FOSTERING EFFECTIVE INTEGRATION OF BEHAVIORAL HEALTH AND PRIMARY CARE IN MASSACHUSETTS:

An Evaluation

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FOUNDATION MASSACHUSETTS

JSI

prepared for the
Blue Cross Blue Shield of Massachusetts Foundation by
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PHOTOS ON COVER (TOP TO BOTTOM):

- Brookline Community Mental Health Center *(photo © David Binder)*
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EXECUTIVE SUMMARY

In 2016, the Blue Cross Blue Shield of Massachusetts Foundation undertook a three-year initiative to increase access to integrated behavioral health and primary care services in the Commonwealth of Massachusetts, entitled Fostering Effective Integration (FEI). The Foundation also funded an evaluation of the FEI, which was awarded to John Snow, Inc. (JSI). This Executive Summary highlights the main findings from the FEI evaluation, and the full report follows. The evaluation questions are shown in the text box below.

FEI EVALUATION QUESTIONS

- **Does integrated behavioral health (IBH) care service expansion improve access to care (as measured by reach, service enrollment, service engagement, service intensity, and timeliness of integrated services)?**
- **What are the facilitating factors and challenges related to implementation of IBH?**
- **Do the health outcomes of people engaged with IBH services improve?**
- **What are the costs associated with IBH?**
- **What are the considerations around sustainability of IBH services?**

FEI GRANTEES

The Foundation selected eight grantees that had experience with integrated behavioral health (IBH) to expand integrated care to new populations or new settings. The grantees were diverse in terms of organizational setting, population served, and setting where IBH services were provided (Table 1).

TABLE 1. CHARACTERISTICS OF FUNDED ORGANIZATIONS

GRANTEE	ORGANIZATIONAL SETTING	POPULATION SERVED*	SETTING WHERE INTEGRATED SERVICES WERE PROVIDED
Brookline Center for Community Mental Health (Brookline)	Community mental health center (CMHC)	Complex	In patient's home or residential facility
Community Health Center of Cape Cod (Cape Cod)	Community health center (CHC)	Complex	In primary care
East Boston Neighborhood Health Center (East Boston)	CHC	Youth	In primary care
Hebrew SeniorLife (HSL)	Senior housing and health care	Seniors	In patient's home or residential facility
Lahey Health (Lahey)	Large health system network	Adult primary care population	In primary care
Lynn Community Health Center (Lynn)	CHC	Adult primary care population	In primary care
Pediatric Physicians' Organization at Children's (PPOC)	Large health system network	Youth with substance use disorder	In primary care
Vinfen of Plymouth (Vinfen)	CMHC	Complex	In patient's home or residential facility

* Complex patients had multiple co-morbidities, high service use, and a history of or current mental health symptoms. In the case of Cape Cod, this was a higher-risk subset of its primary care population in need of behavioral health services.

METHODOLOGY

In the early months of the evaluation, JSI worked with the grantees and the Foundation to finalize the evaluation design, which had both quantitative and qualitative components. A description of the core data set, contextual information collected, and the process of data collection and reporting are described below.

Core Data Set

ACCESS

For purposes of the evaluation, the *access* outcome is assessed through five proxy measures:

- ***Reach:*** number of people for whom integrated care was available
- ***Enrollment:*** number of patients who met IBH program eligibility criteria and accepted referral
- ***Engagement in integrated care:*** number of patients with at least one face-to-face visit with an integrated care provider
- ***Service intensity:*** number of services received from an integrated care provider and interactions with primary care
- ***Timeliness of integrated services:*** number of days to first integrated care provider visit

PATIENT OUTCOMES

Grantees were required to select an outcome measure of relevance for their specific program, as there was not one single outcome measure that would have been appropriate for all grantees, given differences in populations being served. Five of the eight grantees were able to track patient outcomes over time. Three were not able to for various reasons, including challenges with getting patient follow-up scores within the timeframe required for the evaluation and challenges with the outcome measures themselves (e.g., lack of sensitivity to change).

Three of the five grantees (HSL, Lahey, and Lynn) able to track and report on patient outcomes selected the *PHQ-9*, a depression screening and assessment tool, as their outcome measure.

The two remaining grantees that reported on outcomes (Brookline and Vinfen) selected the *Healthy Lives (HL5A) scale*. This scale was developed at Brookline and is currently undergoing validation. It is a provider assessment of a patient's status on five dimensions: physical and behavioral functioning, appropriate use of health services, access to services and provider relationships, basic physical/economic/social needs, and self-care/adherence.

COSTS

Costs associated with providing IBH services to expansion populations were captured in five categories: 1) screening and assessment, 2) direct services, 3) transition costs, 4) administration and support, and 5) other direct costs.

Contextual Data

Contextual data, including information on staffing changes, maturation of the projects, and implementation successes and challenges, were collected over the course of the initiative, through reviewing quarterly reports, conducting site visits, reviewing notes of site visits conducted by Foundation staff, conducting technical assistance conference calls, and attending grantee learning sessions (approximately quarterly). Additionally, the evaluation team collected patient success stories (from project managers and providers), perspectives regarding the financial sustainability of IBH (from finance managers), and reflections on lessons learned and integration moving forward (from program leadership) from each grantee.

Data Collection and Reporting Process

The evaluation team created a series of templates to capture access, outcome, and cost data from every grantee. Grantees completed the access and outcome templates twice per year (a total of five data submissions over the course of the evaluation), summarizing those patients whose follow-up was completed during the reporting period. The cost template was completed twice: once for calendar year 2016 costs and once for calendar year 2017 costs. Evaluation data collection started in May 2016 and ended in November 2018. Technical assistance was provided on data collection through a series of conference calls, site visits (when needed), and learning sessions convened by the Foundation.

EVALUATION HIGHLIGHTS

A summary of the evaluation findings related to access, patient outcomes, cost, innovation, and sustainability are provided below.

Access

The FEI Initiative resulted in improved *access* to IBH as demonstrated by the following:

- More than 60,000 people had the opportunity to receive IBH services through grantees providing services to an expanded population or to a new setting—referred to as the *reach* of the initiative;
- Over 5,000 patients were determined to be in need of IBH services (either through a formal screening process, through provider referral, and/or through self-referral) and accepted a referral to such services—referred to as *enrollment in IBH services*;
- Eighty percent (3,574 patients) of patients enrolled had at least one face-to-face visit with an integrated care provider—referred to as *engagement in IBH services*;
- Over 70 percent of engaged patients had two or more visits with an integrated care provider, with an average of 4.4 visits among engaged patients—referred to as *intensity of services*; and
- Among five grantees tracking timeliness, 56 percent of engaged patients were able to have a same-day (i.e., on same day of enrollment), face-to-face visit with an integrated care provider, and 80 percent of engaged patients were able to have a visit with an integrated provider within 14 days of enrollment—referred to as *timeliness of IBH services*.

Patient Outcomes

The three grantees that used the *PHQ-9* as an outcome measure demonstrated a reduction in depression symptoms in a subset of their patients (for whom it was relevant and for whom they were able to get both baseline and follow-up data). A total of 1,061 patients had on average a 4.3 drop in their *PHQ-9* scores over a six-month period and moved from a *PHQ-9* classification of typically *moderate* to typically *mild* depressive symptoms. For 535 patients at *high-risk of major depression* (a *PHQ-9* score of greater than 9 at baseline), there was an average change score of 9 points, with patients dropping one to two categories in *PHQ-9* classification of severity of depression symptoms.

The two community mental health service providers (Brookline and Vinfen) using the *HL5A scale* demonstrated on average marginal improvement. While the direction of the change is positive, the caveat is that because the *HL5A* has not yet been validated, it is difficult to fully interpret the meaning of this improvement.

Cost

The total average cost across grantees (including all cost components: screening and assessment, direct services, transition costs, administration and support, and other direct costs) was $2,169 per patient (range: $144 to $4,793) in 2016 and $1,925 per patient (range: $585 to $4,321). Grantees reported that the decline in costs from 2016 to 2017 was primarily a result of higher number of enrolled patients as IBH services grew and matured and a reduction in transition costs (e.g., staff training and systems required for program start up).

The annual cost per patient was higher among grantees that served patients in their homes or residential facilities and lower among grantees that provided services in a primary care setting. Screening and assessment costs increased considerably between years. When queried about these increases, grantee leadership noted that it was primarily due to working toward universal screening for behavioral health. The costs of direct services did not change significantly between years.

Some IBH costs are reimbursable through insurance, but others are not, which challenged grantees in terms of program sustainability. Grantees generally were able to receive reimbursement for direct services. Other essential services, such as case management, warm hand-offs, patient outreach and engagement, and interpretation services generally were not recovered through insurance reimbursement. Transition costs (e.g., start-up costs for establishing IBH services) also were not reimbursed.

Innovation

While an existing body of research demonstrates that an integrated service model, whereby behavioral health providers are co-located in primary care, results in improved patient outcomes, there is little evidence related to other models of integration. Given the diversity of grantees funded through the FEI Initiative, some innovative models were tested and resulted in substantial lessons learned by these implementing grantees. Specifically, the FEI Initiative:

- Assisted **linkages to primary care** for patients, such as those suffering with severe mental illness, whose main point of contact with the health system is the behavioral health system. This population is likely to go without primary and preventive care, but both Brookline and Vinfen demonstrated linkages with primary care for patients enrolled in their IBH programs.
- Showed strong **engagement in IBH services and intensity of IBH service use by adolescents**, including substance use services at East Boston and PPOC.
- Improved **access (as measured by enrollment, engagement, and intensity of service delivery) to behavioral health care for an older population** receiving health services in their home or in an institutional setting, where this service was not previously provided (HSL). These patients experienced a clinically significant decline in their depression symptoms over a six-month period.
- Assisted Vinfen in testing a health promotion application delivered via smart phone for its patients. Vinfen reported high patient satisfaction related to using this application.
- Improved the capacity of grantees to collect and use **quality improvement data**. Several grantees noted that the tracking of evaluation data enabled them to operationalize and use data to improve their programs over the course of their grants. The outcome monitoring done by five of the grantees is especially significant because measurement of health improvement in behavioral health is an ongoing challenge.

Sustainability

One of the more important findings related to the FEI is that all eight grantees have plans for sustaining their IBH services. This means that each grantee believes IBH works in their organization and benefits their patients. Appropriate reimbursement is the challenge, but several grantees are working with the State's new accountable care organizations to provide IBH services. Others have received additional grant funding to continue. Some noted that they are continuing because it is the right thing to do. Three grantees (Brookline, East Boston, and PPOC) have roles in educating other programs on integration, a channel for further sharing of what they have learned through FEI.

CONCLUSION

The FEI Initiative made significant contributions to IBH in the Commonwealth of Massachusetts. Improved access to behavioral health was demonstrated as was improvement in patient outcomes for the subset of grantees able to track such data. FEI also contributed to organizational lessons related to costs and implementation of integrated care; grantees will draw from these and share them with other health care professionals and organizations interested in IBH services. The diversity of FEI grantees also contributes to IBH services delivery beyond the more traditional model of co-location of behavioral health in primary care. All eight grantees found FEI work feasible within their organizations and of benefit to their patients, underscoring their collective commitment to sustaining all that they have established thus far.

FULL REPORT

FOSTERING EFFECTIVE INTEGRATION OF BEHAVIORAL HEALTH AND PRIMARY CARE IN MASSACHUSETTS:

An Evaluation

INTRODUCTION

In 2016, the Blue Cross Blue Shield of Massachusetts Foundation undertook a three-year initiative to increase access to integrated behavioral health (IBH) and primary care services, entitled Fostering Effective Integration (FEI). The Foundation funded eight grantees in Massachusetts with significant existing integration experience to either expand integrated services to a new patient population or to a new practice or community setting. The Foundation also funded an evaluation of the FEI, which was awarded to John Snow, Inc. (JSI). This report presents the main findings from the FEI evaluation.

Prior to funding the FEI Initiative, the Foundation undertook a planning year in 2015, during which 10 organizations delivering IBH were awarded funding by the Foundation to identify success factors, challenges, and opportunities for change. At that point in time, the research had shown overwhelmingly that integrating behavioral health and primary care improved health outcomes for adults with depression and anxiety.[1,2] However, the research was based primarily on the Collaborative Care Model (CCM), a team-based and stepped approach to behavioral health through co-locating behavioral health providers within primary care practices. Very little was known about non-co-located models, outcomes for integrated care beyond depression and anxiety, costs of integrated models, and overcoming the complexities of implementation.

The FEI Initiative funded organizations already experienced in integration to expand services to a new setting or new population.

The findings from the evaluation of the Foundation's planning year indicated that grantees were invested in the need to better integrate behavioral health and primary care, and that they were adapting and tailoring integrated care to meet their patient populations' needs within the context of their organizations. Additionally, some grantees were focused on populations who may not even show up in primary care, such as persons with serious mental illness, frail or homebound elders, and persons with multiple co-morbidities, populations whose needs were not adequately addressed through the traditional models of integration. Overall, grantees were committed to the concept of integrating care and were experimenting with different models for delivering these services; however, they had little data to show whether their efforts were having an impact.

Using these findings, the Foundation decided to continue with a multi-year grant program of organizations that were already experienced in implementing some model of integrated care. Thus, the Foundation was not focused on whether integration worked—the research had proved that it does in most configurations—but rather learning more about the implementation aspects of integrating care and whether integrated care already being delivered could be expanded to new settings or new populations with positive results.

In 2016, the Foundation funded eight organizations (referred to as grantees throughout this report) to increase access to IBH through expanding their experience with integration to other populations or other settings. Additionally, the Foundation funded JSI to conduct an evaluation to address the following questions:

- Does IBH care service expansion improve access to care (as measured by reach, service enrollment, service engagement, intensity of services, and timeliness of integrated services)?

1 Asarnow, JR, Rozenman M, Wiblin J, Zeltzer L. 2015 "Integrated Medical-Behavioral Healthcare Compared with Usual Primary Care for Child and Adolescent Behavioral Health, A Meta-Analysis." *JAMA Pediatrics.*169(10): 929–937.

2 Unutzer J. Katon W, Callahan C, et al. for the IMPACT Investigators. 2002. "Collaborative Care Management of Late-Life Depression In the Primary Care Setting. *JAMA.* 288(22): 2836–2845.

- What are the facilitating factors and challenges related to implementation of IBH?
- Do the health outcomes of people engaged with IBH services improve?
- What are the costs associated with IBH?
- What are the considerations around sustainability of IBH services?

This report details the findings of the evaluation. It begins with a description of the eight grantees followed by a methodology section. The findings are reported in order of the evaluation questions (access, outcomes, costs, sustainability), with facilitating factors and challenges noted when relevant. A discussion section describes the overall contribution of the FEI.

FEI GRANTEES

The Foundation selected a diverse group of grantees for the FEI Initiative, considering organizational setting, population served, and setting where IBH services were provided. Three grantees were community health centers:

- Community Health Center of Cape Cod (Cape Cod)
- East Boston Neighborhood Health Center (East Boston)
- Lynn Community Health Center (Lynn)

Two were community mental health providers:

- Brookline Center for Community Mental Health (Brookline)
- Vinfen of Plymouth (Vinfen)

Two were part of large health system networks:

- Lahey Health (Lahey)
- Pediatric Physicians' Organization at Children's (PPOC)

One was an organization providing housing and health care to seniors:

- Hebrew SeniorLife (HSL)

FEI grantees were diverse in terms of organizational setting (community health center, community mental health center, health care network, and senior housing and health), where integrated services were provided (in primary care versus in the home/residential facility), and age focus (general adult population, youth, seniors).

Cape Cod, Lahey, and Lynn had co-located behavioral health providers in their primary care settings. Lahey and Lynn made integrated services available to all of their primary care patients whom either through screening or provider referral identified as having a need for behavioral health services. Cape Cod targeted their program to the highest risk population as a subset of its population in need of behavioral health services. This subset of patients had multiple co-morbidities, high service use, and a history of or current mental health symptoms; for purposes of this report, this population is referred to as *complex*.

Similarly, East Boston and PPOC had behavior health providers co-located in primary or pediatric practice settings, but both were focused on youth. East Boston focused on youth with behavioral health issues, both mental health and substance use, whereas PPOC focused on youth at risk for or with substance use disorder. PPOC's program was unique among grantees in that it spent the first year training providers in the practices about integrated care and only started providing integrated services in year two of the three-year grant period.

Brookline formed a partnership with Beth Israel Deaconess Medical Center and worked with two of its primary care sites to identify *high-risk* adults, meaning that they had three or more chronic conditions, mental health issues, and high socioeconomic needs, for integrated care. For those identified patients, Brookline provided community

health workers who visited patients in their homes or residential facilities to provide support and link them to a variety of necessary resources—medical treatment, preventive care, and social services.

Vinfen worked with patients diagnosed as having a serious mental illness and living in group homes, or independently, in the Plymouth area and accessing group sessions and day programs. Like Brookline, they used community health workers to go into patients' homes or residential facilities to offer general support and link them to needed health and social services. A unique feature of Vinfen's program was the promotion of a smart phone app developed with Wellframe for health monitoring, health promotion, and self-management that was offered to all its patients. Vinfen tracked patient utilization of the app and health status and reported on its findings, in addition to the other required evaluation data, to the FEI evaluation team. Vinfen was primarily responsible for creating the behavioral health content included in the app; and the organization received an innovation award from the National Council on Behavioral Health.

HSL behavioral health providers offered *Healthy IDEAS*, a manualized intervention, to seniors residing in senior supportive housing facilities, at home post-discharge, or through primary care provider referral. *Healthy IDEAS* helps seniors with depression (including seniors with dementia) identify and engage in simple and pleasurable activities to improve mood.

Brookline, Cape Cod, HSL, and Vinfen IBH programs were categorized as serving complex populations versus East Boston, Lahey, Lynn, and PPOC's programs that were categorized as serving a general primary care population in need of behavioral health services. The evaluation team examined these subsets of programs, as well as programs serving youth versus adults and programs serving patients in primary care versus in home or residential facility to more fully describe findings.

Table 1 summarizes the key features of the eight grantees. Additionally, Appendix A contains a more detailed table that describes the eight FEI grantees in terms of their IBH expansion populations compared to their overall populations, the settings where (IBH) services were received, and a brief description of each grantee's model of integration.

TABLE 1. KEY FEATURES OF FEI GRANTEES

	BROOKLINE	CAPE COD	EAST BOSTON	HSL	LAHEY	LYNN	PPOC	VINFEN
ORGANIZATION TYPE								
Community Health Center		●	●			●		
Community Mental Health Center	●							●
Health System Network					●		●	
Senior Housing & Health				●				
EXPANSION POPULATION*								
Complex	●	●		●				●
General BH in Primary Care			●		●	●	●	
SETTING WHERE INTEGRATED CARE SERVICES WERE PROVIDED								
Primary Care		●	●		●	●	●	
Home/Residential Facility	●			●				●
AGE FOCUS**								
General Adult	●	●			●	●		●
Youth			●				●	
Seniors				●				

* Grantees whose expansion populations were focused on patients with multiple physical and mental health co-morbidities are classified as "complex." Grantees whose expansion populations were open to all patients served in primary care are classified as "general BH in primary care."

** Programs serving a general adult population may have served seniors, but seniors were not a specific focus of their programs.

FEI EVALUATION DESIGN AND METHODS

In the early months of the evaluation, JSI worked with the grantees and the Foundation to identify a core data set specific to each evaluation question (access, outcomes, and cost). Evaluation data collection started in May 2016 and ended in November 2018.

ACCESS

The evaluation team, the Foundation, and the grantees grappled with how to assess whether *access* to IBH improved as a result of the FEI Initiative. Given the prospective and observational nature of the evaluation and the lack of a control group, proxy measures—reach, enrollment in IBH services, engagement in IBH services, service intensity, and timeliness of service delivery—that are indicative of improved access were established. This is illustrated through a logic model developed as an overall framework for the evaluation (see Appendix B).

Through assessing these proxy measures for access, the evaluation team aimed to determine if access to IBH was improved through the FEI. Grantees were required to track the core access data set for each enrolled patient for six months to assess service use over time.

Access is assessed through examining:

- **REACH: number of people for whom integrated care was available**
- **ENROLLMENT: number of patients who met IBH eligibility criteria and accepted referral**
- **ENGAGEMENT in integrated care: number of patients with at least one face-to-face visit with an integrated care provider**
- **SERVICE INTENSITY: number of services received from an integrated care provider and interactions with primary care**
- **TIMELINESS OF INTEGRATED SERVICES: number of days to first integrated care provider visit**

PATIENT OUTCOMES

Each grantee also selected a patient outcome measure of relevance to its program, measured at the time of enrollment (baseline) and 6-months hence (+/- 6 weeks). (Grantees were encouraged to select a measure of relevance for their specific program, as there was not one single outcome measure that would have been appropriate for all grantees.) Four grantees (East Boston, HSL, Lahey, and Lynn) chose the *PHQ-9*, a depression screening and assessment tool. One grantee (Cape Cod) chose the *My Mood Monitor (M3)*,[3] a screen for depression, anxiety, bipolar, and post-traumatic stress disorder.

The two community mental health center grantees (Brookline and Vinfen) selected the *Healthy Lives 5 (HL5A scale)*. This scale was developed at Brookline and is currently undergoing validation. It is a provider assessment of a patient's status on five dimensions: physical and behavioral functioning, appropriate use of health services, access to services and provider relationships, basic physical/economic/social needs, and self-care/adherence. PPOC practices adopted the *S2BI*, a validated screening tool for substance youth in young adults.[4]

Three grantees (Cape Cod, East Boston, and PPOC) worked hard to assess outcomes but were ultimately unable to do so. The *My Mood Monitor (M3)* selected by Cape Cod was promising because it captures symptom ratings for several conditions (depression, anxiety, PTSD, bipolar) as well as functional status. Even though the developer published a validation study of the *M3*, Cape Cod and the evaluation team found that it was not sensitive to

3 Gaynes BN, DeVeaugh-Geiss J, Weir S, Gu H, MacPherson C, Schulberg HC, Culpepper L, Rubinow DR. Feasibility and Diagnostic Validity of the M3 Checklist: A Brief Self-Rated Screen for Depressive, BiPolar, Anxiety, and Post-Traumatic Stress Disorders in Primary Care. (2010) *Ann Fam Med.* 8(2): 160-169.

4 Levy, Sharon, Weiss, R., Sherritt, L., Ziemnik, R., Spalding, A., Van Hook, S., & Shrier, L. A. (2014). An Electronic Screen for Triaging Adolescent Substance Use by Risk Levels. JAMA Pediatrics. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/25070067.

change over time. This issue, plus difficulty completing the follow-up assessments, made the data not useful for the evaluation.

There is a dearth of published and validated behavioral health outcome assessments for children. East Boston tried to implement the *PHQ-9*, but it is a better tool for adults. Ultimately, East Boston could not find an adequate assessment tool that was acceptable to pediatricians and behavioral health providers. PPOC's data coordinator had limited access to health record data for participating pediatric practices and was unable to provide outcomes data.

COSTS

Costs associated with providing IBH services to expansion populations were captured in five categories: 1) screening and assessment, 2) direct services, 3) transition costs, 4) administration and support, and 5) other direct costs. This model for costs was drawn from the Substance Abuse Mental Health Services Administration and Health Resources and Services Administration (SAMHSA/HRSA) integrated behavioral health cost model.[5] Costs were based on time spent by staff doing particular activities (screening and assessment, providing direct services, conducting administration and support activities, and conducting activities association with transition to IBH) multiplied by staff salaries plus fringe benefits for typical staff members engaged in these activities.

CONTEXTUAL DATA

Contextual data, including information on staffing changes, maturation of the projects, and implementation successes and challenges, were collected over the course of the initiative, through reviewing quarterly reports, conducting site visits, reviewing notes of site visits conducted by Foundation staff, conducting technical assistance conference calls, and attending grantee learning sessions. Additionally, the evaluation team collected patient success stories (from project managers and providers), perspectives regarding the financial sustainability of IBH (from finance managers), and leadership reflections on lessons learned and integration moving forward (from program leadership) from each grantee. Highlights from these qualitative interviews are captured throughout this document.

The evaluation team created a series of templates to capture service use, outcome, and cost data from every grantee. Grantees completed the service use and outcome templates twice per year (a total of five data submissions over the course of the evaluation), summarizing those patients whose follow-up was completed during the reporting period. The cost template was completed twice: once for calendar year 2016 costs and once for calendar year 2017 costs. Technical assistance was provided on data collection through a series of conference calls, site visits (when needed), and routine (approximately quarterly) learning sessions convened by the Foundation.

5 https://www.integration.samhsa.gov/financing/The_Business_Case_for_Behavioral_Health_Care_Monograph.pdf (accessed 4/3/2019).

FINDINGS

The findings section is organized by access, outcomes, costs, and sustainability, consistent with the evaluation questions.

ACCESS

For purposes of the evaluation, access is defined as patients reached, enrollment in IBH services, engagement in integrated services, intensity of IBH services, and timeliness of IBH services. Findings for each are described below.

Reach

Through the FEI Initiative, an estimated additional 60,000 plus people had the opportunity to use IBH services if needed. Reach refers to the estimated number of persons in the expanded populations or programs to be served through the FEI Initiative. Not all of these persons are in need of IBH services, but through screening, provider referral, and/or self-referral, if there was a need, they could have been referred to and engaged in such services (Table 2).

TABLE 2. POTENTIAL REACH OF FEI

	PATIENTS WITH OPPORTUNITY TO RECEIVE INTEGRATED SERVICES	DESCRIPTION OF POTENTIAL REACH POPULATION
BROOKLINE	615	Approximate annual number of patient records in collaborating primary care sites reviewed by Brookline to determine eligibility for IBH services in conjunction with primary care providers
CAPE COD	11,791	Approximate annual number of patients screened for behavioral health
EAST BOSTON	13,293	Approximate annual number of youth screened for behavioral health
HSL	2,251	Approximate annual number of residents in supportive housing facilities or receiving in-home services from HSL, who could be screened for depression or receive a provider referral to HSL's IBH program
LAHEY	10,401	Approximate annual number of patients screened for depression
LYNN	17,326	Approximate annual number of patients who could be screened, provider referred, or self-referred for IBH services
PPOC	4,587	Approximate number of youth in practices where PPOC was introducing IBH
VINFEN	153	Approximate number of Department of Mental Health-eligible patients living independently or in group homes in Plymouth area
TOTAL REACH	**60,417**	

Reach is an estimate, and the estimate assumes that all patients in the expanded population were screened for IBH services. While grantees were working toward universal screening as part of their FEI activities, it was not achieved by all grantees. Over the course of the FEI Initiative, grantees developed protocols and changes to work-flows to incorporate formal screening tools for more comprehensive identification of symptomatic patients, with some examples highlighted below:

- HSL screening practices required extensive training. Home care nurses had to integrate depression screening into work-up and treatment planning with each patient. They determined which depression symptom tool to use based on the dementia status of the patient (*PHQ-9* versus *Cornell scale* for depression in dementia).
- Lahey patients were given a *stress questionnaire*, comprised of three standard instruments (*PHQ-9* for depression, *GAD-7* for anxiety, *AUDIT* for at-risk drinking) at annual primary care visits.

- Lynn adopted *SBIRT* screening (*PHQ-2/PHQ-9* for depression and *AUDIT/DAST* for substance use) at annual primary care visits.
- Cape Cod enhanced their existing annual behavioral health screening for patients with complex needs (as determined by the *Minnesota Tiering System*) by adding mental health criteria. They incorporated *M3* screening results, when available, and a review of medical history for prior mental health diagnoses.
- PPOC was implementing a custom designed substance use screening tool.

BROOKLINE PATIENT SUCCESS STORY

Jay is in his mid-40s and lives in a group home. He has been diagnosed with autism spectrum and bipolar disorder. His most debilitating issue was foot ulcers, which were recurring and kept Jay stuck in a vicious cycle of missing work and becoming isolated from others. Jay's relationship with his medical providers had been fraught with complications and miscommunications. Jay's Brookline integrated care providers worked hard to gain his trust. The team was there to mediate and explain to providers how to work with Jay and support him when things went wrong. Jay eventually underwent podiatric surgery, and he is currently ulcer-free. He is back at work and functioning independently—a win for the Brookline team that worked with him for 18 months through many challenges. "We have to ride with the person rather than being thrown off every time there's a bump in the road," according to a Brookline integrated care provider.

Enrollment

Over 5,000 people (5,284) enrolled in IBH services. Enrolled patients met the criteria and accepted their providers' referrals into IBH services (Table 3). Nearly one-third of enrolled individuals (1,692) were adolescents and young adults. Over 600 (621) were complex, i.e., those who had multiple medical and behavioral comorbidities. Over the entire initiative, the vast majority of patients (94%) served through the FEI Initiative were seen in primary care, and two-thirds (3,592) were adult primary care patients.

Table 3 shows that enrollment across grantees varied, primarily based on population being served. Grantees that expanded services to a broad primary care population had greater enrollment, whereas grantees that served a more narrowly defined, and complex population had lower enrollment. Brookline, Cape Cod, HSL, and Vinfen's models were designed to provide intense services to high-risk populations, whereas the remaining grantees served a broader primary care population, generally through a brief intervention approach. Grantees classified as serving complex patients engaged with patients generally over a long period of time, whereas grantees serving a general primary care population had a time-limited engagement with patients.

TABLE 3. FEI ENROLLMENT

	# OF PATIENTS ENROLLED*	% OF TOTAL FEI ENROLLMENT
BROOKLINE	56	1%
CAPE COD	285	5%
EAST BOSTON	1,630	31%
HSL	147	3%
LAHEY	1,139	22%
LYNN	1,832	35%
PPOC	62	1%
VINFEN	133	3%
TOTAL ENROLLMENT	**5,284**	

	# OF PATIENTS ENROLLED*	% OF TOTAL FEI ENROLLMENT
BY EXPANSION POPULATION*		
Complex	621	12%
General BH in Primary Care	4,663	88%
BY SETTING		
In Primary Care	4,948	94%
In Home/Residential Facility	336	6%
BY AGE**		
Adults	3,592	68%
Youth	1,692	32%

* Enrolled from May 2016 through October 2018.

** HSL served seniors exclusively. Because grantees serving adult populations also served seniors, they were not tracked separately. Thus, HSL's numbers were added into the "adult" population category.

PPOC's reach is low for two reasons. First, each participating practice was required to complete a year-long, accredited learning community program focused on integrated care and substance use before beginning to enroll patients (thus, only two years of data are included rather than three). Second, their expansion population was highly targeted, focusing on substance-using young people primarily ages 13 through 21.

Engagement in IBH Services

Eighty percent (80%) of enrolled patients in the FEI Initiative engaged in IBH services. Engagement in IBH services for purposes of the evaluation was defined as having at least one face-to-face encounter with an *integrated health provider*. In most cases, this was a behavioral health provider, such as a licensed clinical social worker or a professional with another kind of behavioral health license. Brookline and Vinfen used community health workers as their integrated providers.

As shown in Table 4, with the exception of Cape Cod, all grantees had at least 72% of their patients who enrolled in IBH actually engage in IBH services. The five grantees providing IBH in a primary care setting achieved, on average, 80% of their patients engaging, whereas the three grantees providing IBH in patients' home or residential facilities achieved, on average, 95% of their patients engaging. The general primary care population engaged at a higher rate than the complex populations (83% vs. 60%), and adults engaged in IBH at a higher percentage than youth (84% vs. 72%).

TABLE 4. ENGAGEMENT IN INTEGRATED CARE (PERCENT OF PATIENTS ENROLLED IN INTEGRATED CARE WHO HAD AT LEAST ONE FACE-TO-FACE (F2F) VISIT WITH AN INTEGRATED CARE PROVIDER)

	# OF PATIENTS*	% (#) OF PATIENTS WITH AT LEAST ONE F2F VISIT WITH INTEGRATED PROVIDER
BROOKLINE	41	95% (39)
CAPE COD	275	35% (96)
EAST BOSTON	1,317	72% (946)
HSL	98	92% (90)
LAHEY	902	72% (650)
LYNN	1,684	97% (1,641)
PPOC	62	77% (48)
VINFEN	64	100% (64)
GRAND TOTAL	**4,443**	**80% (3,574)**

	# OF PATIENTS*	% (#) OF PATIENTS WITH AT LEAST ONE F2F VISIT WITH INTEGRATED PROVIDER
BY EXPANSION POPULATION*		
Complex	478	60% (287)
General BH in Primary Care	3,965	83% (3,291)
BY SETTING		
In Primary Care	4,240	80% (3,381)
In Home/Residential Facility	203	95% (193)
BY AGE		
Adults	3,064	84% (2,580)
Youth	1,379	72% (994)

* The number of patients in Table 4 is less than the number reported in Table 3.Table 4 represents patients who were enrolled on or before April 30, 2018, and, therefore, had enough time to accrue six months of evaluation data (service use and outcomes) before the FEI evaluation data collection period came to an end in October 2018.

The treatment gap between those who need behavioral health services and those who actually receive behavioral health services is an underpinning rationale for providing IBH services. A 2019 report, entitled *The State of Mental Health in America*,[6] notes that in Massachusetts, there is a 48.6% *treatment gap* (i.e., the number of adults with any mental illness who did not receive treatment).[7] The treatment gap for youth is even greater: In Massachusetts, 53.8% of youth with major depressive episode,[8] and 89.2% of youth nationally with substance youth disorder are

6 Mental Health America. The State of Mental Health in America 2019. Alexandria, VA. http://www.mentalhealthamerica.net/issues/state-mental-health-america (accessed on 4/22/19).

7 Ibid, page 20.

8 Ibid, page 24.

estimated to not obtain needed services.[9] While these numbers are not fully comparable to the FEI evaluation findings, given differences in definitions and methodologies, they do convey a sense of the magnitude of the treatment gap. Additionally, the engagement results of the FEI grantees indicate that they were able to engage patients in treatment, an initial step to closing the treatment gap.

Service Intensity

Patients engaged in integrated care services had 4.4 visits, on average, with an integrated care provider and remained engaged with primary care over a six-month period. While there is no established baseline for which to compare, this intensity measure demonstrates that patients remained engaged with IBH services over the six-month period of measurement. Table 5 shows that the average number of visits was higher for patients served through the three grantees providing integrated services in the home or residential facility (an average of 9.2 compared to 4.1) and higher for adults compared to youth (an average of 5.3 compared to 2.2). Of note, Cape Cod's average was 7.1 integrated care visits over a six-month period. This indicates a high intensity of integrated care services provided to a subset of patients identified as very high risk rather than a more general primary care population in need of behavioral health services as seen by the other organizations providing integrated services in primary care settings.

Community health workers serving as integrated care providers at Brookline and Vinfen stayed in close contact with patients between visits, averaging over 19 calls/patient at Brookline and over seven calls/patient at Vinfen over a six-month period.

TABLE 5. INTEGRATED CARE SERVICES INTENSITY FOR PATIENTS WHO ENGAGED IN INTEGRATED BEHAVIORAL HEALTH SERVICES

	# OF ENGAGED PATIENTS*	AVERAGE # OF INTEGRATED CARE VISITS PER ENGAGED PATIENT OVER 6-MONTH PERIOD
BROOKLINE	39	6.8
CAPE COD	96	7.1
EAST BOSTON	946	2.1
HSL	90	5.2
LAHEY	650	4.0
LYNN	1,641	5.2
PPOC	48	4.2
VINFEN	64	1.9
GRAND TOTAL	**3,574**	**4.4**

	# OF ENGAGED PATIENTS*	AVERAGE # OF INTEGRATED CARE VISITS PER ENGAGED PATIENT OVER 6-MONTH PERIOD
BY SETTING		
In Primary Care	3,381	4.1
In Home/Residential Facility	193	9.2
BY AGE		
Adults	2,580	5.3
Youth	994	2.2

* Engaged patients = number of patients who had at least one visit with an integrated care provider.

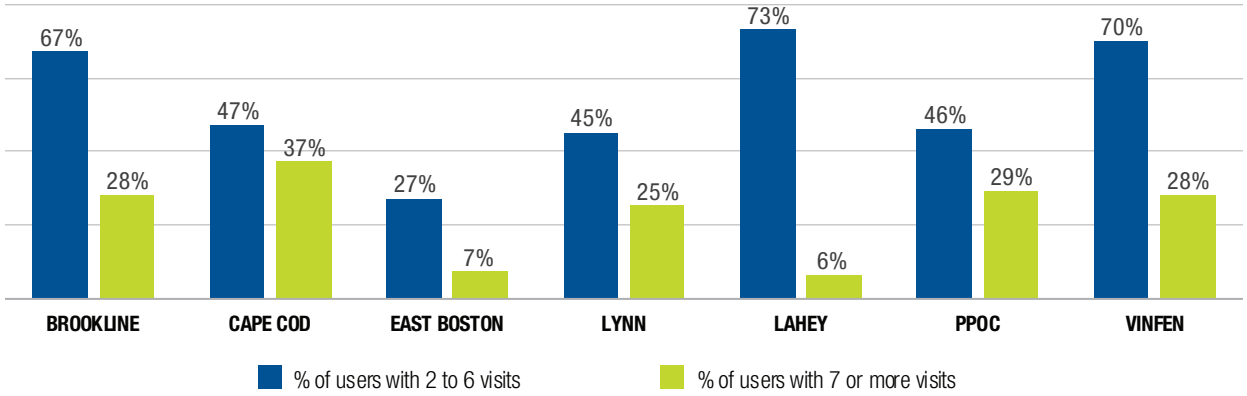
Figure 1 shows that the majority (over 70%) of engaged patients had at least two visits with an integrated care provider (typically between two and six face-to-face visits). As shown, there was a significant number of patients who had a very high number of integrated care visits (seven or more over a six-month enrollment period).

Integrated behavioral health is predicated on collaboration between primary care and behavioral health. Patients enrolled in integrated care and receiving services in a primary care setting had on average 3.7 primary care visits in a six-month period.

9 Lipari, R. N., Park-Lee, E., and Van Horn, S. *America's need for and receipt of substance use treatment in 2015.* The CBHSQ Report: September 29, 2016. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.

For the three grantees providing integrated services in the home or residential facility, part of the integrated care provider's role was to communicate with their patient's primary care provider. For Brookline, there were on average 20.8 of these contacts per patient over a six-month period; for Vinfen, the average was 6.8. HSL communicated with the primary care provider for 61 percent of its integrated care patients.[10] There is no benchmark to compare results, but the data do indicate that patients were indeed receiving both primary care and behavioral health services during the time period tracked.

FIGURE 1. VISIT FREQUENCY WITH BH PROVIDERS OR COMMUNITY HEALTH WORKERS (AMONG THOSE WHO HAD AT LEAST ONE FACE-TO-FACE VISIT)



Note: HSL did not track this process measure and therefore is excluded from the figure.

*Lynn results are based on patients enrolled after November 2016, when it began tracking this measure accurately.

Timeliness

Timeliness of initial visit with an integrated care provider varied across grantees and, in certain circumstances, was dependent on their service model and resulting patient flow. Timeliness is defined as the number of days from the date of referral to an integrated care provider to the date of the first face-to-face contact.

Five grantees collected and reported on timeliness (the notes in Table 6 explain the reasons for this). Over 90% of East Boston's patients (all youth) had a same-day appointment. Staff noted that this was because they had invested heavily in IBH training with an outside consultant group,[11] which helped them re-design workflows to make *warm hand-offs* (i.e., where a primary care provider introduces a patient directly to the behavioral health provider during the primary care appointment) the norm. In the case of East Boston, not only was there a warm hand-off but also a same-day appointment with a behavioral health provider. Lynn also emphasized warm hand-offs and was able to accommodate them 39% of the time. Warm hand-offs are challenging to implement and depend on integrated care provider availability as well as patient flow and primary care provider discretion. Both Lynn and Vinfen were able to accommodate an integrated care provider visit (a behavioral health provider in the case of Lynn and a community health worker in Vinfen's case) within a week's time. The initial appointment took over two weeks for most Brookline and Cape Cod patients.

At Vinfen, 68 patients used the smart phone application (app) for motivation/activation. Patients were given the app and a smart phone, if needed, for six months (about 183 days). On average, patients used the app 111 days (61% of the 183 days). The most common use of the app was the medication reminder feature, but physical activity, educational surveys, text messaging with a Vinfen case manager, and other reminders were also popular.

10 HSL tracked the number of patients for whom the primary care provider was contacted versus Brookline and Vinfen, which tracked the total number of primary care contacts for each patient.

11 East Boston drew on Cherokee Health's Integrated Care Academy. https://www.cherokeehealth.com/professional-training/integrated-care-training-academy (accessed 4/25/19).

TABLE 6. TIMELINESS OF INITIAL VISIT WITH AN INTEGRATED CARE PROVIDER

	# OF PATIENTS WITH AT LEAST ONE IBH VISIT	DAYS TO INTEGRATED CARE PROVIDER APPOINTMENT			
		% (#) SAME DAY	% (#) 1–7 DAYS	% (#) 8–14 DAYS	% (#) ≥15 DAYS
BROOKLINE	39	0% (0)	13% (5)	15% (6)	72% (28)
CAPE COD	96*	5% (5)	22% (21)	18% (17)	55% (53)
EAST BOSTON	946	91% (857)	4% (37)	3% (25)	3% (27)
LYNN	1,376**	39% (535)	21% (283)	13% (184)	27% (374)
VINFEN	64	17% (11)	39% (25)	19% (12)	25% (16)
GRAND TOTAL	**2,521**	**56% (1,408)**	**15% (371)**	**10% (244)**	**20% (498)**

Note: HSL, Lahey, and PPOC are excluded from this table. HSL did not have information about referrals; Lahey had inconsistencies in this data; and PPOC was not able to abstract this information from their data systems

* Timeliness-of-visit information was only available for 96 of 98 Cape Cod users.

** Lahey's Blue & Green teams data from November 2016–April 2017 are not included due to inconsistencies.

PATIENT OUTCOMES

For the five grantees able to collect outcome data, all demonstrated that patient outcomes improved over time. As noted in the methodology section, only five of the eight funded grantees were able to collect outcome data. Three of these (HSL, Lahey, and Lynn) used the *PHQ-9* to monitor depression outcomes and were able to collect initial and follow-up scores on 1,061 patients, or about 45% of the patients (Table 7a). Two grantees (Brookline and Vinfen) used the *HL5A* and collected initial and follow-up scores on 100 patients, or 97% of patients (Table 7b).

TABLE 7a. PHQ-9 DEPRESSION OUTCOME DATA COLLECTION

	# PATIENTS WITH INITIAL AND FOLLOW-UP SCORES	# PATIENTS ENGAGED IN IBH	% WITH BOTH INITIAL AND FOLLOW-UP SCORES AMONG THOSE WHO ENGAGED IN IBH
HSL	76	90	84%
LAHEY	388	650	60%
LYNN	597	1,641	36%
OVERALL	**1,061**	**2,381**	**45%**

TABLE 7b. HL5A OUTCOME DATA COLLECTION

	# PATIENTS WITH INITIAL AND FOLLOW-UP SCORES	# PATIENTS ENGAGED IN IBH	% WITH BOTH INITIAL AND FOLLOW-UP SCORES AMONG THOSE WHO ENGAGED IN IBH
BROOKLINE	36	39	92%
VINFEN	64	64	100%
OVERALL	**100**	**103**	**97%**

PHQ-9 Results

The *PHQ-9* has been validated and shown to have excellent sensitivity and specificity for adults, so that a score greater than 9 is indicative of major depression.[12] A five-point change over time is indicative of a *clinically significant result*, equivalent to a change in severity category. The *PHQ-9* severity categories are: minimal (0–4 points), mild (5–9 points), moderate (10–14 points), moderate-to-severe (15–19 points), and severe (20–27 points).

12 Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of the prime-MD: the PHQ primary care study." 1999. *JAMA*. 282(18): 1737–1744.

Enrolled patients had a range of initial levels of depression symptoms, and so results (Table 8) are presented for patients at high risk for major depression (score >9, ranging from moderate to severe), as well as for all patients (initial *PHQ-9* score ranging from minimal to severe).

Among patients at high risk for major depression, after six months of engagement, average *PHQ-9* scores were lower at a clinically significant level. HSL patients improved by one severity category moving from *moderate* to *mild* (average reduction of 8.6 points). Lahey patients also improved by one severity category from *moderate-to-severe* to *moderate* (average reduction of 5.2 points). Lynn patients improved by two severity categories, moving from *moderate-to-severe* to *mild* (an average reduction of 11.2 points).

Among all patients, incorporating those with milder forms of depression, average change scores were also lower. For the full sample (n=1,061), patients moved from moderate-to-mild depression (an average reduction of 4.3 points).

TABLE 8. DEPRESSION OUTCOME RESULTS

	# PATIENTS	AVERAGE INITIAL SCORE	INITIAL PHQ-9 SEVERITY CATEGORY	AVERAGE 6-MONTH FOLLOW-UP SCORE	FOLLOW-UP PHQ-9 SEVERITY CATEGORY	AVERAGE CHANGE SCORE	% OF PATIENTS WITH A 50% SYMPTOM REDUCTION
PATIENTS WITH AN INITIAL PHQ-9 SCORE > 9 (HIGH RISK FOR MAJOR DEPRESSION)							
HSL	28	14.0	Moderate (10–14)	5.4	Mild (5–9)	-8.6	68%
LAHEY	181	15.2	Moderate-to-severe (15–19)	10.0	Moderate (10–14)	-5.2	25%
LYNN	326	18.1	Moderate-to-severe (15–19)	6.9	Mild (5–9)	-11.2	78%
OVERALL	**535**	**16.9**		**7.9**		**-9.0**	**60%**
ALL ASSESSED PATIENTS							
HSL	76	9.2	Mild (5–9)	4.0	Minimal (0–4)	-5.2	61%
LAHEY	388	9.6	Moderate (10–14)	7.9	Mild (5–9)	-1.7	24%
LYNN	597	11.9	Moderate (10–14)	5.9	Mild (5–9)	-6.0	60%
OVERALL	**1,061**	**10.8**		**6.5**		**-4.3**	**47%**

Healthy Lives Five-Axis Scale Outcomes

The *HL5A scale* is a provider rating scale (see Appendix C) developed by Brookline. Vinfen adopted this scale and Brookline staff trained Vinfen staff on its use. Providers rate their patients on five axes and two subdomains within each axis. Inter-rater reliability (i.e., the extent to which providers would rate the same patient in the same way) is a concern with this type of scale. Brookline was conducting a validation study of the *HL5A scale*, which was underway at the same time as the FEI Initiative. Each axis score is on a scale from 2 to 8 points with a lower score indicating poorer health or functioning. The axes are: 1) medical and behavioral functioning, 2) appropriate use of health services, 3) access to services and relationships with providers, 4) basic needs are met, and 5) self-care and adherence.

Initial scores were lowest on Axis 1, medical and behavioral functioning, and on axis 5, self-care and adherence (Table 9a). There was marginal improvement, on average, on all follow-up scores for all five axes, for both grantees. Average changes are difficult to interpret, because there are no guidelines for understanding what level of change indicates improvement. This information may be forthcoming from the validation study.

TABLE 9a. HL5A OUTCOMES: AVERAGE SCORES (HIGHER SCORES INDICATE BETTER HEALTH AND FUNCTIONING)*

	AXIS 1: MEDICAL AND BEHAVIORAL FUNCTIONING		AXIS 2: APPROPRIATE USE OF HEALTH SERVICES		AXIS 3: ACCESS TO SERVICES AND RELATIONSHIPS WITH PROVIDERS		AXIS 4: BASIC NEEDS, PHYSICAL, ECONOMIC, SOCIAL, ENVIRONMENT		AXIS 5: SELF-CARE AND ADHERENCE	
	INITIAL	FOLLOW-UP	INITIAL	FOLLOW-UP	INITIAL	FOLLOW-UP	INITIAL	FOLLOW-UP	INITIAL	FOLLOW-UP
BROOKLINE	3.9	4.5	5.7	6.4	6.5	7.0	5.8	6.1	5.1	5.5
VINFEN	4.6	4.8	6.6	6.9	6.9	7.1	6.2	6.3	6.3	6.0

* All axes have a scale range from 2 to 8.

JSI also examined the percent of patients who had at least a one-point improvement on an axis score, as an indicator of substantial change in rating of health or functioning (Table 9b). For Brookline, 39–47% of patients (14 to 17 patients out of 36) met this criterion across the five axes. For Vinfen, 17–38% of patients (11 to 25 patients out of 64) met this criterion across the five axes. For both grantees, the greatest improvement was on axis 3, *access to services and relationships with providers*, (47% of Brookline patients and 38% of Vinfen patients). Forty-seven percent (47%) of Brookline patients also improved on axis 2, appropriate use of health services, and axis 5, self-care and adherence.

TABLE 9b. HL5A OUTCOMES: PERCENT IMPROVEMENT (PERCENT OF PATIENTS WITH >1 POINT IMPROVEMENT, INDICATING SUBSTANTIVELY BETTER HEALTH AND FUNCTIONING)*

	# OF PATIENTS	AXIS 1: MEDICAL AND BEHAVIORAL FUNCTIONING	AXIS 2: APPROPRIATE USE OF HEALTH SERVICES	AXIS 3: ACCESS TO SERVICES AND RELATIONSHIPS WITH PROVIDERS	AXIS 4: BASIC NEEDS, PHYSICAL, ECONOMIC, SOCIAL, ENVIRONMENT	AXIS 5: SELF-CARE AND ADHERENCE
BROOKLINE	36	42% (15)	47% (17)	47% (17)	39% (14)	47% (17)
VINFEN	64	28% (18)	28% (18)	38% (25)	28% (18)	17% (11)

* All axes have a scale range from 2 to 8.

COSTS

Seven of the eight grantees (PPOC excluded) collected data on the costs of delivering integrated care, including screening and assessment, integrated service delivery (i.e., direct care of patients), ongoing support and administration, transition or start-up costs (e.g., training or establishing data collection processes), and other direct costs.

Overall and Per-Patient Costs

The average cost across grantees on a per patient basis was summarized to normalize the costs relative to the size of the program. Table 10 shows the cost per patient for each of the cost categories as well as the total annual average cost per patient in 2016 and 2017. Total 2016 costs averaged $2,169 per patient (range: $144 to $4,793); total 2017 costs averaged $1,925 per patient (range: $585 to $4,321).

EAST BOSTON LEADERSHIP INTERVIEW:
IBH requires full culture change throughout the organization

"This journey has been a marathon and certainly not a sprint. We moved from being a centralized department to having every one of our clinicians integrated into primary care, recognizing the need to shift our organization's culture completely. Our goal was to be an integrated health care organization. We focused on accomplishing some important changes in workflow and training, not just for the behavioral health team, but also for the entire primary care team."

TABLE 10. AVERAGE ANNUAL COST PER PATIENT, OVERALL AND BY COST CATEGORY

COST CATEGORY	AVERAGE COST PER PATIENT, 2016 (RANGE)	AVERAGE COST PER PATIENT, 2017 (RANGE)
Screening and assessment	$15 ($4–$274)	$189 ($4–$415)
Integrated service delivery	$1,360 ($96–$4,723)	$1,495 ($371–$8,518)
Ongoing support and administration	$100 ($28–$1,561)	$146 ($67–$2,452)
Transition activities	$213 ($10–$1,091)	$92 ($6–$177)
Other direct costs	$541 ($4–$1,444)	$597 ($1–$1,493)
TOTAL COSTS*	**$2,169 ($144–$4,793)**	**$1,925 ($585–$4,321)**

* PPOC excluded.

The annual costs per patient declined between 2016 and 2017 (Table 11) due to a higher number of patients served as programs grew and a reduction in transition costs. The annual cost per patient was higher among programs that served patients in their homes or residential facilities and lower among the programs that provided services in a primary care setting. Screening and assessment costs increased considerably between years. When queried about these increases, grantee leadership noted that it was primarily due to higher rates of screening as many programs worked toward universal screening. The costs of direct services did not change significantly between years. Transition costs decreased from a mean of $213 to $92 per patient and from 10% to 4% of total costs. The transition costs included staff training and strategic team meetings, and the costs for these declined after initial implementation. Regarding other direct costs, most costs are health information technology (IT) costs. Based on the amounts reported, there is significant variation in how grantees allocated health IT costs to their IBH programs. Some did not report any health IT costs, while others attributed some proportion of organizational health IT costs to their IBH programs.

PPOC LEADERSHIP INTERVIEW:
IBH commitment, flexibility, and awareness of biases and stigma

"One of the things we have experienced is that in a primary care setting, things move very quickly. Substance use treatment is a long-term commitment. There must be tolerance for no shows, patient ambivalence, and things like that. It is different from the medical model of treatment. IBH program implementers must be flexible from the traditional ways of implementing treatment, while maintaining commitment to financial responsibility and quality of care. It is also necessary to be aware of biases and the stigma around mental health and substance use, and organizations must address these across the board."

TABLE 11. PERCENT OF TOTAL COSTS, BY COST CATEGORY: 2016, 2017 AND CHANGE OVER TIME

COST CATEGORY	PERCENT OF TOTAL COSTS, 2016	PERCENT OF TOTAL COSTS, 2017	CHANGE
Screening and assessment	1%	8%	**+7%**
Integrated service delivery	61%	59%	**-2%**
Ongoing support and administration	4%	6%	**+2%**
Transition activities	10%	4%	**-6%**
Other direct costs	24%	24%	**0**

Reimbursement for Integrated Behavioral Health Services

In September and October 2018, the evaluation team interviewed all grantees to discuss the current state of insurance reimbursement related to their integrated care programs and the implications for sustainability of IBH services. Direct IBH patient services are reimbursable, although there are licensing and billing/coding idiosyncrasies that present a learning curve for organizations new to this work. For example, medication management is

reimbursed under medical care, whereas counseling for the same patient is reimbursed under mental health care. This means that providers offering both services through a psychiatrist or nurse practitioner have to credential these professionals both as a medical and mental health provider.

The grantee interviews revealed several components of integrated care that are currently not reimbursable through insurance or are paid for in a limited way. These include care coordination, warm hand-offs, outreach and engagement, and interpretation services, all services that grantees noted as essential for IBH services delivery.

- Care coordination continues to be an area where reimbursement for services is limited. There is some reimbursement that contributes to care coordination, but it does not fully cover the costs of the service. For example, one grantee estimated that the Medicare chronic care management per member per month fee covers only five percent of the cost of care coordination. It is also limited to elderly and/or dually eligible individuals. The newly formed Massachusetts Medicaid Accountable Care Organizations (ACOs) may cover care management services to some extent; however, grantees noted that it is too early in their experience with the ACOs to know what funds they will receive. In addition, ACO care management is only reimbursable if a patient is stratified into a high-risk group; thus, it may not cover a general primary care population in need of behavioral health services.
- Warm hand-offs are another component of integrated care for which reimbursement is lacking. One grantee noted that a behavioral health provider may spend at least 5 and as long as 20 minutes with the patient upon introduction by the primary care provider. The interaction is too short to be billable. Warm hand-offs are considered instrumental in engaging patients in behavioral health care. Practices report that individuals who schedule a behavioral health visit after a warm hand-off are much less likely to be a no-show for their first behavioral health visit than someone who is scheduled without a warm hand-off.
- Outreach and engagement activities, such as reminding patients of appointments and following up on missed appointments, are not reimbursable expenses. Without these activities, there are likely to be higher no-show rates, which ultimately increases integrated care services delivery costs.
- Interpretation services are not reimbursable yet are essential for culturally appropriate services delivery. While not specific to integrated services delivery, given the sensitivity and potential stigma related to behavioral health, language appropriate services are critical.

LYNN PATIENT SUCCESS STORY

When Molly came in to meet her primary care provider to treat her chronic pain, she had not been looking for behavioral health support. However, she scored very high on a PHQ-9 screening. Molly had a history of substance use and struggled with sobriety. Although she had been sober for 16 years, she had relapsed and used cocaine about two months prior to her primary care visit. Most troublingly, she endorsed passive suicidal ideation. Molly received a warm hand-off to a licensed psychologist within 15 minutes of her screening, and a thorough safety assessment was conducted. Molly's newly-assigned integrated care provider assessed that she was unlikely to stay in IBH services due to the multiple issues and stressors she was battling. They met three more times, and the integrated care provider referred her to a long-term therapist for additional services. A year later, Molly's PHQ-9 screening at her annual visit showed a much-improved score.

SUSTAINABILITY OF INTEGRATED SERVICES

Based on interviews with grantee leaders, all eight plan to sustain some aspects of their integrated care programs. For some grantees, new funding streams are supporting their programs. In the case of the Cape Cod and Lynn, there is hope and reliance on the new Medicaid ACO model to support care coordination and engagement of at

least their more complex patients in integrated care. Brookline is applying its experience to educate ACO providers, as well as receiving some state health reform resources to support its program. Vinfen has institutionalized the model it tested under the FEI Initiative for the organization's case management approach going forward, and this will be supported through a new model of funding from the Department of Mental Health Adult Clinical Community Services program. PPOC participating practices will continue its work with youth with substance use disorder with support and training for its social workers supported through hospital investment and federal grant funding. Similarly, HSL has committed to continuing to invest in its IBH program by supporting the training of staff in the model. Lahey aspires to continue growing its IBH program and still gaining economies of scale to support the work. East Boston also sees the benefits of the ACOs to support its work with their most complex patients and will also continue to serve patients at risk before their illness progresses to the ACO-qualifying point of complex.

OVERALL CONTRIBUTION OF THE FEI INITIATIVE

The FEI Initiative made significant contributions in terms of both increasing access for populations served by the eight grantees and improving patient outcomes for the subset of IBH patients in the five grantee organizations able to track these data. The FEI Initiative resulted in important lessons at the organizational level, including understanding the costs of IBH services and organizational transformation needed to do this work well. Additionally, through funding a diverse group of grantees, there were lessons learned specific to providing IBH to seniors receiving home care and/or in a long-term care facility, youth, youth with substance use disorders, and persons living with serious mental illness. All eight grantees reported the intention to sustain their IBH work, which demonstrates that this work is both organizationally feasible and perceived as important to providing high-quality patient care. This means that the contribution of the FEI Initiative has continued since the grant funding ended in December 2018.

ACCESS

The FEI Initiative resulted in improved *access* to IBH as demonstrated by the following:

- More than 60,000 people had the opportunity to receive IBH services through grantees providing services to an expanded population or to a new setting—referred to as the *reach* of the initiative;
- Over 5,000 patients were determined to be in need of IBH services (either through a formal screening process, through provider referral, and/or through self-referral) and accepted a referral to such services—referred to as *enrollment in IBH services*;
- Eighty percent (3,574 patients) of patients enrolled had at least one face-to-face visit with an integrated care provider—referred to as *engagement in IBH services*;
- Over 70 percent of engaged patients had two or more visits with an integrated care provider, with an average of 4.4 visits among engaged patients—referred to as *intensity of services*; and

HSL LEADERSHIP INTERVIEW:
Serving seniors through IBH

"We have put the spotlight on a program and plan that can guide us in the way we address seniors' mental health that is not separate from their bodies, minds, and spirits. *Healthy IDEAS* is something that is approachable for someone who is not a psychologist. It has given us the language and methodology to approach people about depression and social isolation, and it has allowed us to help seniors to identify their own strengths and what actions they can take to move to a different place. We are pleasantly surprised by our successes, and then we come in the next day and keep going with more clients in need."

- Among five grantees tracking timeliness, 56 percent of engaged patients were able to have a same-day, face-to-face visit (i.e., on same day of enrollment) with an integrated care provider, and 80 percent of engaged patients were able to have a visit with an integrated provider within 14 days of enrollment—referred to as *timeliness of IBH services*.

An underpinning rationale for IBH is the large treatment gap between those in need of behavioral health services and those who receive behavioral health services. Many of the grantees were moving toward universal screening for behavioral health, which is a good proxy of need (yet still only applies to those who come into care), but several had not yet attained universal screening. Thus, the evaluation was not able to fully measure *need*, but using *enrollment* as an estimation of need, it is clear that grantees were able to close this treatment gap significantly, with 80% of patients enrolled receiving treatment.

OUTCOMES

Five of the grantees were able to track outcomes. There were several challenges to outcomes tracking, including the following:

- Developing systems, such as registries, to know when follow-up measurement was due;
- Having patients conduct a follow-up measurement within the window of the evaluation (especially if patient was not scheduled for a medical or other visit during this time);
- Identifying a measure that had relevance to IBH services provided (e.g., *PHQ-9* is a good depression scale, but only has relevance for patients with depression—this was a subset of patients being seen by grantees selecting this measure); and
- Identifying tools that were both appropriate to patients being served and sensitive to change in IBH conditions (e.g., identifying tools to use with youth were challenging).

Three grantees used the *PHQ-9* as an outcome measure and were able to demonstrate in a subset of their patients a reduction in depression symptoms (for whom it was relevant and for whom they were able to get both baseline and follow-up data). There was a total of 1,061 patients that had on average a 4.3 drop in *PHQ-9* score over a six-month period and moved from a *PHQ-9* classification from typically *moderate* to typically *mild* depressive symptoms. For 535 patients at *high-risk of major depression* (a *PHQ-9* score of greater than 9 at baseline), there was an average change score of 9 points, with patients dropping one to two categories in *PHQ-9* classification of severity of depression symptoms.

The two community mental health service providers (Brookline and Vinfen) both used the *HL5A scale*, a provider assessment scale developed by Brookline (and currently undergoing validation). Findings demonstrated marginal improvement, on average. Average changes are difficult to interpret,

VINFEN PATIENT SUCCESS STORY

Barbara was having a rough time with her depressive disorders and struggling to communicate with her medical providers. In her late 50s, Barbara had long suffered from multiple chronic illnesses and battled obesity and diabetes. Her long-term boyfriend had passed away, exacerbating her depressive symptoms. She came into residential care after her diabetes became unmanageable and was referred to Vinfen's IBH program. Vinfen was able to provide Barbara with key support, including reaching out to doctors' offices and coordinating care. Vinfen's team focused on making sure Barbara felt in control of her treatment: "A lot of the work we did came out of giving her the ultimate choice on whether and how she should address things." Vinfen provided Barbara with a smartphone and trained her on using their app, which provided her with mobile access to physical and mental health information. Eventually Barbara was well enough to leave the residential center and found a place to live independently.

because there are no guidelines for understanding what level of change indicates improvement. This information may be forthcoming from the validation study.

Costs

FEI grantees have demonstrated the costs related to starting and maintaining their IBH programs—data that have not been previously available and have been useful to many grantees as they become involved with the State's ACOs. Potentially, ACOs offer new resources to support case/care management, and grantees reported that their experience in FEI will help them negotiate with ACOs and to be able to use any future resources available through ACOs more effectively. Grantees also reported that by working through the cost calculations, they had better understanding of how to leverage billing strategies in ways that could maximize reimbursement, given current regulations.

Grantees were able to get patient services reimbursed for the most part. They deemed case management, warm hand-offs, patient outreach and engagement, and interpretation services to be essential, yet not reimbursable, for high-quality IBH services. Transition costs (e.g., start-up costs for establishing IBH services) were also not reimbursed. These costs can be substantial, as they involve training of staff, reconfiguration of workflows, and overall transformation to change the way services are provided.

CAPE COD LEADERSHIP INTERVIEW:
Patient outreach is critical to engagement

"So much of our work with this population (medically complex with multiple co-morbidities, including psychosocial challenges) turned out to be about engagement—it was really about the staff and the complex care team reaching out to patients, who were often times initially not open to what we were offering. Before the FEI Initiative, when we served a more general primary care population, people more easily engaged with IBH. With this medically complex population, we had to persuade patients to join the program."

Innovation

While an existing body of research demonstrates that an integrated service model, whereby behavioral health providers are co-located in primary care, results in improved patient outcomes, there is little evidence related to other models of integration. Given the diversity of grantees funded through the FEI Initiative, some innovative models were tested and resulted in substantial lessons learned by these implementing grantees. Specifically, the FEI Initiative:

- Assisted **linkages to primary care** for patients, such as those suffering with severe mental illness, whose main point of contact with the health system is the behavioral health system. This population is likely to go without primary and preventive care, but both Brookline and Vinfen demonstrated linkages with primary care for patients enrolled in their IBH programs.
- Showed strong **engagement in IBH services and intensity of IBH service use by adolescents**, including substance use services at East Boston and PPOC.
- Improved **access (as measured by enrollment, engagement, and intensity of service delivery) to behavioral health care for an older population** receiving health services in their home or in an institutional setting, where this service was not previously provided (HSL). These patients experienced a clinically significant decline in their depression symptoms over a six-month period.
- Assisted Vinfen in testing a health promotion application delivered via smart phone for its patients. Vinfen reported high patient satisfaction related to using the app.

- Improved the capacity of grantees to collect and use **quality improvement data**. Several grantees noted that the tracking of evaluation data enabled them to operationalize and use data to improve their programs over the course of their grants. The outcome monitoring done by five of the grantees is especially significant because measurement of health improvement in behavioral health is an ongoing challenge. The gain in data collection and patient tracking skills for all grantees will be relevant to their success in a payment environment that is moving more toward reimbursing for quality rather than volume of services.

Sustainability

Perhaps the most important finding related to the FEI is that all eight grantees have plans for sustaining their IBH services. This means that each grantee believes IBH works in their organization and benefits their patients. Appropriate reimbursement is the challenge, but several grantees are working with the State's new ACOs to provide IBH services. Others have received additional grant funding to continue. Some noted that they are continuing because it is the right thing to do. Three grantees (Brookline, East Boston, and PPOC) have roles in educating other programs on integration, a channel to further share what they have learned through FEI.

LAHEY HEALTH PATIENT SUCCESS STORY

Anne came into primary care looking for help for her son, Tom, and herself. Anne is in her early 50s. Tom is in his 20s and has been diagnosed with schizophrenia. Tom has struggled with substance use disorder and sticking with his medications. Through Lahey's IBH program, Anne received individual therapy, where she and the behavioral health provider came up with strategies to help her become more independent, step back from her caretaker role, and ensure that she had the resources she needed. When Tom was hospitalized, the Lahey team worked with the hospital case managers to bridge his care. Both Anne and Tom are making progress through these unique combined efforts. "We are working congruently on her care and his care, even though he is not my patient. It is unlikely I could do this in another setting," according to a Lahey integrated care provider.

CONCLUSION

The FEI Initiative made significant contributions to IBH in the Commonwealth of Massachusetts. Improved access to behavioral health was demonstrated as was improvement in patient outcomes for the subset of grantees able to track such data. FEI also contributed to organizational lessons related to costs and implementation of integrated care; grantees will draw from these and share them with other health care professionals and organizations interested in IBH services. The diversity of FEI grantees also contributes to IBH services delivery beyond the more traditional model of co-location of behavioral health in primary care. All eight grantees found FEI work feasible within their organizations and of benefit to their patients, underscoring their collective commitment to sustaining all that they have established thus far.

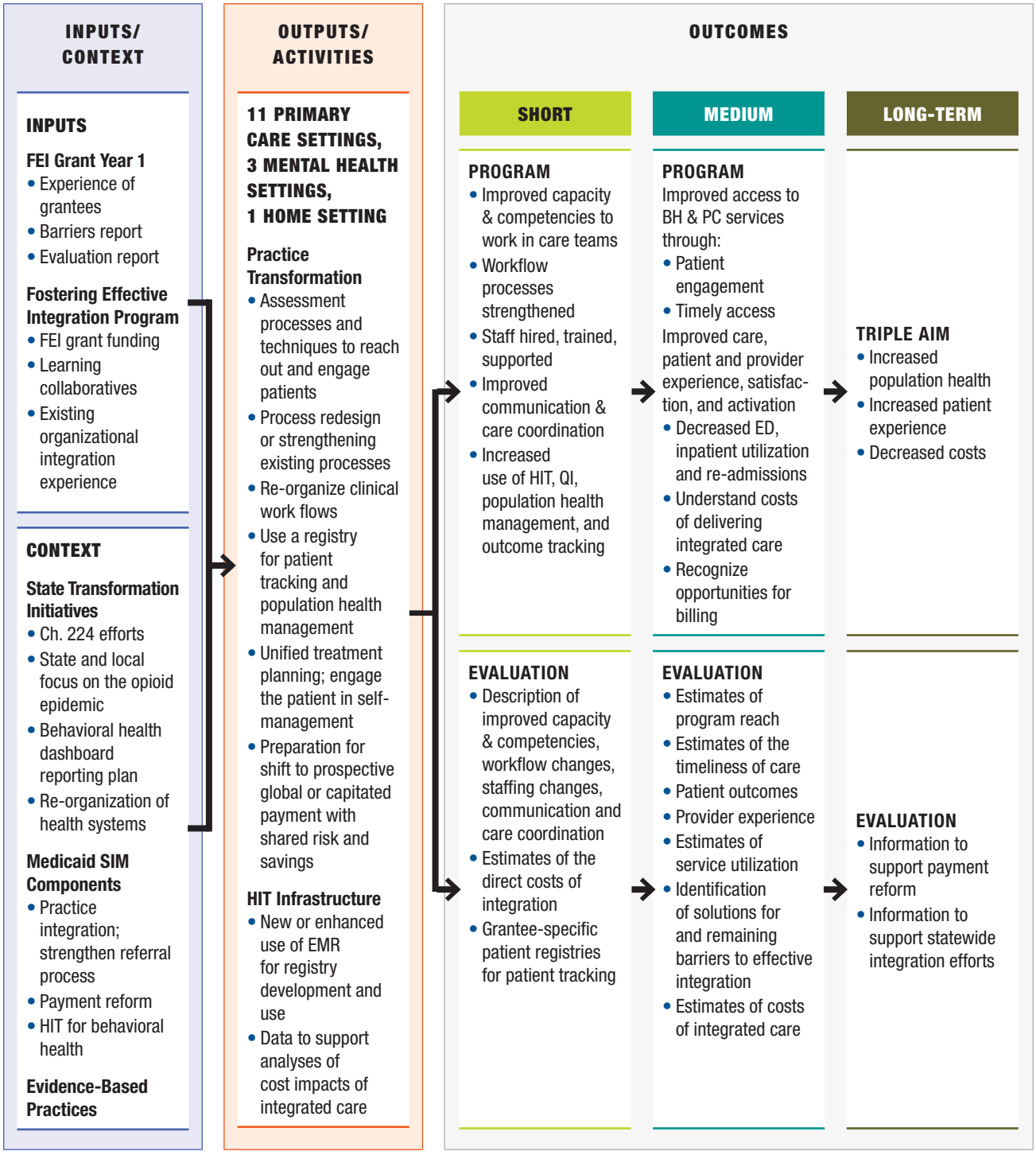
APPENDIX A: FOSTERING EFFECTIVE INTEGRATION — DESCRIPTION OF GRANTEES

ORGANIZATION NAME	EXPANSION POPULATION	ORIGINAL POPULATION	SETTINGS WHERE INTEGRATED CARE PROVIDER SEES PATIENTS	MODEL OF INTEGRATION
BROOKLINE CENTER FOR COMMUNITY MENTAL HEALTH	Adults who receive care at two primary care sites (Bowdoin Street Health Center or Heath Care Associates in Brookline, MA) and are assessed as high risk: >3 chronic conditions and >1 mental health condition and socio-economic issues	High-risk adults from one primary care setting (Health Care Associates)	In patient's home or residence	Community health workers visiting patients in home, who address patients' behavioral health issues and link patients with primary care and other services
COMMUNITY HEALTH CENTER OF CAPE COD	Patients eligible for complex care management as evidenced by scoring Tier 3 or Tier 4 according to Minnesota tool algorithm, meaning multiple co-morbidities high cost and/or utilization, and a mental health history or current symptoms	Tier 3 or Tier 4 high-risk patients, but without incorporation of mental health issues	In two of Community Health Center of Cape Cod's primary care practices	Complex care management team co-located in primary care, with behavioral health provider added to the team
EAST BOSTON NEIGHBORHOOD HEALTH CENTER	Adolescents or young adults aged 13–21 years in primary care who have mental health or substance use disorder symptoms	Adult patients in primary care	In East Boston Neighborhood Health Center's pediatrics and family medicine clinics	Co-located collaborative care model (behavioral health provider, primary care provider, and consulting psychiatrist work as team)
HEBREW SENIOR LIFE	Older adults who reside in Simon C. Fireman assisted living facility (Randolph, MA) or receive home care services (primary care provider referral or post-hospital discharge), who screen for depression	Other Hebrew Senior Life assisted living facilities in Brookline area	In home or in assisted living facility	Home-based/assisted living–based collaborative care, where behavioral health specialist provides manualized intervention to help depressed seniors identify and engage in simple, pleasurable activities to improve mood and to ensure connection with patient's primary care provider
LAHEY HEALTH	All new and existing adult primary care patients who screen positive (depression) during annual visit or when a primary care provider or patient identifies any behavioral health concern	Co-located collaborative care model implemented at other Lahey Health primary care practices	In primary care	Co-located collaborative care model (behavioral health provider, primary care provider, and consulting psychiatrist work as team)

continued

ORGANIZATION NAME	EXPANSION POPULATION	ORIGINAL POPULATION	SETTINGS WHERE INTEGRATED CARE PROVIDER SEES PATIENTS	MODEL OF INTEGRATION
LYNN COMMUNITY HEALTH CENTER	Adult patients who receive primary care on Lynn Community Health Center campus from Green, Blue, and Purple teams with behavioral health concern identified through screening, patient self-referral, or primary care provider	Same primary care practices, but adopting universal screening	In primary care	Co-located collaborative care model (behavioral health provider, primary care provider, and consulting psychiatrist work as team)
PEDIATRIC PHYSICIANS' ORGANIZATION AT CHILDREN'S	Children and youth with signs, symptoms, or concerns for substance use; for evaluation purposes, age range included 5–21 years	Adolescent Substance use and Addiction program at Children's Hospital, Boston, MA	In primary care	Co-located collaborative care model (behavioral health provider, primary care provider, and consulting substance use experts work as team)
VINFEN OF PLYMOUTH	Adding community health worker and smart phone app services in Plymouth area of MA; all clients live in one of seven group homes or independently, and all clients have severe mental illness and are impaired in their functioning	Vinfen care team serving clients in the Boston area, with community health worker and/or smart phone app support	In patient's residence	Community health workers on team who address behavioral health needs and link patients to primary care and other services

APPENDIX B: FOSTERING EFFECTIVE INTEGRATION — LOGIC MODEL



BCBS MA Foundation's Fostering Effective Integration (FEI) Program Goal

To assess the impact of behavioral health and primary care integration on patient access and health outcomes. To understand how organizations address challenges and barriers to implementation, the programmatic costs of implementation, and structural changes are required to strengthen and sustain programs.

APPENDIX C: FOSTERING EFFECTIVE INTEGRATION — HEALTHY LIVES FIVE AXIS SCALE

Healthy Lives™ 5-Axis Scale

Directions: Use average rating for prior three months unless otherwise noted. Circle the number that best describes the patient and enter total score for each axis in box.

Patient Name:	*Scored by:*	*Date of Administration:*

Medical Problems		**Behavioral Health/Substance Abuse Problems**		
4 - No symptoms or mild, transient symptoms of medical conditions		4 - None or only mild symptoms of psychiatric disorder or substance abuse		
3 - Mild but persistent symptoms, which do not interfere with current functioning (e.g., mobility, self-care, work, study ,family or leisure activities)	+	3 - Mild but persistent psychiatric disorder and/or substance abuse symptoms that do not interfere with current functioning (e.g., mobility, self-care, work, family, or leisure activities)	=	**Health Related Functioning: Medical and Behavioral** ☐
2 - Moderate to severe symptoms, which interfere with one or more aspect of current functioning (e.g., mobility, self-care, work, study, family, or leisure activities)		2 - Moderate psychiatric disorder and/or substance abuse which interfere with one or more area of functioning		
1 - Severe symptoms causing permanent disability and/or inability to function in several areas		1 - Serious psychiatric disorder and/or substance abuse resulting in permanent disability and/or need for residential care		

ED Hospital Utilization		**Primary Care Utilization**		
4 - 0-2 ED visits/hospitalizations in the past year, for appropriate problems		4 - Good access to care, regular follow-up with PCP		
3 - 2-4 ED Visits/Hosp'ns	+	3 - Some missed appointments	=	**Utilization: Emergency Dept, Hospital and Primary Care** ☐
2 - 4+ ED Visits/hosp'ns, less than half are avoidable		2 - Frequent missed appointment and lack of follow-up		
1 - 4+ ED Visits/hosp'ns, more than half are avoidable		1 - No regular contact with PCP		

Availability of Healthcare & Resources		**Relationship with Providers**		
4 - Good access to primary and behavioral healthcare		4 - Positive relationships with healthcare professionals		
3 - Access somewhat limited due to barriers such as inadequate insurance, linguistic or cultural barriers, lack of transportation, or lack of providers		3 - Distant relationships with healthcare professionals, reports persistent difficulties communicating with providers		
2 - Access very limited due to multiple barriers, such as inadequate insurance, linguistic or cultural issues, lack of transportation, or lack of providers	+	2 - Negative relationships, including frequent complaints and/or criticisms of providers expressed to third parties	=	**Access: Availability and Relationship with Providers** ☐
1 - No adequate access to care		1 - Active conflicts or arguments during visits to providers, and/or frequent requests for change of providers		

Basic Physical/Environmental Needs		**Psychosocial Needs**		
4 - Stable and adequate housing/nutrition, living independently with minimal support		4 - Frequent contact (>1/week) with family, friends, and/or acquaintances, who provide support when needed		
3 - Stable and adequate housing/nutrition but needs frequent (>1x/week) support from others (e.g. family, home care, or an institutional setting)		3 - Infrequent contact with family, friends, and/or acquaintances (≤1/week), often delay in responding to need	=	**Basic Needs: Physical, Environmental, Economic, Psychosocial** ☐
2 - Unstable housing/nutrition, inadequate support at home or living in a shelter	+	2 - No regular contact with family, friends, and/or acquaintances, limited assistance with needs		
1 - Homeless, no access to regular food, unsafe environment		1 - No assistance readily available from family, friends, and/or acquaintances		

Adherence to Medications and Recommendations		**Self-Care/Activation**		
4 - Excellent adherence, takes nearly all (>90%) of prescribed doses/treatments		4 - Has made significant changes in behavior/lifestyle, generally healthy		
3 - Good adherence, consistently takes approxiamtely three quarters (60--90%) of prescribed doses/treatment	+	3 - Pt can identify goals, has understanding of illness, is practicing skills and/or trying to make changes	=	**Patient Activation: Adherence and Self-Care** ☐
2 - Fair adherence, takes about half (40 -60%)of prescribed doses		2 - Has some information, with large gaps or lack of understanding, has some motivation to change but believes health is not within his/her control		
1 - Poor adherence, takes less than a third (< 40%) of prescribed doses		1 - Pt is passive and demoralized, has little accurate information about his/her health, motivation is very low		

add values of the boxes above to tally ***TOTAL SCORE*** *:* ☐

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