

Behavioral Health Integration subgroup meeting

January 5, 2021

Action items

Action Items/Decisions					
#	Action Item	Assigned To:	Date Assigned:	Date Due:	Status
1	Recruit additional family advocates, incl. from WCAAP pediatric improvement work group	Co-leads; staff; others	1/5		
3	Work with HCA staff on data queries after legislative session	Co-leads	1/5		
4	Work with HopeSparks to get relevant data.	Co-leads, Joe	1/5		
5	Get relevant data from CPAA ACH	Co-leads, Kyle	1/5		
6	Adjust draft goals, landscape, etc., as described in slides, based on meeting input	Co-leads	1/5		
7	Reach out to additional stakeholders to accomplish some of this work.	Co-leads	1/5		
8	Set up presentations for initial post-session meetings.	Co-leads, staff	1/5		

Agenda Items	Summary Meeting Notes
Co-leads' comments	<p><b>Kristin Houser and Sarah Rafton</b></p> <p>Representation from: providers from various types of communities (rural, urban, etc.), plans (commercial and Medicaid), Developmental Disabilities Administration, eastern and western WA, ACH representatives, various divisions of HCA, administrators who have gotten integrated programs underway who can share their experience.</p>
Review potential scope of work	<p><i>See page 7.</i></p> <p>Discussion:</p> <ul style="list-style-type: none"> <li>• There is no one model to point to that is the gold standard.</li> <li>• Great variability based on setting (startup costs, funding, region, etc.). Looking for models that work in particular situations.</li> <li>• Are we looking at integrating physical health into behavioral health as well? <i>Sarah: Would like to offer that we focus scope on integrating BH into PH.</i></li> <li>• Put in parking lot as an important piece that we don't want to lose.</li> <li>• As far as legislation around integration, there is strong advocacy from many of the groups around need to be bi-directional. Not doing so really leaves out a whole population.</li> <li>• It may be beneficial to establish a separate subgroup focused integrating primary care into behavioral health settings. This mode of integration has not received enough attention.</li> <li>• Power differentials in initial BHI legislation – physical health care and MCOs focused on very mild BH needs. Where does this leave the behavioral health centers and specialty BH providers? Focusing on mild or moderate needs also eliminated another important player – counties – who may have resources to bear given counties spend a significant amount of</li> </ul>

	<p>their funds for juvenile justice and homelessness. A committee member acknowledged the need to limit scope but is concerned to continue a power differential with physical health driving. [System level concern.]</p> <ul style="list-style-type: none"><li>• One reason primary care is so interested is because children haven't got early services.</li><li>• The system of care value of putting primary care into behavioral health settings is much higher for adults (with serious/persistent mental illness) than for kids in general. So I support keeping this workgroup more limited to BH into primary care as step one to process.</li><li>• Some committee members noted that bringing primary care services into BH settings can be very fruitful for adults, but less so for children; it is not considered a model practice for children, whereas it can be for adults. Some committee members shared bringing primary care into BH settings could make a big difference for homeless youth who are less likely to engage or refusing to engage in primary care otherwise.</li><li>• A current state assessment and data is needed. Also, we should strive to be building stepped care and payor agnostic models, that focus on the pediatric lifespan. I am unaware of the depth and breadth statewide. Really important for there to be a continuum outside of primary care. Important not to consider behavioral health outside of primary care as only intensive or only specialized.</li><li>• Continuity for families – not needing to retell stories.</li><li>• <i>Sarah: Revise goals to include continuum of care and tiered system.</i></li><li>• Importance of telehealth.</li></ul> <p>Current landscape:</p> <ul style="list-style-type: none"><li>• Biggest issue: children and youth who are commercially insured and thus are under-insured. Very little, beyond facilities to refer them to. <i>Sarah: Add to financing scope.</i></li><li>• Other questions re "what does BH in WA state look like for kids?"</li><li>• For those in the court – barriers: timely access, extensive wait times, scarcity of psychiatric appointments. Missing: access to testing. Needs to be a shift in thinking about behaviors – a lot of judgement of youths and of parents – not recognizing that that's part of the underlying condition.</li><li>• How our models partner/interface with the Early Intervention system for children B-3 is critical to understand and be paying attention to. There is also a HUGE gap for kids 3-5.</li><li>• I think the tricky piece we hear with 0-5 is when/how to make the distinction about when referral to developmental specialists' vs infant and early childhood mental health is more appropriate.</li><li>• Understanding gap 3-5 sounds outstanding. Just trying to say that reliable identification of developmental issues 0-3 and timely referral to ESIT can be taken on more effectively elsewhere.</li><li>• A few thoughts: 1. Mental healthcare needs are increasing for kids in particular during COVID, but not so the number of providers. 2. The state's referral service has observed that access is notably more difficult statewide for commercially insured kids vs Medicaid kids, so commercial plan support for integration is an issue, 3. Promise of integration is providing more stitch-in-time access service support to help more kids before things blow up, but we still need that specialty care too</li><li>• Don't think we have a good read on what access is for kids' BH services. There aren't services for a lot of kids. services. What is the breadth? Look through race, income, other lenses. Would be fabulous to have data about the diagnoses in these different areas and what we spend, and interventions we could do further upstream.</li></ul>
--	---

	<ul style="list-style-type: none"><li>• MCOs and HCA: Is there data around 1<sup>st</sup> contact and time of services? <i>Building a series of queries for HCA for post-session; discussed with MaryAnne.</i></li><li>• Looked at timing to access (rural area.) How about that whole piece around integrating in the community? We are pretty siloed. Our integration isn't great.</li><li>• How do we include parents, schools, other stakeholders in our process? Other group: Parents, school personnel bringing in the barriers they are experiencing in real time.</li><li>• What are the complexities or barriers we are experiencing/seeing? We are really working hard to move away from FFS and more outcome-driven, but the only way it is financed in a BH clinic is FFS. And, in every clinic, we have children with Medicaid and with private insurance. Can't bill for 20 different commercial plans. And for Medicaid, need billing system that is not so administratively burdensome.</li><li>• The beauty of integrated program is that we can treat patient/family as a 'whole' and we learning about them over time. Behavioral health can be an important piece but also not necessarily the family's priority in the moment when they lack enough food or have violence in the home. Collaborating with schools and their personnel is/can be essential. I think having voices of those we collaborate with and serve, is needed.</li><li>• Agreed, it is particularly important we provide integrated care for youth with I/DD. Very few experts who can do this..which leads to these youth ending up in ERs.</li><li>• We have a mix of private insurance and Medicaid so the private insurance is an important piece of this as well. This also is key in the continuum of services, specialty care, crisis care. As an example, one challenge is the many months long process of getting therapists paneled with insurance companies.</li><li>• We REALLY need care coordination support to be able to do out BHI well.</li><li>• More extensive application of models specific to pediatric settings; compiling data for pediatric clinics across the state to spread these models; care coordination considerations, esp for kids with high needs/high spend.</li><li>• Currently navigators are not a reimbursable service.</li><li>• What is the cost savings of BHI? (savings in ED visits). <i>Study shows it may not save a huge amount, but may reduce the growth of costs.</i></li><li>• Youth who are receiving BH services in a community setting, are also not getting PH services they need – some are not comfortable in physical health setting.</li><li>• Start with financing or start with care being received? Get a better understanding of a family's needs by starting with what the gold standard is. See better outcomes when we look at the policy levers, like financing afterward. Focus on the model of care first.</li><li>• How will we know we're doing a good job, from the perspective of parents and kids receiving care?</li><li>• One of the requirements in the MCO contracts is to assessment of the level of integration in our networks. Do we need a common assessment? How do we know when we've achieved that model of care? Is there a gold standard? How do MCOs support a practice that just wants to stay at a certain mid-level? MCOs have a role in assessment, but it isn't clear how we collect and analyze the data, and how we involve stakeholders. Has been focused more on bi-direction care at the adult level than at the children and youth level. Still at least a quarter or two away from being able to look at children and youth.</li><li>• Consider questions around how the MCO interacts with families end-to-end?</li><li>• HopeSparks is using the AIMs model to fidelity – only using the care coordination codes. We've had at least one MCO who is interested in modeling these things out for sustainability. Allows us to test it, hire the staff we need, do the billing, and see what we find with the data. Will have meaningful data by ?</li></ul>
--	---

	<ul style="list-style-type: none"> <li>• Kyle: CPAA ACH: provided funding for private clinic – bill collaborative care codes – have good data. 20% Medicaid. Will check with them on their funding data.</li> <li>• Does need to be a standard or best practice, but also need to look at how/if we’re serving all populations. Clearly, one model will not serve all populations. Hope that our measures are not outputs, but outcomes...not whether they’re taking a medication, but whether they’re stabilized. Funded in a way that allows providers to meet all of the unique needs.</li> <li>• Sarah: <i>This group is wanting to tackle financing across different sectors and parts of our system. What can we do that is iterative and where do we start? Concerns about the breadth of scope that is coming up today. How do we be effective? PH and BH perspectives: Keep at the forefront: What is the spectrum? And how do we tier?</i></li> <li>• Kristin: <i>Collaborative care billing codes set up certain requirements. Awareness that FFS rates are not adequate.</i></li> </ul>
Members’ ideas of where we would like to be one year from now	<ul style="list-style-type: none"> <li>• Finding ourselves in a model that can be globally integrated so we can connect with other practices. Private insurance important.</li> <li>• More extensive BH funding models – PCBH, partnership model, collaborative care, etc. – specific to pediatric settings. Compiling data from across the state from pediatric practices. More funding for care coordination, including kids with highest need/highest spend. Navigators.</li> <li>• Understanding of best ways to use the collaborative care codes. In a tiered system of care, knowing that all the levels are working effectively. Funding navigators positions, to get at social determinants of health.</li> <li>• Robust list of the gaps and challenges that are unique for Medicaid payers. Road map of what is next based on these gaps and challenges. We can engage with the AWHPs.</li> <li>• Early presenters: Yakima Valley, Kent-Des Moines, Hope Sparks.</li> <li>• To have a good understanding of how integrated BH fits in the spectrum of care, gaps and barriers, understanding the challenges, translate into legislative recommendations – what are the steps that we need to move legislatively – low-hanging fruit, standards of care and practice, tiered support conversations, budget and funding issues. Describing that landscape. Where does BHI for kids fit in the whole landscape. Understanding how this subgroup can tie into the whole picture but not tackle the whole picture.</li> </ul>
Wrap Up/Next Steps	Subgroup will meet monthly when session ends, with sub-subgroups meeting in between.

### Attendees

Endalkachew Abebaw (Health Care Authority [HCA])  
 Rachel Burke (HCA)  
 Representative Lisa Callan  
 Jean Clark (CHOICE Regional Health Network)  
 Teresa Claycamp (HCA)  
 Diana Cockrell (HCA)  
 Devon Connor-Green (Association of Advanced Practice Psychiatric Nurses)  
 Jamie Elzea (Washington Association of Infant Mental Health)  
 Dr. Thatcher Felt (Yakima Valley Farmworkers Clinic)  
 Alicia Ferris (Community Youth Services)  
 Sylvia Gil (Community Health Plan of Washington)  
 Leslie Graham (UW Neighborhood Clinics)  
 Kimberly Harris (HCA)  
 Libby Hein (Molina Healthcare)

Dr. Bob Hilt (Seattle Children’s Hospital)  
 Kristin Houser (Parent)  
 Avreayl Jacobson (King County Behavioral Health and Recovery)  
 Nichole Jensen (DSHS-Developmental Disabilities Administration)  
 Nat Jungbluth (Seattle Children’s Hospital)  
 Michelle Karnath (Family, Youth and System Partner Round Table [FYSPRT], Clark County Juvenile Court)  
 Garrison Kurtz  
 Sarah Kwiatkowski (Association of Washington Healthcare Plans, Premera-Blue Cross)  
 Joe Le Roy (HopeSparks)  
 Alice Lind (HCA)  
 Dr. Sheryl Morelli (Seattle Children’s Care Network)  
 Jennifer Polley (Northwest Pediatric Center)

---


*Children and Youth Behavioral Health Work Group – Behavioral Health Integration subgroup*

---

Wendy Pringle (HopeSparks)  
Sarah Rafton (Washington Chapter of the American  
Academy of Pediatrics [WCAAP])  
Shannon Re (Kitsap Children’s Clinic)  
Kyle Roesler (CHOICE Regional Health Network)

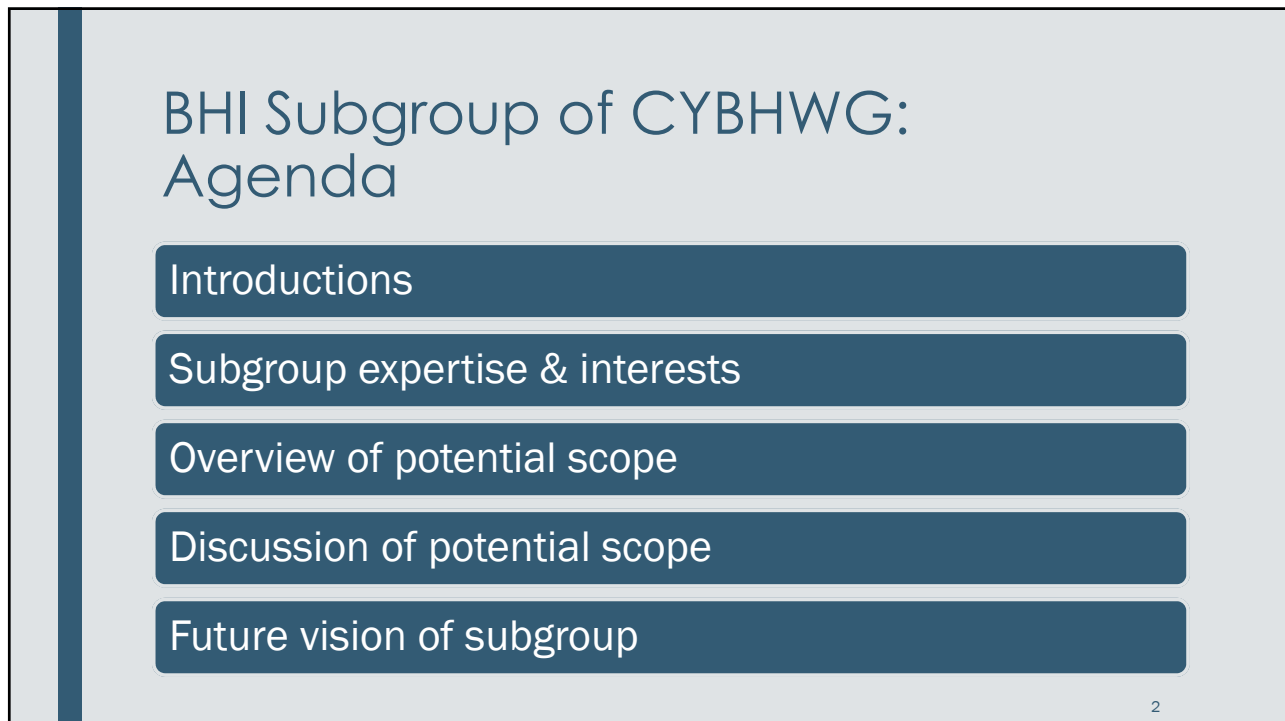
Caitlin Safford (Amerigroup)  
Daniel Smith (Community Health Plan of Washington)  
Mary Stone-Smith (Catholic Community Services of  
Western Washington)  
Beth Tinker (HCA)



 Behavioral Health  
Integration Subgroup of  
CYBHWG

January 5<sup>th</sup>, 2021

1



## BHI Subgroup of CYBHWG: Agenda

- Introductions
- Subgroup expertise & interests
- Overview of potential scope
- Discussion of potential scope
- Future vision of subgroup

2

## BHI Subgroup of CYBHWG: Overarching Goals

- What is the model practice / gold standard to aspire to – nationally and in WA?
- What are barriers to implementing this model or best practice in WA State?
- What are policy recommendations to remove barriers and to support growth of this model statewide?

❖ *Set common goals.*

3

3

## BHI Subgroup of CYBHWG: Current Landscape

- What progress has occurred establishing pediatric integrated BH care in Washington state?
- Where in WA is there integrated behavioral health care for kids in primary care?
  - *Race, ethnicity, language of kids receiving BH integration?*
  - *Where is integrated behavioral health in primary care occurring in a partnership with a BH clinic, e.g., a BHC employee; where is it employed within clinic?*
- Annual spend on BHI for children/adolescents and numbers of children/adolescents served (compared to adults)?

4

4

## BHI Subgroup of CYBHWG: Financing BH integration

- What are the typical start-up costs and what funding is available?
- What are the costs to operate an integrated BH program? (and how many children does that serve?)
- What does Medicaid reimbursement look like now for integrated programs, including both billing under the collaborative care codes and fee for service billing for therapy?
  - *What is parallel funding for commercial insurers?*
  - *What payor mix is sustainable?*
- In clinics where reimbursement is not adequate, how big is the gap between cost and revenue? What has funded the gap?

5

5

## BHI Subgroup of CYBHWG: Role of Apple Health MCOs and HCA

- What is the role of Apple Health Managed Care Organizations in supporting adoption of BHI in primary care for kids?
  - *Start up costs?*
  - *Existing billing opportunities?*
  - *Other contractual opportunities?*
- What is the role of HCA in supporting the development of BHI for kids?
  - *Payment Systems*
  - *Contract provisions*

6

6



## BHI Subgroup of CYBHWG: Programmatic considerations

- What are the model practices to aspire to?
- How can communication between specialty BH providers (private practice and community BH centers) and primary care be more reliable?
- What are opportunities to serve children and families prenatal-to-5?
- What is the potential role of a health navigator or coordinator to support the communication needed with schools, outside agencies, families?
- Are there rule adjustments needed to reduce the burden of billing documentation and make reimbursement more available for care coordination services?

7

7

## BHI Subgroup of CYBHWG: Overarching Goals of Subgroup

- What is the model practice / gold standard to aspire to – nationally and in WA?
- What are barriers to implementing this model or best practice in WA State?
- What are policy recommendations to remove barriers and to support growth of this model statewide?

❖ *Set common goals.*

8

8

## Current Landscape

### What should we learn in this domain?

### What knowledge or information could you contribute (based on your unique role/experience)?

- What progress has occurred establishing pediatric integrated BH care in Washington state?
- Where in WA is there integrated behavioral health care for kids in primary care?
  - *Race, ethnicity, language of kids receiving BH integration?*
  - *Where is integrated behavioral health in primary care occurring in a partnership with a BH clinic, e.g., a BHC employee; where is it employed within clinic?*
- Annual spend on BHI for children/adolescents and numbers of children/adolescents served (compared to adults)?

9

9

## Financing BH integration

### What should we learn in this domain?

### What knowledge or information could you contribute (based on your unique role/experience)?

- What are the typical start-up costs and what funding is available?
- What are the costs to operate an integrated BH program? (and how many children does that serve?)
- What does Medicaid reimbursement look like now for integrated programs, including both billing under the collaborative care codes and fee for service billing for therapy?
  - *What is parallel funding for commercial insurers?*
  - *What payor mix is sustainable?*
- In clinics where reimbursement is not adequate, how big is the gap between cost and revenue? What has funded the gap?

10

10

## Role of Apple Health MCOs and HCA

### What should we learn in this domain?

#### What knowledge or information could you contribute (based on your unique role/experience)?

- What is the role of Apple Health Managed Care Organizations in supporting adoption of BHI in primary care for kids?
  - *Start up costs?*
  - *Existing billing opportunities?*
  - *Other contractual opportunities?*
- What is the role of HCA in supporting the development of BHI for kids?
  - *Payment Systems*
  - *Contract provisions*

11

11

## Programmatic considerations

### What should we learn in this domain?

#### What knowledge or information could you contribute (based on your unique role/experience)?

- What are the model practices to aspire to?
- How can communication with specialty BH providers (private practice and community BH centers) and primary care be more reliable?
- What are opportunities to serve children and families prenatal-to-5?
- What is the potential role of a health navigator or coordinator (who is not clinically licensed BH professional) to supporting the coordination needed with schools, outside agencies, families?
- Are there rule adjustments needed to reduce the burden of billing documentation and make reimbursement more available for care coordination services?

12

12

## BHI Subgroup of CYBHWG: Future Vision

Where we would like this subgroup to be one year from now?

13

# Five-Year Outcomes of Behavioral Health Integration in Pediatric Primary Care

Heather J. Walter, MD, MPH,<sup>a,b,c</sup> Louis Vernacchio, MD, MSc,<sup>b,c,d</sup> Emily K. Trudell, MPH,<sup>b</sup> Jonas Bromberg, PsyD,<sup>a,b,c</sup> Ellen Goodman, MSW,<sup>b,e</sup> Jessica Barton, MSW,<sup>b,e</sup> Gregory J. Young, MD,<sup>b,c,d</sup> David R. DeMaso, MD,<sup>a,c</sup> Glenn Focht, MD<sup>f</sup>

**BACKGROUND AND OBJECTIVES:** In the context of protracted shortages of pediatric behavioral health (BH) specialists, BH integration in pediatric primary care can increase access to BH services. The objectives of this study were to assess the structure and process of pediatric BH integration and outcomes in patient experience (access and quality), cost, and provider satisfaction.

**METHODS:** In 2013, we launched a multicomponent, transdiagnostic integrated BH model (Behavioral Health Integration Program [BHIP]) in a large pediatric primary care network in Massachusetts. Study participants comprised the first 13 practices to enroll in BHIP (Phase-1). Phase-1 practices are distributed across Greater Boston, with ~105 primary care practitioners serving ~114 000 patients. Intervention components comprised in-depth BH education, on-demand psychiatric consultation, operational support for integrated practice transformation, and on-site clinical BH service.

**RESULTS:** Over 5 years, BHIP was associated with increased practice-level BH integration ( $P < .001$ ), psychotherapy ( $P < .001$ ), and medical ( $P = .04$ ) BH visits and guideline-congruent medication prescriptions for anxiety and depression ( $P = .05$ ) and attention-deficit/hyperactivity disorder ( $P = .05$ ). Total ambulatory BH spending increased by 8% in constant dollars over 5 years, mainly attributable to task-shifting from specialty to primary care. Although an initial decline in emergency BH visits from BHIP practices was not sustained, total emergency BH spending decreased by 19%. BHIP providers reported high BH self-efficacy and professional satisfaction from BHIP participation.

**CONCLUSIONS:** Findings from this study suggest that integrating BH in the pediatric setting can increase access to quality BH services while engendering provider confidence and satisfaction and averting substantial increases in cost.

Psychiatric disorders are estimated to occur in 15 million children and adolescents in the United States,<sup>1</sup> with annual treatment costs of ~\$40 billion.<sup>2,3</sup> Despite effective treatments,<sup>4,5</sup> because of the protracted shortage of child-trained behavioral health (BH) specialists,<sup>6–8</sup> many youth with

psychiatric disorders receive no services<sup>9–11</sup> or receive services in settings (schools, primary care) where BH expertise may be limited.<sup>12</sup> Untreated or inadequately treated child and adolescent psychiatric disorders persist over decades, become increasingly intractable to treatment,

## abstract

Departments of <sup>a</sup>Psychiatry, <sup>d</sup>Pediatrics, and <sup>e</sup>Social Work, Boston Children's Hospital, Boston, Massachusetts; <sup>b</sup>Pediatric Physicians' Organization at Children's Hospital, Boston, Massachusetts; <sup>c</sup>Harvard Medical School, Boston, Massachusetts; and <sup>f</sup>Connecticut Children's Medical Center, Hartford, Connecticut

Drs Walter and Vernacchio conceptualized and designed the study, analyzed and interpreted the data, and drafted the initial manuscript; Drs Focht, Bromberg, Young, and DeMaso and Ms Goodman and Barton conceptualized and designed the study; Ms Trudell analyzed and interpreted the data and drafted the initial manuscript; and all authors reviewed and revised the manuscript, approved the final manuscript as submitted, and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

**DOI:** <https://doi.org/10.1542/peds.2018-3243>

Accepted for publication Mar 8, 2019

Address correspondence to Heather J. Walter, MD, MPH, Department of Psychiatry, Boston Children's Hospital, AU 113, 300 Longwood Ave, BCH 3428, Boston, MA 02115. E-mail: [heather.walter@childrens.harvard.edu](mailto:heather.walter@childrens.harvard.edu)

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2019 by the American Academy of Pediatrics

**FINANCIAL DISCLOSURE:** Dr DeMaso receives royalties from American Psychiatric Publishing; the other authors have indicated they have no financial relationships relevant to this article to disclose.

**FUNDING:** Funded by the Boston Children's Hospital Payer Provider Quality Initiative, a collaboration between Boston Children's Hospital, Blue Cross Blue Shield of Massachusetts, Harvard Pilgrim Health Care, Tufts Health Care, and MassHealth.

**To cite:** Walter HJ, Vernacchio L, Trudell EK, et al. Five-Year Outcomes of Behavioral Health Integration in Pediatric Primary Care. *Pediatrics*. 2019;144(1):e20183243

and incur progressively greater social, educational, occupational, and economic consequences over time.<sup>13,14</sup>

To increase access to pediatric BH services, both the American Academy of Pediatrics (AAP)<sup>15</sup> and the American Academy of Child and Adolescent Psychiatry<sup>16-18</sup> propose that mild and moderate presentations of common psychiatric disorders (anxiety, depression, attention-deficit/hyperactivity disorder [ADHD]), comprising up to three-quarters of all presentations of these disorders,<sup>19,20</sup> can be effectively managed in pediatric primary care. Yet despite an abundance of BH tools,<sup>21-30</sup> pediatric primary care practitioners (PCPs) continue to experience challenges around providing BH services.<sup>31-36</sup>

Collaborative partnerships between pediatric and BH practitioners have the potential to attenuate the challenges of managing BH problems in primary care and thereby substantially extend the BH workforce.<sup>37,38</sup> Arising from the chronic care model,<sup>39</sup> integrated collaborative BH care employs multidisciplinary teams to address whole-person needs in the medical home.<sup>40</sup> Although this model has been effective among adult populations in improving medical and BH outcomes and reducing costs,<sup>41-46</sup>

**TABLE 1** Selected Items From the BHIRA Instrument

Leadership domain	Extent of organizational leadership for integrated BH care Extent of providers' engagement in integrated BH care
Resources domain	Extent of colocation of treatment of primary care and BH Extent of linkages to community BH resources
Administrative mechanisms domain	Extent of EHR sharing between medical and BH providers Extent of practice knowledge in coding and billing for BH services
Screening domain	Extent of BH screening
Clinical management domain	Extent to which patient care is informed by best practice evidence Extent of provider comfort with prescribing BH medications
Family centeredness domain	Extent of communication with patients about integrated BH care Extent of patient and family engagement in BH planning processes
Care coordination domain	Extent to which care coordination needs are assessed Extent to which primary care and BH treatment plans are integrated
Quality improvement domain	Extent to which physician, team, and staff training in integrated care and evidence-based practice is provided, supported, and incentivized

empirical support in pediatric populations is limited but promising.<sup>47-50</sup>

In this context, we undertook the development of a multicomponent, transdiagnostic model of integrated pediatric BH care with potential for broad scaling in real-world clinical settings. In accordance with the AAP and American Academy of Child and Adolescent Psychiatry recommendations,<sup>15-18</sup> this model (Behavioral Health Integration Program [BHIP]) comprises 4

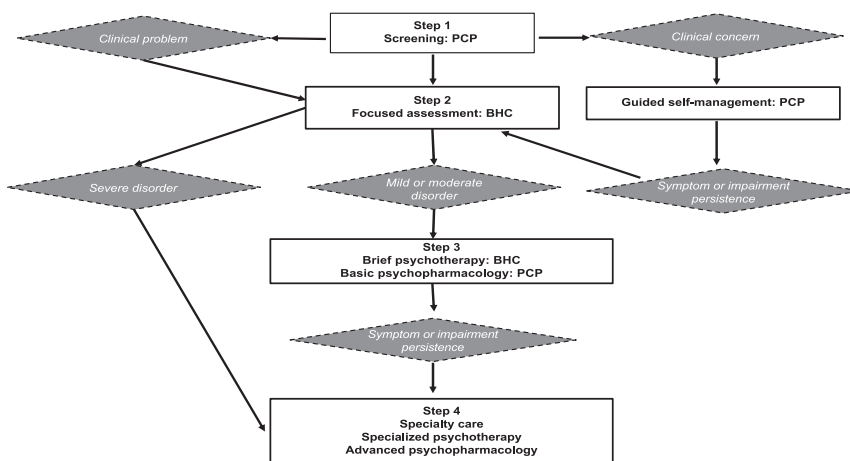
components: in-depth BH education, on-demand psychiatric consultation, operational and clinical support for integrated practice transformation, and on-site clinical BH service. We report the quality metrics<sup>51</sup> of structure, process, and outcomes associated with the BHIP over the first 5 years of the first phase of a multiphase rollout within a large pediatric primary care network. Informed by the "quadruple aim" of health care,<sup>52</sup> outcomes encompassed patient experience (access, quality), cost, and provider satisfaction.

## METHODS

### Study Design

The eligible BHIP population comprises 84 pediatric practices enrolled in a statewide, independent practice association affiliated with an academic medical center. The practices include nearly 400 PCPs serving >350 000 patients.

After notification of project launch and participation requirements through usual network communication channels, 71 practices (85%) agreed to participate in the BHIP. Program participation



**FIGURE 1** Stepped model for BH integration.

requires that practices (1) designate  $\geq 1$  PCPs (physicians or nurse practitioners) to attend the education component and serve as BH “champion” for the practice; (2) use the consultation component as needed; (3) engage in integrated practice transformation, including creating a BH team composed of PCPs, behavioral health clinicians (BHCs [psychologists, social workers, counselors]), and care coordinators; and (4) provide on-site clinical BH services. Participating practices phased into the BHIP at a rate of  $\sim 10$  to 15 per year. BHIP enrollment began in July 2013; once a practice is enrolled, participation is ongoing. Because the project is consistent with our institution’s definition of a quality improvement program, the need for individual informed consent was waived.

### Study Sample

The sample for this article (BHIP, Phase-1) comprises the first 13 practices (with  $\sim 105$  PCPs serving  $\sim 114\,000$  patients) reporting readiness to meet all BHIP participation requirements. The Phase-1 practices are located in the Greater Boston area and range in size from 3 to 17 PCPs. The practices’ communities range from 14 714 to 86 241 in population and \$28 000 to \$72 744 in per capita income (mean: \$47 258, compared with \$35 763 in Massachusetts<sup>53</sup>) and are on average 78% white, 8% African American, 6% Hispanic, and 5% Asian American

**TABLE 2** Billing (CPT) Codes Included in Analyses

Psychotherapy CPT codes
90791, 90832, 90834, 90837, 90839, 90845, 90846, 90847, 90848, 90849, 90853, 90875, 90876, 90880
Medical BH visit CPT codes (primary BH diagnosis)
99211, 99212, 99213, 99214, 99215
Emergency BH visit CPT codes (primary BH diagnosis)
99281, 99282, 99283, 99284, 99285, 99286, 99287, 99288

CPT, current procedural terminology.

**TABLE 3** Guideline-Congruent Medications Included in Analyses

Medications for anxiety and depression
SSRIs
Medications for ADHD
Stimulants
$\alpha$ -agonists
Atomoxetine

Sources: Perou R, Bitsko RH, Blumberg SJ, et al; Centers for Disease Control and Prevention (CDC). Mental health surveillance among children—United States, 2005–2011. *MMWR Suppl*. 2013;62(2):1–35; Connolly SD, Bernstein GA; Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with anxiety disorders. *J Am Acad Child Adolesc Psychiatry*. 2007;46(2):267–283; Pliszka S; AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry*. 2007;46(7):894–921; and Birmaher B, Brent D, Bernet W, et al; AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. *J Am Acad Child Adolesc Psychiatry*. 2007;46(11):1503–1526.

(compared with 74%, 9%, 11%, and 6%, respectively, in Massachusetts<sup>53</sup>). Approximately 85% of practices’ patients are commercially insured; 15% have Medicaid. Structure, process, and outcomes were assessed in Phase-1 practices from July 2013 through June 2018.

### Intervention

#### Education

The BHIP education component (Behavioral Health Learning Community [BHLC]) comprised 10 sessions (16 hours) delivered over the first 2 years of Phase-1; 12 hours were delivered in person in a geographically central location, and 4 hours were delivered by televideo. The adult-learning format<sup>54</sup> encompassed an interactive blend of didactic and case-based material. Formal sessions were supplemented by optional bimonthly televideo case discussions. BHLC faculty comprised child and adolescent psychiatrists (CAPs), developmental and behavioral pediatricians, adolescent medicine specialists, psychologists and neuropsychologists, and clinical

social workers from the affiliated medical center.

The BHLC was designed to provide the knowledge, skills, and resources needed to safely and effectively identify, assess, and treat mild and moderate presentations of common child and adolescent psychiatric disorders, with an emphasis on anxiety, depression, ADHD, and related disorders (stress, behavior). The BHLC emphasized universal screening<sup>55</sup> to identify problems with anxiety, depression, and ADHD; use of symptom rating scales<sup>56–59</sup> to assess problem severity and monitor response to treatment; provision of brief psychotherapy; prescription of guideline-congruent<sup>60–62</sup> medications for anxiety, depression, and ADHD when indicated; and knowing which patients to refer to specialty care. Twenty category 1 continuing medical education credits were offered to physicians by the affiliated medical school; no other incentives for participation were offered.

#### Consultation

The BHIP consultation component provided real-time, workday, 9 AM to 5 PM telephone consultation by CAPs to PCPs. Consultation was designed to reinforce and extend the knowledge, skills, and resources acquired in the BHLC to the management of individual patients. Telephone consultations provided initial assessment and treatment suggestions and ongoing medication management support. For severe presentations, the CAP facilitated referral to specialty BH care for in-person consultation, interim treatment until stable, or ongoing treatment as indicated. To provide continuity of learning, the first 3 years of Phase-1 consultation was provided by CAP BHLC faculty; to ensure fiscal sustainability, in the subsequent 2 years, consultation was provided through a partnership between the BHIP and the



Massachusetts Child Psychiatry Access Program (MCPAP).<sup>63</sup>

### Integrated Practice Transformation

The BHIP practice transformation component comprised 6 operational sessions (12 hours) focusing on clinical and business workflows; revenue-cycle management; BHC hiring, contracting, and credentialing; BH crisis protocols; linkages to specialty BH services; electronic health record (EHR) documentation; and support for practice-individualized quality improvement projects. Operational sessions were supplemented by 6 to 8 hours per month of practice-based support. Clinical support for BHCs by BHIP senior social workers comprised 1 to 2 hours per month of individual telephonic supervision, 1 hour per month of televideo case conferences, and twice-yearly 6-hour in-person trainings.

### Clinical BH Service

On-site clinical BH service used a stepped-care model in which each step has a clearly defined patient

population, goal, and provider and ascends in treatment intensity in accordance with the severity of the clinical presentation (Fig 1). The clinical roles of PCPs were BH screening, guided self-management, and psychopharmacology; the roles of BHCs were focused assessment and brief psychotherapy. Practice-based care coordinators assisted practitioners with referrals to specialty care as indicated.

### Measures

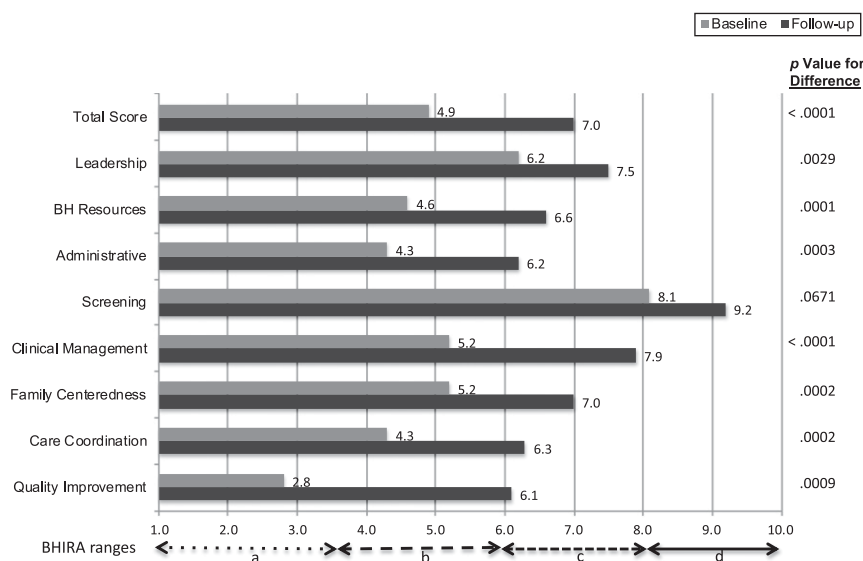
Progress of Phase-1 practices toward full BH integration<sup>64</sup> was assessed at baseline and 5-year follow-up by completion of the Behavioral Health Integration Readiness Assessment (BHIRA) by BH teams in each practice. This 35-item, 10-point Likert-scale instrument, adapted from the AAP Mental Health Readiness Inventory<sup>65</sup> and the Maine Self-Assessment Evaluation Tool,<sup>66</sup> is used to measure the degree of BH integration in 8 domains; examples of BHIRA items are presented in Table 1. A total mean score was

calculated from the domain score means.

BHC use in Phase-1 practices was compiled from deidentified medical records maintained by the pediatric practice network; analysis was limited to 6 out of 13 practices using the same EHR. Use of consultation was compiled from deidentified records in an electronic database maintained by the consultation program through June 2016; after that, the consultation component merged with the MCPAP,<sup>63</sup> which maintained separate usage records.

BH service delivery in Phase-1 practices was defined as all psychotherapy visits and all ambulatory medical and hospital emergency department (ED) visits for a primary BH diagnosis (see Table 2 for billing codes) and all prescriptions for guideline-congruent (Table 3) medications for anxiety, depression, and ADHD. Total ambulatory BH costs were defined as any spending on outpatient and emergency BH visits and BH pharmacy. BH visits and costs, compiled from 2013 through the end of 2017 (the most recent complete project year), were derived from paid insurance claims from a single, large commercial insurance company that shares data with the practice network. All costs were adjusted to 2017 dollars by using the Consumer Price Index for Medical Care (Northeast region).

Provider satisfaction was assessed through anonymous electronic surveys completed by BHIP providers at 5-year follow-up. The BHC survey, addressing BH self-efficacy and professional satisfaction, was adapted from a previous survey administered to PCPs.<sup>67</sup>



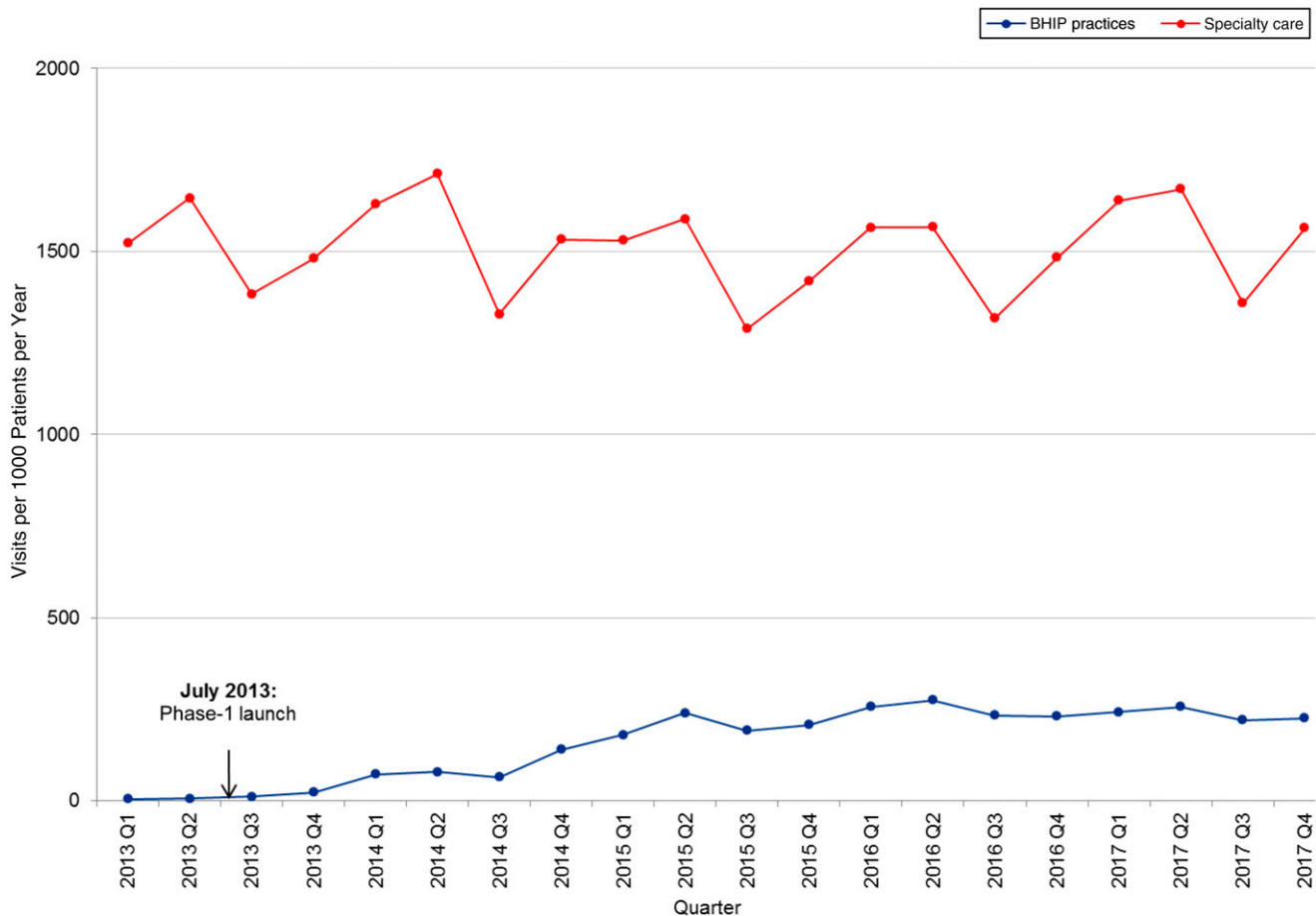
**FIGURE 2**

Mean BHIRA scores, baseline and 5-year follow-up ( $n = 12$ ). Section "a": 1.0–3.5, demonstrates this characteristic never or to a very limited degree. Section "b": 3.6–5.9, demonstrates this characteristic to some degree. Section "c": 6.0–7.9, demonstrates this characteristic most of the time. Section "d": 8.0–10, demonstrates this characteristic all of the time.

### Statistical Analysis

Baseline and follow-up BHIRA scores were compared by using paired-sample  $t$  tests. Interrupted time series





**FIGURE 3** Psychotherapy by site of service. Q1, quarter 1; Q2, quarter 2; Q3, quarter 3; Q4, quarter 4.

analysis was used to assess changes in psychotherapy and medical BH visits and psychiatric prescriptions from 2013 (pre-BHLC) to 2015–2017 (post-BHLC), controlling for secular trends and postlaunch slope changes.<sup>68,69</sup> Autocorrelation among data points was assessed by using the Durbin-Watson statistic; when significant autocorrelation was found, autoregressive parameters were included in the model. All analyses were completed by using SAS version 9.4 (SAS Institute, Inc, Cary, NC). Trends in ED use were assessed by using statistical process control methodology (QI Macros software; KnowWare International, Denver, CO) to determine if special cause variation coincident with BHIP implementation occurred. Ambulatory BH costs in 2013

(pre-BHLC) were compared with the average 2015–2017 costs (post-BHLC), adjusted to 2017 dollars.

## RESULTS

### Structure

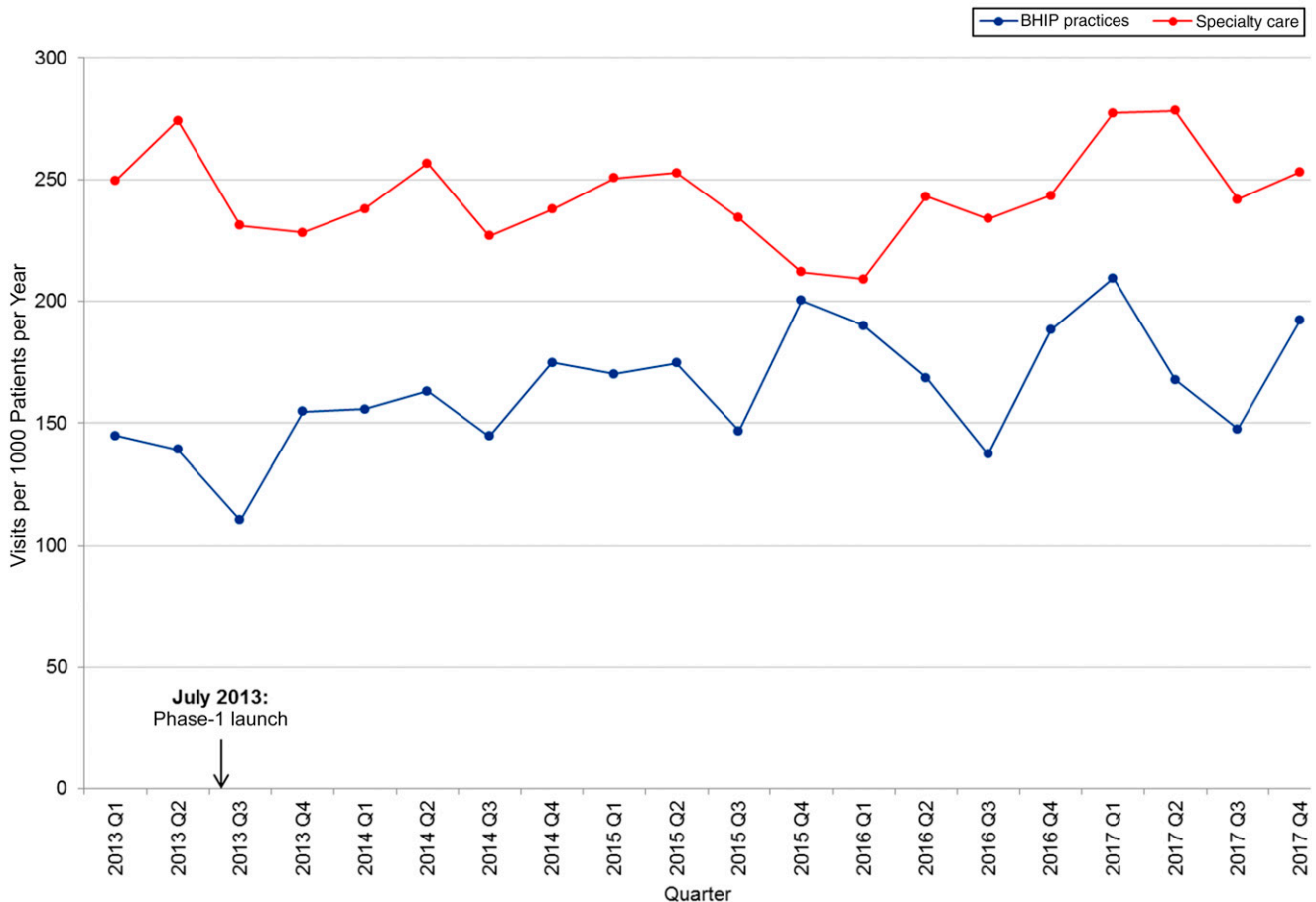
Twelve Phase-1 practices (92%) completed the BHIRA at baseline and 5-year follow-up. The total mean BHIRA score increased from 4.9 (2013) (“some degree” of integration) to 7.0 (2018) (integration “most of the time”) ( $P < .001$ ). Increases in 7 of the 8 domain mean scores also were statistically significant (Fig 2). At follow-up, all 8 integration readiness domains were demonstrated “most” or “all” of the time.

### Process

All Phase-1 practices designated  $\geq 1$  PCP BH champion to enroll in the

BHLC. Twenty-nine PCPs enrolled (28% of 105 Phase-1 PCPs); of those, 23 (79%) completed continuing medical education requirements (attendance at  $>70\%$  of sessions, completion of assigned quality improvement coursework).

All Phase-1 practices participated in telephone consultation. Over 30 months, consultations totaled 254 (mean: 8.5 per month; range: 0–62; mean: 19.5 per practice). The top 2 reasons for consultation pertained to medication management (52.2%) and diagnosis (13.1%); the remainder primarily pertained to level and type-of-care decisions. The top provisional postconsultation diagnoses were anxiety (26.6%), depression (22.7%), ADHD (14.8%), and behavior disorder (7.0%). Postconsultation, 67.3% of patients were mutually



**FIGURE 4** Medical BH visits by site of service. Q1, quarter 1; Q2, quarter 2; Q3, quarter 3; Q4, quarter 4.

agreed to be appropriate for PCP management, and 32.7% were referred to specialty care. As rated by the CAP consultant, the mean Children’s Global Assessment Scale score (used to measure functional impairment<sup>70</sup>) for referred patients was 48 (moderately severe). Of referred patients, 48.6% were referred locally, 35.7% were referred to the affiliated medical center, 10.0% were referred to the state BH system for Medicaid-insured youth, and 4.1% were referred to a hospital ED.

All Phase-1 practices received integration support. Eleven practices (85%) integrated a BHC, 80% by hiring and 20% by contracting with a community agency. Seventeen BHCs were hired, ranging from 1 to 3 per practice. The median age of

BHCs’ patients was 11 years; 51.6% were boys. The median number of psychotherapy visits per patient was 3 (range: 1–40). Disorders most commonly diagnosed were stress related (40.3%), anxiety (32.4%), attention (13.0%), depressive (7.7%), and behavior (2.1%); comorbid disorders comprised 8.6%. Of all billable visits (8042), 46.6% were evaluation and 53.4% were psychotherapy; the nonbillable (telephone calls) to billable ratio was ~2:1.

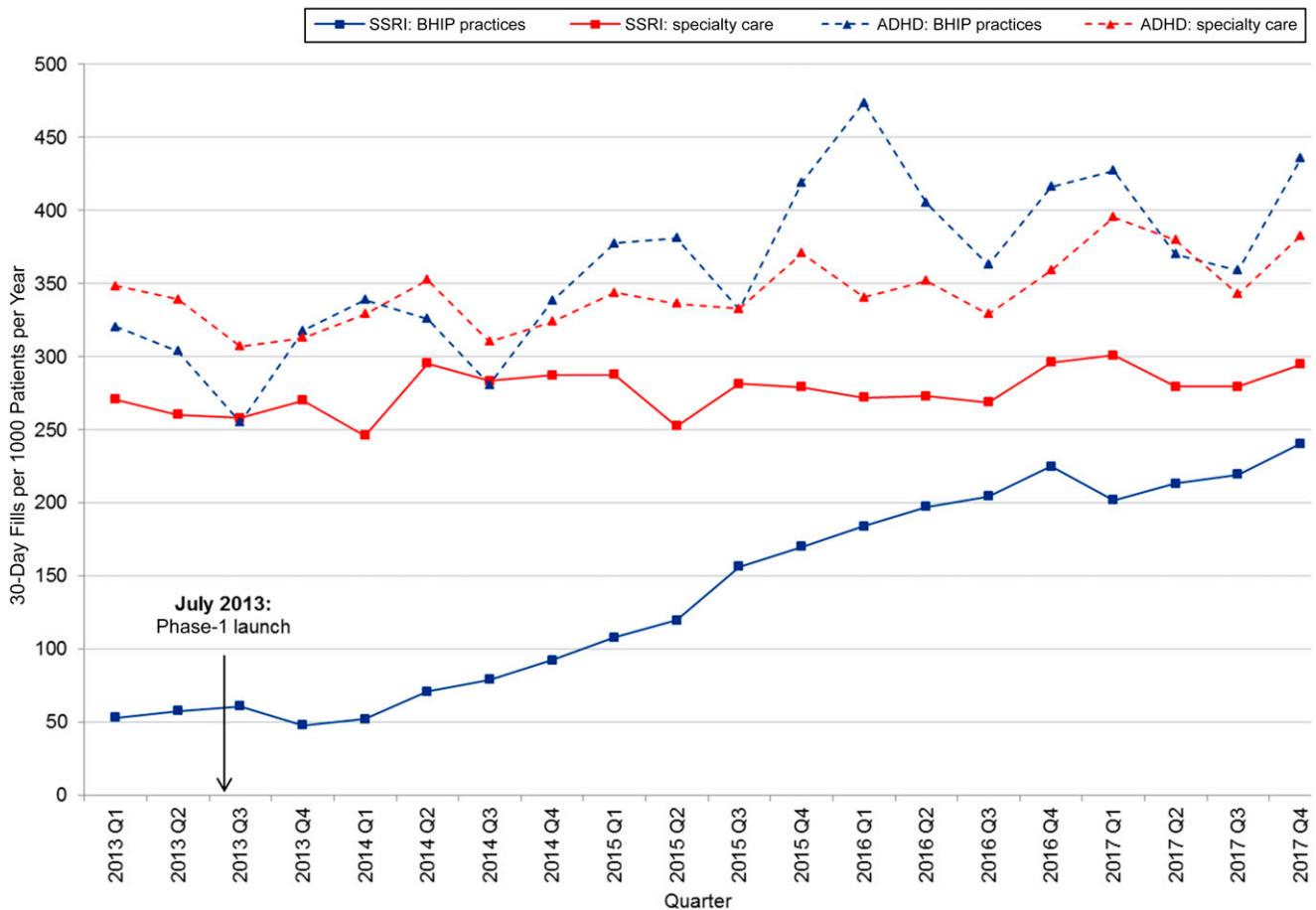
### Outcomes

#### *Patient Experience (Access, Quality)*

The integration of BHCs resulted in increased psychotherapy visits in Phase-1 practices from 11 out of 1000 patients per year (2013) to

230 (2015–2017) ( $P < .001$ ; Fig 3). Psychotherapy visits in specialty settings remained unchanged (1508 [2013], 1499 [2015–2017];  $P = .53$ ). The proportion of total (BHIP plus specialty) psychotherapy visits delivered within BHIP practices increased from 0.7% (2013) to 13.3% (2015–2017). A marked seasonal pattern in psychotherapy visits (fewer visits in summer) observed in specialty care was not observed in BHIP practices.

Medical BH visits to Phase-1 PCPs increased from 137 out of 1000 patients per year (2013) to 174 (2015–2017) ( $P = .04$ ; Fig 4) while remaining unchanged in specialty settings (246 [2013], 244 [2015–2017];  $P = .99$ ). The proportion of total medical BH visits



**FIGURE 5** Guideline-congruent anxiety, depression, and ADHD medication prescribing by site of service. Q1, quarter 1; Q2, quarter 2; Q3, quarter 3; Q4, quarter 4.

delivered within BHIP practices increased from 35.8% (2013) to 41.6% (2015–2017).

Prescriptions for guideline-congruent anxiety and depression medications (selective serotonin reuptake inhibitors [SSRIs]) increased in BHIP practices from 55 30-day fills per 1000 patients per year (2013) to 186 (2015–2017) ( $P = .05$ ; Fig 5). The proportion of total SSRIs prescribed within BHIP practices increased from 17% (2013) to 40% (2015–2017). Prescriptions for guideline-congruent ADHD medications (stimulants,  $\alpha$ -agonists, atomoxetine) increased in Phase-1 practices from 299 30-day fills per 1000 patients per year (2013) to 397 (2015–2017) ( $P = .05$ ; Fig 5). The proportion of total ADHD medications prescribed within BHIP

practices increased from 48% (2013) to 53% (2015–2017).

Beginning in 2014, ED BH visits for patients in Phase-1 practices decreased by 33.9% (18.9 visits per 1000 patients per year to 12.5) (Fig 6). However in 2017, ED visits rose to 18.5 visits per 1000 patients per year, similar to the pre-BHIP rate.

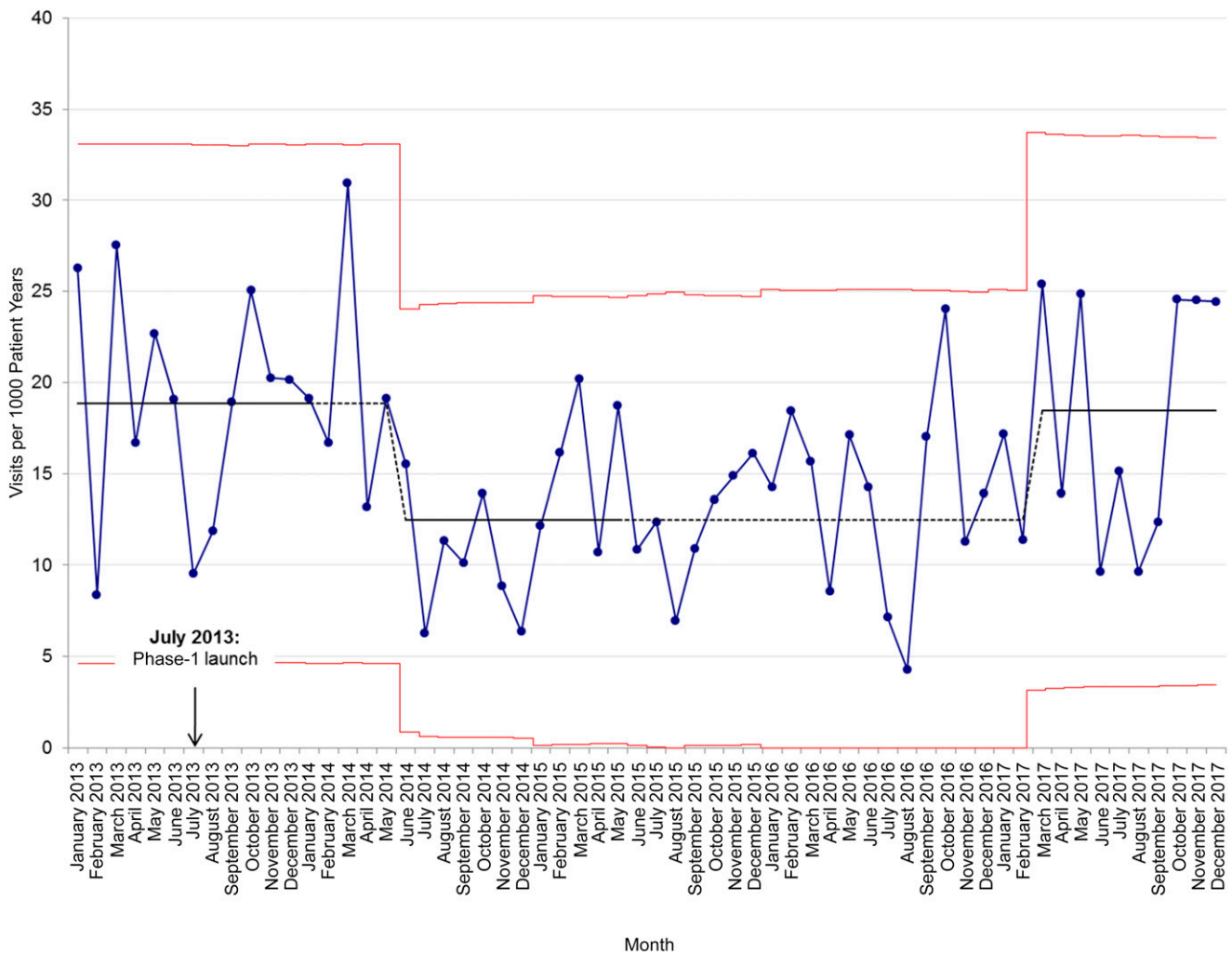
#### Cost

Over 5 years, total ambulatory BH costs (BHIP plus specialty) increased by 8% in constant dollars, from \$32.78 per patient per year (2013) to an average of \$35.32 (2015–2017) (Fig 7). Care within BHIP practices accounted for nearly all of the increase, with BHIP outpatient costs increasing by 123%, from \$2.06 per patient per year (2013) to an average

of \$4.60 (2015–2017) and BHIP pharmacy costs increasing by 40%, from \$3.56 per patient per year (2013) to an average of \$4.98 (2015–2017). Total BH-related emergency costs decreased by 19%, from \$1.88 per patient per year (2013) to an average of \$1.51 (2015–2017).

#### Provider Satisfaction

As reported from a separate study, survey responses from 66 PCPs in BHIP Phase-1 through Phase-3 (81% response rate) demonstrated high BH self-efficacy and satisfaction associated with BHIP participation.<sup>67</sup> Survey responses from 14 BHCs (93% response rate) in BHIP Phase-1 were similar (Fig 8). More than 90% of surveyed PCPs and BHCs believed that BHIP participation enables



**FIGURE 6**  
ED BH visits by patients in BHIP practices.

effective management of mild and moderate BH problems in pediatric primary care.

## DISCUSSION

This study is the first to our knowledge in which researchers have examined, over an extended period, the structure, process, and outcomes of a multicomponent, transdiagnostic model of BH integration in real-world pediatric settings with diverse patient populations exercising treatment choice. In the findings, it is suggested that the BHIP was feasible to implement and successful in moving practices toward full BH integration, increased primary care BH access

while maintaining quality and averting anticipated substantial increases in BH costs, and achieved high provider BH self-efficacy and professional satisfaction. Although favorable findings have also been demonstrated in several research-based studies of collaborative pediatric BH care,<sup>71-73</sup> because this was a naturalistic study, the findings from the BHIP may have heightened applicability to other real-world pediatric settings and, as such, serve as a model for their development.

Over the 5-year observation period of BHIP Phase-1, clear evidence of increased BH integration<sup>63</sup> in participating practices emerged,

encompassing leadership, BH resources, administrative, clinical management, family centeredness, care coordination, and quality improvement domains. In this enabling structural context, beneficial findings were observed in patient experience, cost, and provider satisfaction.

Primary care access to both psychotherapy and medical BH visits and to anxiety, depression, and ADHD medication increased significantly over time. By the end of the observation period, BHIP BHCs provided more than one-tenth of all psychotherapy visits, and BHIP PCPs provided more than two-fifths of all



**FIGURE 7**

Ambulatory spending on outpatient care, pharmacy, and ED BH claims. <sup>a</sup>Adjusted for inflation; figures are in 2017 US dollars.

medical BH visits, two-fifths of all SSRI prescriptions, and one-half of all stimulant,  $\alpha$ -agonist, and atomoxetine prescriptions (for comparison, in a recent national study, PCPs prescribed one-tenth of antidepressants to children and adolescents, compared with specialists<sup>74</sup>). The access findings were congruent with ambulatory BH costs, in which shifts over time in both BH outpatient and pharmacy costs from specialty to primary care were demonstrated.

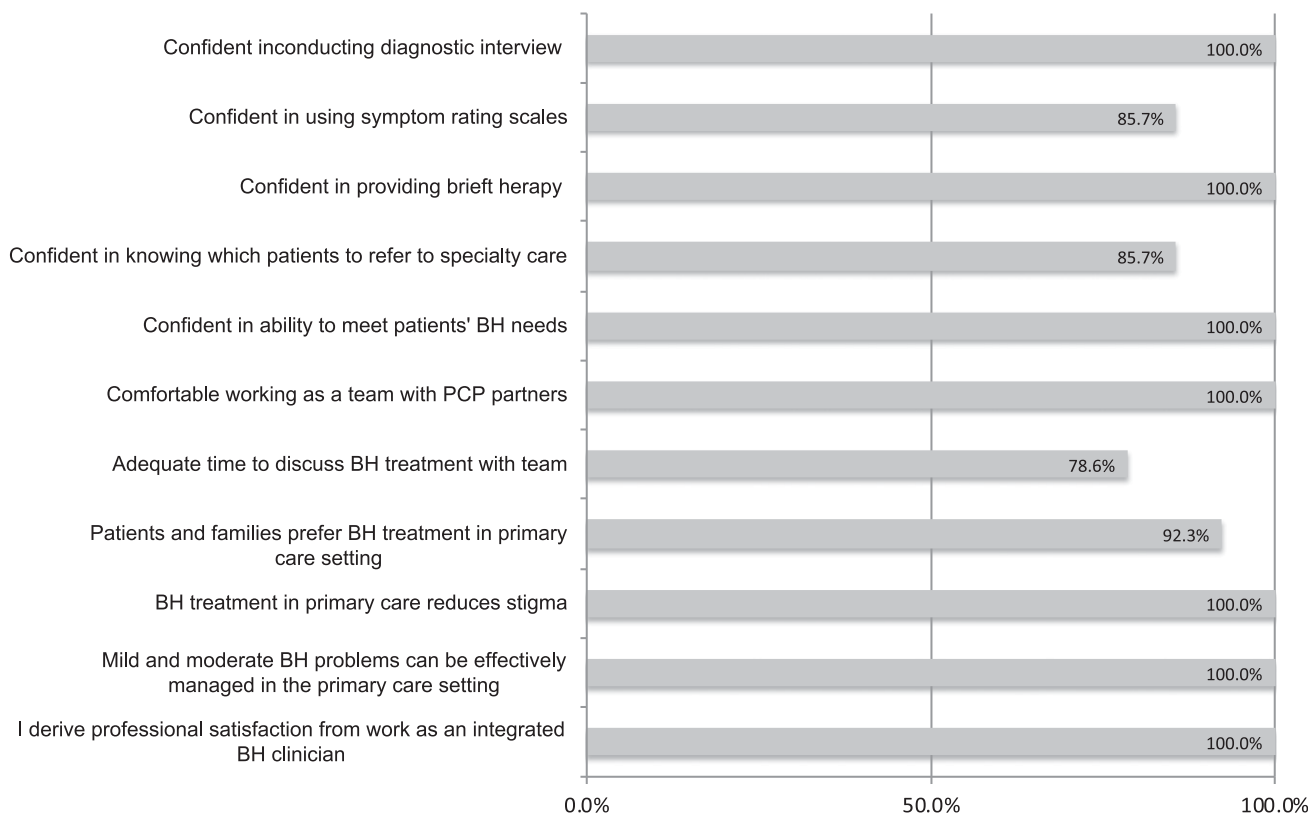
The shift in service venue from specialty to primary care (“task-shifting”<sup>75</sup>) is a central tenet of integrated care that has substantial access advantages to patients and families, including proximity, continuity, familiarity, trust, reduced stigma, and lower cost.<sup>76</sup> Task-

shifting did not appear to be associated with a decrement in the quality of care, in that increases in the prescribing of anxiety, depression, and ADHD medications by BHIP PCPs adhered to guideline-congruent medications. Moreover, all patients receiving psychotherapy from BHIP BHCs had diagnoses targeted for primary care management, and the average number of therapy visits was consistent with brief primary care intervention.<sup>77</sup> Other BHIRA-derived quality-of-care indicators were significant increases in the extent to which BH screening, evidence-based care, and quality improvement activities occurred in BHIP practices.

Total ambulatory BH spending increased by only 8% over 5 years, suggesting that BH task-shifting to primary care with the goal of increasing access did not

substantially increase costs. In the only other collaborative pediatric BH study in which researchers examined spending,<sup>48</sup> ambulatory BH costs in primary care also increased during the intervention because of greater access to BH services in that setting.

Total emergency BH spending decreased by 19%, which may partially reflect decreased (albeit not sustained) ED BH usage by patients in BHIP practices. By comparison, the medical center serving as a major referral site for pediatric BH emergencies in the Greater Boston area reported an 86% increase in ED BH volume from 2013 (983 visits) to 2017 (1824 visits) (D.R. DeMaso, MD, personal communication, 2018). It may be that early identification and intervention in lower-cost primary care settings can decrease overuse



**FIGURE 8**  
BHC self-efficacy and satisfaction ( $n = 14$ ).

of high-cost emergency BH services, although this remains to be definitively demonstrated.

Provider burnout<sup>78</sup> was of interest in the BHIP because of the expansion of PCPs' and BHCs' scope of practice to include BH and primary care, respectively. In follow-up surveys, it was demonstrated that both groups of providers developed high BH self-efficacy and professional satisfaction as a result of BHIP participation, and nearly all came to believe that mild and moderate BH problems can be effectively managed in primary care.

Because subsequent phases of the BHIP are scaling up to all 84 network pediatric practices with nearly 400 PCPs, sustained expansion was a major focus from the outset. With philanthropic support, the education component is being

migrated to a free-access Web-based platform maintained by the affiliated medical center to enable on-demand PCP learning.<sup>79</sup> The consultation component merged with the MCPAP, which receives ongoing legislatively mandated state and commercial payer funding.<sup>80,81</sup> In preliminary data, it is suggested that integrated BHCs can be revenue-neutral, despite relatively high unbillable services (J. Bromberg, PsyD, personal communication, 2018).

Strengths of this study include the large study population, high program participation rates, standardized interventions and outcome measures across all practices, a broad array of quality indicators, availability of EHR and claims data, and lengthy follow-up. As a quality initiative, findings from BHIP Phase-1

are informing program content, delivery, and support in subsequent implementation phases.

Limitations include the nonexperimental design, possibility of selection bias creating an early adopter cohort, service use and cost data limited to a single (albeit largest) commercial payer source (and as such, potentially limited applicability to higher Medicaid populations), inability to disaggregate the effects of individual program components, lack of a comprehensive cost-revenue analysis, and absence of clinical BH patient outcomes (planned for assessment in later BHIP phases after migration of all practices to a single EHR). Additionally, the BHIP benefits from implementation in a quality-driven pediatric practice network



affiliated with an academic medical center that provides grant-funded education and clinical and operational support and from participation in a state-funded CAP consultation program. As such, the BHIP model may need adaptation for other settings with different health care structures and resources.<sup>82</sup>

## CONCLUSIONS

In the findings from this study, it is demonstrated that the BHIP model is feasible to implement, highly valued by providers, and useful in contributing to health care's quadruple aim. If widely scaled, locally adapted, and sustainably funded, programs such as the BHIP can expand the BH workforce into pediatric primary care and in so doing, help alleviate the substantial gap between the millions of youth needing

quality BH services and those receiving them.

## ACKNOWLEDGMENTS

We thank the following for their contributions to the BHIP: the practitioners and staff at Bridgewater Pediatrics, Children's Medical Office of North Andover, Benjamin Spingarn Rottenberg Pediatric and Adolescent Medicine, Fellsway Pediatrics, Framingham Pediatrics, Hyde Park Pediatrics, Longwood Pediatrics, Needham Pediatrics, Pediatric Associates of Medford, Post Road Pediatrics, Revere-Winthrop Pediatrics, Wareham Pediatrics, and Westwood/Mansfield Pediatric Associates; the BHLC faculty from the Departments of Psychiatry and Pediatrics of Boston Children's Hospital; and the BHIP staff, past and present.

## ABBREVIATIONS

AAP: American Academy of Pediatrics  
 ADHD: attention-deficit/hyperactivity disorder  
 BH: behavioral health  
 BHC: behavioral health clinician  
 BHIP: Behavioral Health Integration Program  
 BHIRA: Behavioral Health Integration Readiness Assessment  
 BHLC: Behavioral Health Learning Community  
 CAP: child and adolescent psychiatrist  
 ED: emergency department  
 EHR: electronic health record  
 MCPAP: Massachusetts Child Psychiatry Access Program  
 PCP: primary care practitioner  
 SSRI: selective serotonin reuptake inhibitor

**POTENTIAL CONFLICT OF INTEREST:** The authors have indicated they have no potential conflicts of interest to disclose.

## REFERENCES

- Perou R, Bitsko RH, Blumberg SJ, et al; Centers for Disease Control and Prevention (CDC). Mental health surveillance among children—United States, 2005–2011. *MMWR Suppl.* 2013; 62(2):1–35
- Torio CM, Encinosa W, Berdahl T, McCormick MC, Simpson LA. Annual report on health care for children and youth in the United States: national estimates of cost, utilization and expenditures for children with mental health conditions. *Acad Pediatr.* 2015; 15(1):19–35
- Bui AL, Dieleman JL, Hamavid H, et al. Spending on children's personal health care in the United States, 1996–2013. *JAMA Pediatr.* 2017;171(2):181–189
- Weisz JR, Kuppens S, Ng MY, et al. What five decades of research tells us about the effects of youth psychological therapy: a multilevel meta-analysis and implications for science and practice. *Am Psychol.* 2017;72(2):79–117
- Correll CU, Kratochvil CJ, March JS. Developments in pediatric psychopharmacology: focus on stimulants, antidepressants, and antipsychotics. *J Clin Psychiatry.* 2011; 72(5):655–670
- Kim WJ; American Academy of Child and Adolescent Psychiatry Task Force on Workforce Needs. Child and adolescent psychiatry workforce: a critical shortage and national challenge. *Acad Psychiatry.* 2003;27(4):277–282
- Thomas CR, Holzer CE III. The continuing shortage of child and adolescent psychiatrists. *J Am Acad Child Adolesc Psychiatry.* 2006;45(9):1023–1031
- American Academy of Child and Adolescent Psychiatry. Child and adolescent psychiatry workforce crisis: solutions to improve early intervention and access to care. 2013. Available at: [https://www.aacap.org/App\\_Themes/AACAP/docs/Advocacy/policy\\_resources/cap\\_workforce\\_crisis\\_201305.pdf](https://www.aacap.org/App_Themes/AACAP/docs/Advocacy/policy_resources/cap_workforce_crisis_201305.pdf). Accessed February 12, 2019
- Whitney DG, Peterson MD. US national and state-level prevalence of mental health disorders and disparities of mental health care use in children [published online ahead of print February 11, 2019]. *JAMA Pediatr.* doi: 10.1001/jamapediatrics.2018.5399
- Merikangas KR, He JP, Burstein M, et al. Service utilization for lifetime mental disorders in U.S. adolescents: results of the National Comorbidity Survey-Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry.* 2011; 50(1):32–45
- Saloner B, Carson N, Cook BL. Episodes of mental health treatment among a nationally representative sample of children and adolescents. *Med Care Res Rev.* 2014;71(3):261–279

12. Burns BJ, Costello EJ, Angold A, et al. Children's mental health service use across service sectors. *Health Aff (Millwood)*. 1995;14(3):147–159
13. Wang PS, Berglund P, Olfson M, Pincus HA, Wells KB, Kessler RC. Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005; 62(6):603–613
14. Copeland WE, Wolke D, Shanahan L, Costello EJ. Adult functional outcomes of common childhood psychiatric problems: a prospective, longitudinal study. *JAMA Psychiatry*. 2015;72(9): 892–899
15. Committee on Psychosocial Aspects of Child and Family Health and Task Force on Mental Health. Policy statement—the future of pediatrics: mental health competencies for pediatric primary care. *Pediatrics*. 2009;124(1):410–421
16. American Academy of Child and Adolescent Psychiatry Committee on Health Care Access and Economics Task Force on Mental Health. Improving mental health services in primary care: reducing administrative and financial barriers to access and collaboration [published correction appears in *Pediatrics*. 2009;123(6):1611]. *Pediatrics*. 2009;123(4):1248–1251
17. American Academy of Child and Adolescent Psychiatry, Committee on Collaboration with Medical Professions. A guide to building collaborative mental health care partnerships in pediatric primary care. 2010. Available at: [www.aacap.org/App\\_Themes/AACAP/docs/clinical\\_practice\\_center/guide\\_to\\_building\\_collaborative\\_mental\\_health\\_care\\_partnerships.pdf](http://www.aacap.org/App_Themes/AACAP/docs/clinical_practice_center/guide_to_building_collaborative_mental_health_care_partnerships.pdf). Accessed February 12, 2019
18. American Academy of Child and Adolescent Psychiatry, Committee on Collaboration with Medical Professions, Committee on Community-based Systems of Care, Committee on Healthcare Access Economics. Best principles for integration of child psychiatry into the pediatric medical home. Available at: [www.aacap.org/App\\_Themes/AACAP/docs/clinical\\_practice\\_center/systems\\_of\\_care/best\\_principles\\_for\\_integration\\_of\\_child\\_psychiatry\\_into\\_the\\_pediatric\\_health\\_home\\_2012.pdf](http://www.aacap.org/App_Themes/AACAP/docs/clinical_practice_center/systems_of_care/best_principles_for_integration_of_child_psychiatry_into_the_pediatric_health_home_2012.pdf). Accessed February 12, 2019
19. Bitsko RH, Holbrook JR, Ghandour RM, et al. Epidemiology and impact of health care provider-diagnosed anxiety and depression among US children. *J Dev Behav Pediatr*. 2018;39(5):395–403
20. Visser SN, Danielson ML, Bitsko RH, et al. Trends in the parent-report of health care provider-diagnosed and medicated attention-deficit/hyperactivity disorder: United States, 2003–2011. *J Am Acad Child Adolesc Psychiatry*. 2014;53(1):34–46.e2
21. Zuckerbrot RA, Cheung A, Jensen PS, Stein REK, Laraque D; GLAD-PC Steering Group. Guidelines for adolescent depression in primary care (GLAD-PC): part I. Practice preparation, identification, assessment, and initial management. *Pediatrics*. 2018;141(3): e20174081
22. Cheung AH, Zuckerbrot RA, Jensen PS, Laraque D, Stein REK; GLAD-PC Steering Group. Guidelines for adolescent depression in primary care (GLAD-PC): part II. Treatment and ongoing management. *Pediatrics*. 2018;141(3): e20174082
23. Foy MJ, Kelleher KJ, Laraque-Arena D. Office and network systems to support mental health care. In: Foy MJ, ed. *Mental Health Care of Children and Adolescents: A Guide for Primary Care Clinicians*. Itasca, IL: American Academy of Pediatrics; 2018:73–126
24. Riddle MA, ed. *Pediatric Psychopharmacology for Primary Care*. Elk Grove Village, IL: American Academy of Pediatrics; 2016
25. Knapp P, Chait A, Pappadopulos E, Crystal S, Jensen PS; T-MAY Steering Group. Treatment of maladaptive aggression in youth: CERT guidelines I. Engagement, assessment, and management. *Pediatrics*. 2012;129(6). Available at: [www.pediatrics.org/cgi/content/full/129/6/e1562](http://www.pediatrics.org/cgi/content/full/129/6/e1562)
26. Scotto Rosato N, Correll CU, Pappadopulos E, Chait A, Crystal S, Jensen PS; Treatment of Maladaptive Aggressive in Youth Steering Committee. Treatment of maladaptive aggression in youth: CERT guidelines II. Treatments and ongoing management. *Pediatrics*. 2012;129(6). Available at: [www.pediatrics.org/cgi/content/full/129/6/e1577](http://www.pediatrics.org/cgi/content/full/129/6/e1577)
27. Wolraich M, Brown L, Brown RT, et al; Subcommittee on Attention-Deficit/Hyperactivity Disorder; Steering Committee on Quality Improvement and Management. ADHD: clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in children and adolescents. *Pediatrics*. 2011;128(5): 1007–1022
28. Foy JM; American Academy of Pediatrics Task Force on Mental Health. Enhancing pediatric mental health care: algorithms for primary care. *Pediatrics*. 2010;125(suppl 3):S109–S125
29. American Academy of Pediatrics. *Addressing Mental Health Concerns in Primary Care: A Clinician's Toolkit (CD-ROM)*. Elk Grove Village, IL: American Academy of Pediatrics; 2010
30. American Academy of Pediatrics. Implementing mental health priorities in practice. Available at: [https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Mental-Health/Pages/implementing\\_mental\\_health\\_priorities\\_in\\_practice.aspx](https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Mental-Health/Pages/implementing_mental_health_priorities_in_practice.aspx). Accessed February 12, 2019
31. Leaf PJ, Owens PL, Leventhal JM, et al. Pediatricians' training and identification and management of psychosocial problems. *Clin Pediatr (Phila)*. 2004;43(4):355–365
32. Heneghan A, Garner AS, Storfer-Isser A, Kortepeter K, Stein RE, Horwitz SM. Pediatricians' role in providing mental health care for children and adolescents: do pediatricians and child and adolescent psychiatrists agree? *J Dev Behav Pediatr*. 2008;29(4):262–269
33. Stein RE, Horwitz SM, Storfer-Isser A, Heneghan A, Olson L, Hoagwood KE. Do pediatricians think they are responsible for identification and management of child mental health problems? Results of the AAP periodic survey. *Ambul Pediatr*. 2008;8(1):11–17
34. Meadows T, Valleley R, Haack MK, Thorson R, Evans J. Physician "costs" in providing behavioral health in primary care. *Clin Pediatr (Phila)*. 2011;50(5): 447–455
35. Horwitz SM, Storfer-Isser A, Kerker BD, et al. Barriers to the identification and



- management of psychosocial problems: changes from 2004 to 2013. *Acad Pediatr*. 2015;15(6):613–620
36. Stein RE, Storfer-Isser A, Kerker BD, et al. Beyond ADHD: how well are we doing? *Acad Pediatr*. 2016;16(2):115–121
  37. Kolko DJ, Perrin E. The integration of behavioral health interventions in children's health care: services, science, and suggestions. *J Clin Child Adolesc Psychol*. 2014;43(2):216–228
  38. Njoroge WF, Hostutler CA, Schwartz BS, Mautone JA. Integrated behavioral health in pediatric primary care. *Curr Psychiatry Rep*. 2016;18(12):106
  39. Wagner EH, Austin BT, Von Korff M. Organizing care for patients with chronic illness. *Milbank Q*. 1996;74(4):511–544
  40. SAMHSA-HRSA Center for Integrated Health Solutions. Integrating behavioral health and primary care for children and youth – concepts and strategies. Available at: [www.integration.samhsa.gov/integrated-care-models/Overview\\_CIHS\\_Integrated\\_Care\\_Systems\\_for\\_Children.pdf](http://www.integration.samhsa.gov/integrated-care-models/Overview_CIHS_Integrated_Care_Systems_for_Children.pdf). Accessed February 12, 2019
  41. Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS. 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;169(8):790–804
  42. Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *Cochrane Database Syst Rev*. 2012;10:CD006525
  43. Gillies D, Buykx P, Parker AG, Hetrick SE. Consultation liaison in primary care for people with mental disorders. *Cochrane Database Syst Rev*. 2015;(9):CD007193
  44. Katzelnick DJ, Williams MD. Large-scale dissemination of collaborative care and implications for psychiatry. *Psychiatr Serv*. 2015;66(9):904–906
  45. Reiss-Brennan B, Brunisholz KD, Dredge C, et al. Association of integrated team-based care with health care quality, utilization, and cost. *JAMA*. 2016;316(8):826–834
  46. Gerrity M. *Evolving Models of Behavioral Health Integration: Evidence Update 2010-2015*. New York, NY: Milbank Memorial Fund; 2016
  47. Asarnow JR, 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;169(10):929–937
  48. Yu H, Kolko DJ, Torres E. Collaborative mental health care for pediatric behavior disorders in primary care: does it reduce mental health care costs? *Fam Syst Health*. 2017;35(1):46–57
  49. Germán M, Rinke ML, Gurney BA, et al. Comparing two models of integrated behavioral health programs in pediatric primary care. *Child Adolesc Psychiatr Clin N Am*. 2017;26(4):815–828
  50. Grimes KE, Creedon TB, Webster CR, Coffey SM, Hagan GN, Chow CM. Enhanced child psychiatry access and engagement via integrated care: a collaborative practice model with pediatrics. *Psychiatr Serv*. 2018;69(9):986–992
  51. Donabedian A. *The Methods and Findings of Quality Assessment and Monitoring: An Illustrated Analysis*. Ann Arbor, MI: Health Administration Press; 1985
  52. Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med*. 2014;12(6):573–576
  53. Wikipedia. List of Massachusetts locations by per capita income. Available at: [https://en.wikipedia.org/wiki/List\\_of\\_Massachusetts\\_locations\\_by\\_per\\_capita\\_income](https://en.wikipedia.org/wiki/List_of_Massachusetts_locations_by_per_capita_income). Accessed February 12, 2019
  54. Lyon AR, Stirman SW, Kerns SEU, Bruns EJ. Developing the mental health workforce: review and application of training approaches from multiple disciplines. *Adm Policy Ment Health*. 2011;38(4):238–253
  55. Gardner W, Lucas A, Kolko DJ, Campo JV. Comparison of the PSC-17 and alternative mental health screens in an at-risk primary care sample. *J Am Acad Child Adolesc Psychiatry*. 2007;46(5):611–618
  56. Wolraich ML, Lambert W, Doffing MA, Bickman L, Simmons T, Worley K. Psychometric properties of the Vanderbilt ADHD diagnostic parent rating scale in a referred population. *J Pediatr Psychol*. 2003;28(8):559–567
  57. Daviss WB, Birmaher B, Melhem NA, Axelson DA, Michaels SM, Brent DA. Criterion validity of the Mood and Feelings Questionnaire for depressive episodes in clinic and non-clinic subjects. *J Child Psychol Psychiatry*. 2006;47(9):927–934
  58. Richardson LP, McCauley E, Grossman DC, et al. Evaluation of the Patient Health Questionnaire-9 Item for detecting major depression among adolescents. *Pediatrics*. 2010;126(6):1117–1123
  59. Birmaher B, Khetarpal S, Brent D, et al. The Screen for Child Anxiety Related Emotional Disorders (SCARED): scale construction and psychometric characteristics. *J Am Acad Child Adolesc Psychiatry*. 1997;36(4):545–553
  60. Connolly SD, Bernstein GA; Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with anxiety disorders. *J Am Acad Child Adolesc Psychiatry*. 2007;46(2):267–283
  61. Pliszka S; AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry*. 2007;46(7):894–921
  62. Birmaher B, Brent D, Bernet W, et al; AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. *J Am Acad Child Adolesc Psychiatry*. 2007;46(11):1503–1526
  63. Massachusetts Child Psychiatry Access Program. Massachusetts Child Psychiatry Access Program. Available at: <http://mcpap.org>. Accessed February 12, 2019
  64. Substance Abuse and Mental Health Services Administration/Health Resources and Services Administration. A standard framework for levels of integrated healthcare and update throughout the document. 2013. Available at: [https://www.integration.samhsa.gov/integrated-care-models/A\\_](https://www.integration.samhsa.gov/integrated-care-models/A_)

- Standard\_Framework\_for\_Levels\_of\_Integrated\_Healthcare.pdf. Accessed February 12, 2019
65. Foy JM, Kelleher KJ, Laraque D; American Academy of Pediatrics Task Force on Mental Health. Enhancing pediatric mental health care: strategies for preparing a primary care practice. *Pediatrics*. 2010;125(suppl 3):S87–S108
  66. Maine Health Access Foundation. Site self assessment evaluation tool for the Maine health access foundation integration initiative. 2010. Available at: [https://integrationacademy.ahrq.gov/sites/default/files/measures/8\\_MEHAF\\_SSA.pdf](https://integrationacademy.ahrq.gov/sites/default/files/measures/8_MEHAF_SSA.pdf). Accessed February 12, 2019
  67. Walter HJ, Kacklousis G, Trudell EK, et al. Enhancing pediatricians' behavioral health competencies through child psychiatry consultation and education. *Clin Pediatr (Phila)*. 2018;57(8):958–969
  68. Penfold RB, Zhang F. Use of interrupted time series analysis in evaluating health care quality improvements. *Acad Pediatr*. 2013;13(suppl 6):S38–S44
  69. Wagner AK, Soumerai SB, Zhang F, Ross-Degnan D. Segmented regression analysis of interrupted time series studies in medication use research. *J Clin Pharm Ther*. 2002;27(4):299–309
  70. Shaffer D, Gould MS, Brasic J, et al. A children's global assessment scale (CGAS). *Arch Gen Psychiatry*. 1983;40(11):1228–1231
  71. Asarnow JR, Jaycox LH, Duan N, et al. Effectiveness of a quality improvement intervention for adolescent depression in primary care clinics: a randomized controlled trial. *JAMA*. 2005;293(3):311–319
  72. 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). Available at: [www.pediatrics.org/cgi/content/full/133/4/e981](http://www.pediatrics.org/cgi/content/full/133/4/e981)
  73. 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
  74. Sultan RS, Correll CU, Schoenbaum M, King M, Walkup JT, Olfson M. National patterns of commonly prescribed psychotropic medications to young people. *J Child Adolesc Psychopharmacol*. 2018;28(3):158–165
  75. World Health Organization. *Task Shifting to Tackle Health Worker Shortages*. Geneva, Switzerland: World Health Organization; 2007
  76. Davis MM, Gunn R, Gowen LK, Miller BF, Green LA, Cohen DJ. A qualitative study of patient experiences of care in integrated behavioral health and primary care settings: more similar than different. *Transl Behav Med*. 2018;8(5):649–659
  77. Schuyler D. Prescribing brief psychotherapy. *Prim Care Companion J Clin Psychiatry*. 2000;2(1):13–15
  78. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. *J Intern Med*. 2018;283(6):516–529
  79. OPENPediatrics. OPENPediatrics. Available at: <https://www.openpediatrics.org>. Accessed February 12, 2019
  80. Straus JH, Sarvet B. Behavioral health care for children: the Massachusetts child psychiatry access project. *Health Aff (Millwood)*. 2014;33(12):2153–2161
  81. Sarvet B, Gold J, Bostic JQ, et al. Improving access to mental health care for children: the Massachusetts Child Psychiatry Access Project. *Pediatrics*. 2010;126(6):1191–1200
  82. Pediatric Integrated Care Resource Center. Programs & Projects. Available at: <http://integratedcareforkids.org/programs/>. Accessed February 12, 2019