, and selected 16 websites and mobile apps for self-management of BH conditions. Several were designed for anxiety management, including a set of online guided meditations from UCLA's Mindfulness Awareness Research Center and the apps Breathe2Relax, Self-Help for Anxiety Management (SAM), and Stop, Breathe & Think. Mental health care partners were primarily responsible for introducing patients to these tools and supporting their ongoing use.

Cambridge Health Alliance also introduced a tele-psychiatry consultation service

in which PC providers seeking psychiatric consultation could send a page and receive a response within 10 minutes during business hours, or request a consultation via the EMR and receive a response within 24 business hours.

Training. Cambridge Health Alliance provided trainings to PC and integrated BH team members to support PCBHI implementation. Initial trainings focused on the screening and referral workflows and the stepped care model, and PC providers were also trained on depression management and treatment. Integrated BH staff received specialized training on BH treatment approaches, with particularly extensive training for MHCPs. Mental health care partners were also trained on using mindfulness strategies and breathing exercises to support patients with anxiety management. All integrated BH staff were trained on the self-management websites and apps.

Initial program evaluation. To evaluate Stage 1 of the PCBHI program, CHA conducted a retrospective examination of baseline EMR data from March 2014–February 2015, compared with follow-up EMR data from March 2016–February 2017, approximately two years after PCBHI implementation began. The evaluation study was approved by the CHA Institutional Review Board. Even though the first stage of PCBHI implementation focused primarily on depression and SUDs, the program infrastructure was flexible enough to support care for patients with anxiety, and CHA's initial evaluation included all three of these conditions. A preliminary analysis of ED utilization showed promising results for patients with anxiety, but no clear effect for patients with depression or SUDs. Cambridge Health Alliance therefore decided to conduct a more in-depth evaluation focused on patients with anxiety.

Anxiety-specific evaluation. Cambridge Health Alliance's anxiety-specific evaluation was aligned with the first two elements of the RE-AIM (Reach Effectiveness Adoption Implementation Maintenance) framework²⁹ for evaluating interventions. Specifically, CHA sought to understand the extent to which patients with anxiety received PCBHI services (Reach) and to assess corresponding trends in specialty psychiatry and ED service utilization (Effectiveness). Using the same baseline and follow-up datasets as the initial evaluation, CHA identified anxiety and comparison cohorts using a propensity score matching technique. The anxiety cohort included adult patients who visited PC during the follow-up period and had an anxiety diagnosis documented on the Problem List in both time periods. The anxiety cohort was split into two subgroups: patients who had anxiety alone (no documented depression or SUDs) and patients who had anxiety with co-occurring depression and/or a SUD. For each anxiety subgroup, CHA identified a comparison cohort of patients who visited PC during the follow-up period but did not have depression, anxiety, or any SUD documented on the Problem List. Overall, of the total 64,887 adult patients who visited a CHA PC clinic during the follow-up period of March 2016–February 2017, 10,336 qualified for the anxiety group; 5,901 (57%) had co-occurring depression and/or a SUD and 4,435 (43%) had anxiety alone.

Reach: Trends in outpatient BH service utilization. Although universal anxiety screening and referral workflows were not part of the PCBHI program in Stage 1, 13.8% of patients with anxiety alone and 15.9% of those with anxiety and co-occurring BH disorders received PCBHI services (Table 2) in the follow-up time period, including in-person visits with integrated BH team members and provider-to-provider consultations. Overall, the proportion of patients with anxiety who received primary care-based

Table 2.

**CHANGES IN BEHAVIORAL HEALTH SERVICE UTILIZATION
FOR PATIENTS WITH ANXIETY FOLLOWING STAGE 1 OF
PCBHI IMPLEMENTATION**

	Baseline [N (%)]	Follow-up [N (%)]
Patients with anxiety alone (N = 4435)		
Patients who received at least 1 behavioral health service within primary care	510 (11.5%)	610 (13.8%)
Patients who received at least 1 service from specialty psychiatry	1022 (23.0%)	1107 (25.0%)
Patients with anxiety and co-occurring depression and/or SUD (N = 5901)		
Patients who received at least 1 behavioral health service within primary care	849 (14.4%)	937 (15.9%)
Patients who received at least 1 service from specialty psychiatry	1901 (32.2%)	1938 (32.8%)

BH services increased after PCBHI implementation. The proportion of patients who received services from CHA outpatient specialty psychiatry also increased for patients with anxiety alone, but less so for patients with co-occurring BH disorders. Together, these data showed that the first stage of PCBHI implementation was associated with increased utilization of outpatient BH services for patients with anxiety.

Effectiveness: Trends in ED utilization. Cambridge Health Alliance compared ED visits among patients with anxiety with the matched comparison cohort of patients who were unlikely to have received PCBHI services (patients with no documented depression, anxiety, or SUDs). For patients with anxiety alone, ED visits per 1,000 decreased by 115.9 after PCBHI implementation, compared with a decrease of 30.8 for the comparison cohort (Table 3). For both early and late implementer sites, patients with anxiety alone had a greater decrease in ED visits than the comparison group. There were similar trends for patients with anxiety and co-occurring BH disorders. These trends were promising and suggested that PCBHI may be associated with decreases in ED utilization among patients with anxiety.

Implementation Stage 2: Expansion of PCBHI to formally include anxiety management. Evaluation data showed that some patients with anxiety were treated in PC after the first stage of PCBHI implementation, even though the program was not formally targeting this condition. However, there remained many patients who did not receive care. In a second implementation stage, CHA decided to formalize and standardize anxiety management activities to ensure that patients were appropriately identified and referred to care.

Workflows. Between April–June 2017, CHA added universal anxiety screening to the PCBHI workflows. The screening protocol included the Generalized Anxiety Disorder 2-item (GAD-2) as a first-level screening, and the Generalized Anxiety Disorder 7-item (GAD-7) as a second-level assessment. CHA also developed management guidelines

Table 3.**CHANGES IN EMERGENCY DEPARTMENT UTILIZATION FOR PATIENTS WITH ANXIETY FOLLOWING STAGE 1 OF PCBHI IMPLEMENTATION**

	Baseline [ED visits per 1,000]	Follow-up [ED visits per 1,000]	Change	Difference between anxiety and comparison groups
All sites				
Patients with anxiety alone	750.4	634.5	-115.9	-85.1
Matched comparison group	450.8	420.0	-30.8	
Patients with anxiety and co- occurring depression and/or SUD	793.9	702.1	-91.8	-48.5
Matched comparison group	468.3	425.0	-43.3	
Early implementer sites				
Patients with anxiety alone	731.1	638.9	-92.2	-51.7
Matched comparison group	479.3	438.8	-40.5	
Patients with anxiety and co- occurring depression and/or SUD	804.5	708.7	-95.8	-40.5
Matched comparison group	499.0	443.7	-55.3	
Late implementer sites				
Patients with anxiety alone	778.1	628.2	-149.9	-134.2
Matched comparison group	406.0	390.3	-15.7	
Patients with anxiety and co- occurring depression and/or SUD	779.8	692.8	-87.0	-61.3
Matched comparison group	419.9	394.2	-25.7	

based on GAD-7 scores (Figure 3) and trained PC and integrated BH team members on the new workflows.

Training. To further build anxiety management capacity in PC, CHA trained care teams on prevalence and diagnosis of anxiety disorders, treatment options, and treatment efficacy. CHA also provided training on anxiety self-management strategies and continued to encourage the use of websites and apps. MHCPs were trained on trauma-informed care approaches, due to concerns that anxiety symptoms may be related to underlying trauma for many patients.

Impact of new workflows on anxiety screening rates. In evaluating Stage 2 of PCBHI implementation, CHA focused on Reach, the first component of the RE-AIM framework, and assessed receipt of anxiety screening among PC patients. In the year

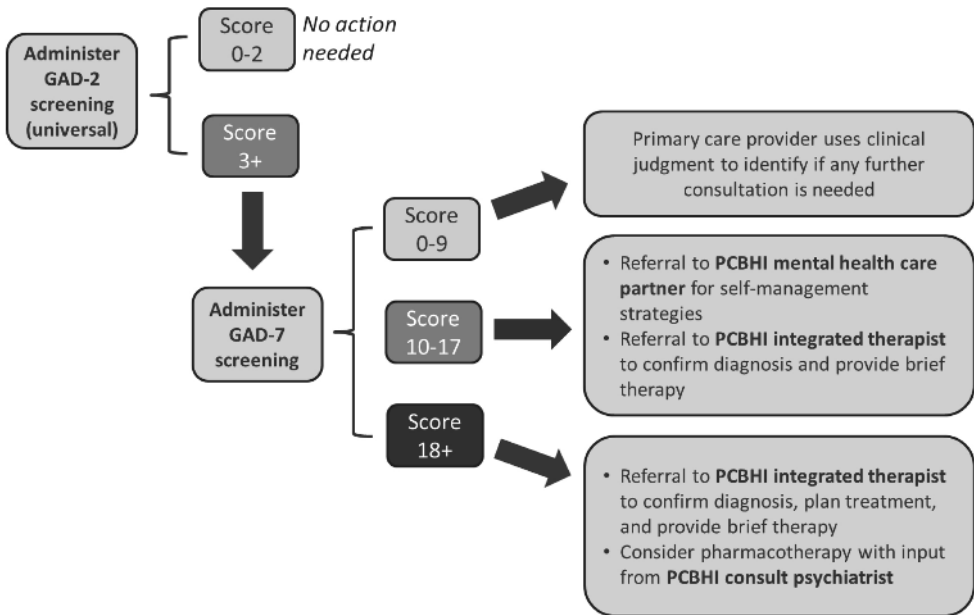


Figure 3. Anxiety screening and referral workflows.

following introduction of universal anxiety screening workflows, approximately 51% of adult patients visiting a CHA PC site completed the GAD-2 first-level anxiety screening, compared with 4% before universal screening was in place. The second-level GAD-7 screening was completed for 57% of qualifying patients. Overall, the new workflows were successful in increasing anxiety screening in CHA primary care, although there was room for further improvement. Future analysis will examine other elements of program Reach after Stage 2, such as the proportion of patients with anxiety who receive PCBHI services over time, as well as elements of Effectiveness, to assess the impact of the expanded program on target outcomes.

Next Steps

With its two-stage implementation, CHA built upon early integration efforts and created an infrastructure for anxiety management within its safety-net primary care setting. After the first implementation stage, outpatient BH service utilization increased among patients with anxiety, including those without co-occurring depression or SUDs. Primary care behavioral health integration implementation was also associated with decreased ED utilization among patients with anxiety. Finally, with the introduction of formalized anxiety management workflows and trainings, anxiety screening rates in PC increased dramatically. Cambridge Health Alliance's ongoing program improvement efforts will focus on increasing adherence to screening protocols, ensuring that patients with anxiety receive appropriate evidence-based BH care, and monitoring BH staffing levels to maintain timely access to care for vulnerable patients.

The evaluation findings reported here are preliminary and further examination is needed to build a robust understanding of the impact of PCBHI on patients with anxiety. Future evaluation will examine BH and ED utilization over longer timeframes; incorporate data on external service utilization, inpatient utilization, and total medical expense; and examine the impact of PCBHI on behavioral health and medical disease outcomes.

Health care systems are increasingly focusing on improving quality of care and reducing costs, and improving management of anxiety disorders will benefit performance under value-based payment systems. CHA's experience provides a practical example how to build a comprehensive infrastructure for integrated care that allows anxiety and other prevalent BH conditions to be managed within the PC setting.

Acknowledgments

This work was funded by Cambridge Health Alliance.

References

1. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):617–27.
<https://doi.org/10.1001/archpsyc.62.6.617>
PMid:15939839
2. Shirneshan E, Bailey J, Relyea G, et al. Incremental direct medical expenditures associated with anxiety disorders for the US adult population: evidence from the Medical Expenditure Panel Survey. *J Anxiety Disord*. 2013 Oct;27(7):720–7. Epub 2013 Sep 25.
<https://doi.org/10.1016/j.janxdis.2013.09.009>
PMid:24135257
3. Fogarty CT, Sharma S, Chetty VK, et al. Mental health conditions are associated with increased health care utilization among urban family medicine patients. *J Am Board Fam Med*. 2008 Sep–Oct;21(5):398–407.
<https://doi.org/10.3122/jabfm.2008.05.070082>
PMid:18772294
4. Simon G, Ormel J, VonKorff M, et al. Health care costs associated with depressive and anxiety disorders in primary care. *Am J Psychiatry*. 1995 Mar;152(3):352–7.
<https://doi.org/10.1176/ajp.152.3.352>
PMid:7864259
5. Jones GN, Ames SC, Jeffries SK, et al. Utilization of medical services and quality of life among low-income patients with generalized anxiety disorder attending primary care clinics. *Int J of Psychiatry Med*. 2001;31(2):183–98.
<https://doi.org/10.2190/2X44-CR14-YHJC-9EQ3>
PMid:11760862
6. Young AS, Klap R, Sherbourne CD, et al. The quality of care for depressive and anxiety disorders in the united states. *Arch Gen Psychiatry*. 2001 Jan;58(1):55–61.
<https://doi.org/10.1001/archpsyc.58.1.55>
PMid:11146758

7. Wang PS, Berglund P, Olfson M, et al. Failure and delay in initial treatment contact after first onset of mental disorders in the national comorbidity survey replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):603–13.
<https://doi.org/10.1001/archpsyc.62.6.603>
PMid:15939838
8. Wang PS, Lane M, Olfson M, et al. Twelve-month use of mental health services in the United States: Results from the national comorbidity survey replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):629–40.
<https://doi.org/10.1001/archpsyc.62.6.629>
PMid:15939840
9. Weisberg RB, Beard C, Moitra E, et al. Adequacy of treatment received by primary care patients with anxiety disorders. *Depress Anxiety*. 2014 May;31(5):443–50. Epub 2013 Nov 4.
<https://doi.org/10.1002/da.22209>
PMid:24190762
10. Cook BL, Nhi-Ha Trinh, Li Z, et al. Trends in racial-ethnic disparities in access to mental health care, 2004–2012. *Psychiatr Serv*. 2017 Jan 1;68(1):9–16. Epub 2016 Aug 1.
<https://doi.org/10.1176/appi.ps.201500453>
PMid:27476805
11. Katerndahl DA, Realini JP. Where do panic attack sufferers seek care? *J Fam Pract*. 1995 Mar;40(3):237–43.
PMid:7876780
12. Leon AC, Olfson M, Portera L. Service utilization and expenditures for the treatment of panic disorder. *Gen Hosp Psychiatry*. 1997 Mar;19(2):82–8.
[https://doi.org/10.1016/S0163-8343\(96\)00154-5](https://doi.org/10.1016/S0163-8343(96)00154-5)
13. Belanger L, Ladouceur R, Morin CM. Generalized anxiety disorder and health care use. *Can Fam Physician*. 2005 Oct;51:1362–3.
PMid:16926971
14. Roy-Byrne P, Craske MG, Sullivan G, et al. Delivery of evidence-based treatment for multiple anxiety disorders in primary care: A randomized controlled trial. *JAMA*. 2010 May;303(19):1921–8.
<https://doi.org/10.1001/jama.2010.608>
PMid:20483968
15. Roy-Byrne PP, Craske MG, Stein MB, et al. A randomized effectiveness trial of cognitive-behavioral therapy and medication for primary care panic disorder. *Arch Gen Psychiatry*. 2005 Mar;62(3):290–8.
<https://doi.org/10.1001/archpsyc.62.3.290>
PMid:15753242
16. Roy-Byrne PP, Katon W, Cowley DS, et al. A randomized effectiveness trial of collaborative care for patients with panic disorder in primary care. *Arch Gen Psychiatry*. 2001 Sep;58(9):869–76.
<https://doi.org/10.1001/archpsyc.58.9.869>
PMid:11545671
17. Rollman BL, Belnap B, Mazumdar S, et al. A randomized trial to improve the quality of treatment for panic and generalized anxiety disorders in primary care. *Arch Gen Psychiatry*. 2005 Dec;62(12):1332–41.
<https://doi.org/10.1001/archpsyc.62.12.1332>
PMid:16330721

18. Rollman BL, Belnap BH, Mazumdar S, et al. Telephone-delivered stepped collaborative care for treating anxiety in primary care: a randomized controlled trial. *J Gen Intern Med*. 2017 Mar;32(3):245–55.
<https://doi.org/10.1007/s11606-016-3873-1>
PMid:27714649
19. Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *Cochrane Database Syst Rev*. 2012 Oct 17 :CD006525.
<https://doi.org/10.1002/14651858.CD006525.pub2>
PMid:23076925
20. Goodell S, Druss BG, Walker ER, et al. Mental disorders and medical comorbidity. Princeton, NJ: The Synthesis Project, 2011. Available at: <https://www.rwjf.org/en/library/research/2011/02/mental-disorders-and-medical-comorbidity.html>.
21. Lin EHB, Heckbert SR, Rutter CM, et al. Depression and increased mortality in diabetes: unexpected causes of death. *Ann Fam Med*. 2009 Sep–Oct;7(5):414–21.
<https://doi.org/10.1370/afm.998>
PMid:19752469
22. Doering LV, Moser DK, Riegel B, et al. Persistent comorbid symptoms of depression and anxiety predict mortality in heart disease. *Int J Cardiol*. 2010 Nov 19;145(2):188–92. Epub 2009 Jun 2.
<https://doi.org/10.1016/j.ijcard.2009.05.025>
PMid:19493579
23. Thota AB, Sipe TA, Byard GJ, et al. Collaborative care to improve the management of depressive disorders: a community guide systematic review and meta-analysis. *Am J Prev Med*. 2012 May;42(5):525–38.
<https://doi.org/10.1016/j.amepre.2012.01.019>
PMid:22516495
24. Unutzer J, Katon W, Callahan CM, et al. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA*. 2002 Dec;288(22):2836–45.
<https://doi.org/10.1001/jama.288.22.2836>
PMid:12472325
25. Woltmann E, Grogan-Kaylor A, Perron B, et al. Comparative 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 Aug;169(8):790–804.
<https://doi.org/10.1176/appi.ajp.2012.11111616>
PMid:22772364
26. Miller CJ, Grogan-Kaylor A, Perron BE, et al. Collaborative chronic care models for mental health conditions: cumulative meta-analysis and metaregression to guide future research and implementation. *Med Care*. 2013 Oct;51(10):922–30.
<https://doi.org/10.1097/MLR.0b013e3182a3e4c4>
PMid:23938600
27. Cambridge Health Alliance. Members in Action Case Study: Primary Care-Behavioral Health Integration. Somerville, MA: Cambridge Health Alliance American Hospital Association, 2018. Available at: <https://www.aha.org/system/files/2018-02/MA%20-%20Cambridge%20Health%20Alliance%20-%20Primary%20Care-Behavioral%20Health%20Integration.pdf>.
28. SAMHSA—HRSA Center for Integrated Health Solutions. Screening, brief inter-

- vention, and referral to treatment. Washington, DC: SAMHSA—HRSA Center for Integrated Health Solutions, 2019.
29. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health*. 1999 Sep;89:1322–7. <https://doi.org/10.2105/AJPH.89.9.1322>
PMid:10474547