TARGETED COST CHALLENGE INVESTMENTS PROGRAM

EVALUATION REPORT

MASSACHUSETTS
HEALTH POLICY COMMISSION

NOVEMBER 2021

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EXECUTIVE SUMMARY

INTRODUCTION AND METHODOLOGY

The Massachusetts Health Policy Commission (HPC) is an independent state agency that develops policy to reduce health care cost growth and improve the quality of patient care. The HPC's mission is to advance a more transparent, accountable, and equitable health care system through its independent policy leadership and innovative investment programs. The HPC's goal is better health and better care – at a lower cost – for all residents across the Commonwealth.

In 2016, the HPC launched the Targeted Cost Challenge Investments Program (TCCI Program) to support promising innovations that supported achievement of the Commonwealth's cost containment goals while improving access to high-quality care. The TCCI Program provided $6.6 million in funding to ten awardees, who partnered with more than 60 community organizations to conduct 18-month programs. All awardees drew on existing evidence or successful demonstration projects to inform their care models, with some awardees building on active or past pilots conducted within their organizations and others launching entirely new programs.

The HPC used a mixed-methods approach to evaluate the TCCI Program, using key performance indicators (KPIs) and qualitative deliverables from each program. To complement this evaluation, the HPC also contracted with an external research team from Brandeis University to conduct a focused qualitative study of care planning and coordination in four initiatives, the TCCI Care Coordination Case Study.

TCCI AWARDEES

The ten TCCI awardees served a total of 3,836 unique individuals from complex, high-need populations. Many patients had serious medical conditions, multiple comorbidities, substance use and/or other behavioral health concerns, high economic and social needs, and/or trauma histories. Addressing these patients' needs required multidimensional interventions that coordinated care across diverse providers, a process that was frequently enabled by the work of community health workers, patient navigators, and other non-clinical staff who were able to devote considerable time and attention to understanding the specific needs of their patients and supporting them in accessing both clinical and social resources. Awardees reported measurable impact across the programs while also identifying considerable challenges to elements of care and service coordination. In addition, most initiatives reported that relationships with clinical and social service partners facilitated collaboration and strengthened connections between the organizations.

- **BEHAVIORAL HEALTH NETWORK'S** Families in Transition (Project FIT) initiative collaborated with multisector partners to address the medical, behavioral, and health-related social needs of families experiencing housing insecurity. Patients valued Project FIT's support and obtained more stable housing housed during the initiative.
- **BERKSHIRE MEDICAL CENTER** implemented a collaborative behavioral health care model that colocated behavioral health teams at primary care practices and provided telepsychiatry appointments. Participants' inpatient admissions decreased. Co-location of behavioral health teams in primary care facilitated patient participation and supported primary care staff.

- **BOSTON HEALTH CARE FOR THE HOMELESS PROGRAM** developed a Social Determinants of Health (SDH) Consortium to address patients' health-related social needs in a coordinated manner. Participants had fewer emergency department (ED) visits, obtained more stable housing, and saw staff members as a source of consistent, nonjudgmental support.
- **BOSTON MEDICAL CENTER'S** High Touch, High Trust initiative deployed community health advocates who worked with civil legal aid attorneys and staff to help address patients' health-related social needs. Participants had fewer ED visits and inpatient admissions. The team mitigated over a quarter of identified social needs, including a majority of legal needs.
- **BROOKLINE COMMUNITY MENTAL HEALTH CENTER'S** Healthy Lives initiative implemented a multidisciplinary care management team to integrate behavioral health, primary care, and community services for patients with both mental health and chronic illness diagnoses. Participants had fewer ED visits and inpatient admissions and felt that the team provided valuable support. Total health care expenditures decreased.
- **CARE DIMENSIONS'** Palliative Care+ (PC+) initiative integrated palliative care staff into primary care sites to bridge gaps between curative, palliative, and hospice care for patients with serious illness. Participants made fewer ED visits, had fewer inpatient admissions, and valued PC+'s support in understanding and addressing their complex medical issues.
- **COMMONWEALTH CARE ALLIANCE** created high-acuity ambulatory care programs to provide integrated primary, behavioral health, dental, and palliative care, as well as chronic disease management. Patients' ED visits fell slightly, and hospitalized patients with behavioral health diagnoses received more timely follow-up. CCA primary care teams reacted positively to the initiative.
- **HEBREW SENIORLIFE** developed the Right Care, Right Place, Right Time (R3) initiative to coordinate care for residents in supportive housing by embedding wellness teams in affordable senior housing sites. Ambulance transports to the ED decreased and participants valued R3's support.
- **LYNN COMMUNITY HEALTH CENTER'S** TCCI initiative deployed community health workers (CHWs) to coordinate complex care services for patients with serious mental illness. CHWs' low caseloads, flexibility, and responsiveness enabled efforts to address patients' needs. Staff received positive feedback from LCHC clinicians.
- **SPAULDING HOSPITAL CAMBRIDGE'S** (SHC) post-acute care transition program provided cross-setting case management and palliative care coordination for chronically critically ill patients. The percentage of eligible patients discharged to home within 30 days increased, and the initiative strengthened SHC's relationships with visiting nurse agencies.

KEY CROSS-INITIATIVE THEMES

Despite the difference in the populations served and models deployed, common themes emerged across the ten initiatives:

- In working to meet the needs of their complex populations, awardees deployed innovative interventions that coordinated care and services across the health care and social service sectors.
- Addressing patients' health-related social needs was central to many awardees' efforts to improve care and reduce costs. However, alleviating underlying social determinants of health was often difficult even with well-developed, evidence-based approaches.
- Awardees were flexible in adjusting to a wide range of challenges during implementation. This happened through both on-the-ground quality improvement efforts and more significant model adaptations.
- Most programs had measurable, positive impacts on patients, though issues with data collection hampered many awardees' abilities to adjust their programs and produce real time, actionable self-evaluations.

SUSTAINABILITY

At the conclusion of TCCI, five awardees sustained their models nearly in full, three sustained portions of their model, and two discontinued their initiatives. Most awardees also made durable internal process and capacity improvements that they expected would influence ongoing practice. Awardees with strong leadership buy-in and initiatives that had already been through improvement cycles were more likely to sustain their models. Nevertheless, without consistent avenues for value-based payments or other payment methodologies that enable investments in non-traditional care models, awardees struggled to fund program elements that were not reimbursable in a fee-for-service environment such as community health workers and care coordination services.

CONCLUSION

Through TCCI, awardees developed experience and skills in crafting, testing, and implementing evidence-based models to improve outcomes for the Commonwealth’s most complex populations. Initiatives had demonstrable positive impacts on patients, and patient satisfaction was high among patients surveyed by awardees. Most awardees continued some elements of their initiatives and maintained capacity to better meet the needs of their patients in the future. TCCI initiatives generated an abundance of learning that offers operational insights to organizations and policymakers who are interested in advancing similar programs.

PART ONE:

TCCI PROGRAM-WIDE THEMES

INTRODUCTION

TCCI PROGRAM BACKGROUND

The Massachusetts Health Policy Commission (HPC) is an independent state agency that develops policy to reduce health care cost growth and improve the quality of patient care. The HPC's mission is to advance a more transparent, accountable, and equitable health care system through its independent policy leadership and innovative investment programs. The HPC's goal is better health and better care – at a lower cost – for all residents across the Commonwealth.

The HPC invests in and tests innovative care delivery and payment models that hold promise for supporting achievement of the Commonwealth's cost containment goals while improving access to high-quality care. The HPC launched the Targeted Cost Challenge Investments Program (TCCI Program) in 2016 as a pathway of the Health Care Innovation Investment (HCII) Program.[i] The TCCI Program provided $6.6 million in funding to ten awardees, who partnered with more than 60 community organizations to conduct 18-month programs. The TCCI Program was funded by the Health Care Payment Reform Trust Fund (G.L. c. 6D, § 7) (PRTF) and the Distressed Hospital Trust Fund (G.L. c .29, § 2GGGG) (DHTF), and the HPC designed the TCCI Program consistent with the purposes of the PRFT and DHTF to support innovations that address the Commonwealth's most complex health care cost and quality issues and enhance the ability of providers to serve populations efficiently and effectively. These challenge areas were identified through HPC research, data analysis, and literature reviews, as well as external stakeholder input[ii], including input from a Technical Advisory Group and the HPC Advisory Council. The challenge areas included social determinants of health, behavioral health integration, post-acute care, serious advancing illness and care at the end of life, and site and scope of care. Awardees chose to address one of these challenge areas through their proposed care model. Addressing patient needs in these domains while reducing costs and improving quality has proven difficult, but new, collaborative interventions showed evidence of potential for cost savings and improvements in care.

The TCCI Program was designed to foster innovative programs that built on demonstrated successes. Accordingly, awardees were required to cite evidence or successful demonstration projects that informed their proposals. In addition, awardees were encouraged to engage in multi-stakeholder partnerships to meet patients' complex health needs. The goals of the TCCI Program were to reduce health care cost growth in medical expenditure, operating expenses, and/or social costs, while maintaining or improving quality, access, and staff and patient experience. In addition, the program was designed to identify opportunities for sustainability through policy and payment reform.

INNOVATION CONTEXT

Payment reform has been identified as a key component of improving health care and reducing health care cost growth in the United States.[1] The movement toward value-based payment and alternative payment methods (APMs), which continues to evolve, aims to create a health system driven by high-quality, patient-centered care.[2] This shift has created a need for significant

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[i] The first phase of the HCII Program included over $11 million in investments to 20 competitively selected awardees spanning the entire Commonwealth. Awards range from $250,000 to $1,000,000 and are divided among three pathways: 1) Targeted Cost Challenge Investments, 2) Telemedicine Pilots, and 3) Neonatal Abstinence Syndrome Investment Opportunity.

[ii] Stakeholder input was solicited from providers, provider organizations, carriers, research/educational institutions, health professionals, community-based organizations, and other experts and market participants.

innovation in practice, especially to address the needs of complex, high-need populations effectively. How awardees approached that process of innovation differed considerably based on their specific circumstances.

Awardees designed their initiatives to allow them to gain experience in implementing scalable, value-based care models. All awardees drew on evidence from other interventions to address the needs of complex populations when developing their own care models and, in some cases, they built on their own past experience working with the populations they served.

EVALUATION METHODOLOGY

The HPC used a mixed-methods approach to evaluate the TCCI Program. Evaluators incorporated key performance indicators (KPIs) from each initiative, qualitative deliverables submitted during and at the close of the implementation period, and interviews with initiative staff. In addition, the HPC contracted with an external research team from Brandeis University to conduct the TCCI Care Coordination Case Study, a qualitative study of care planning and coordination within four TCCI Program initiatives (the "Care Coordination Study").[3]

TCCI AWARDEES

All ten awardees served complex, high-need populations. Many patients had serious medical conditions, multiple comorbidities, substance use and/or other behavioral health concerns, high economic and social needs, and trauma histories. For example, a Boston Health Care for the Homeless Program participant with complex clinical needs and numerous socioeconomic barriers stated that he had **"OD'ed 17 times."** A Care Dimensions Palliative Care+ patient with serious life-threatening conditions shared, **"I count my blessings every day. [I] cannot believe I survived that last hospitalization."** A participant in Hebrew SeniorLife's initiative explained their reasons for enrolling: **"I have a lot of health problems and I had been going to the hospital, being admitted to the hospital long before that. I thought it could be helpful to me."**[4] Addressing these patients' needs required multidimensional interventions that coordinated care across diverse providers and social services organizations.[5-8]

The ten initiatives served a total of 3,836 unique individuals. Awardees reported measurable impact across the programs and identified significant challenges to elements of care and service coordination. In addition, most initiatives reported that relationships with clinical and social service partners facilitated collaboration and strengthened connections between the organizations. Awardees also reported that non-clinical staff—including community health workers, patient navigators, and health outreach workers—were often critical in establishing and maintaining relationships with complex patients. These staff used creative strategies to connect with patients and developed deep and trusting relationships with a population that often demonstrated mistrust, fear, or resistance to engagement with the health care system based on prior negative experiences. For additional detail about each initiative, see **Part Two: Findings from the TCCI Program Initiatives**.

BEHAVIORAL HEALTH NETWORK

Behavioral Health Network's (BHN) initiative, Families in Transition (Project FIT), worked with families experiencing housing insecurity to create personalized and adaptive care plans. Project FIT also collaborated with multisector partners to address each family's medical, behavioral, and health-related social needs.

IMPACT

- Unstable housing and homelessness decreased by 43%, and children's absences from school fell, though other school-related challenges remained.
- Patients valued the initiative's support even as they continued to face high needs and structural barriers to maintaining their health and wellbeing.
- Project FIT staff worked closely with local housing providers, reducing duplication and streamlining services.
- After the TCCI program, Holyoke Public Schools received a grant to continue Project FIT services for a subset of families; however, BHN discontinued its role in the program.

BERKSHIRE MEDICAL CENTER

Berkshire Medical Center implemented a collaborative behavioral health care model that colocated behavioral health teams at primary care practices and provided telepsychiatry appointments.

IMPACT

- Over 1,300 patients accessed behavioral health care in a primary care setting.
- Participants' inpatient admissions decreased by 14%.
- Behavioral health teams' presence in primary care practices facilitated patient participation and supported primary care staff.
- Berkshire Health Systems implemented behavioral health integration as an ongoing program at nine primary care sites. The sustained model continued to use an evidence-based collaborative care format.

BOSTON HEALTH CARE FOR THE HOMELESS PROGRAM

Boston Health Care for the Homeless Program (BHCHP) developed a Social Determinants of Health (SDH) Consortium to address patients' health-related social needs in a coordinated manner. The SDH Consortium was an evidence-based program that BHCHP piloted in several iterations prior to the TCCI program with revisions based on lessons learned.

IMPACT

- Participants' emergency department (ED) visits decreased by 23%.
- The percentage of participants with housing increased from 25% to 35%, a 40% increase.
- Patients saw staff members as a source of consistent, nonjudgmental support. Close relationships between patients and staff facilitated the initiative but made staff turnover difficult for patients.
- The initiative strengthened relationships between partner organizations, including through development of a robust data-sharing system.
- The SDH Consortium continued as part of the MassHealth Behavioral Health Community Partners program, a transition made possible by its evidence-based model and the strong foundation built under the TCCI Program.

BOSTON MEDICAL CENTER

Boston Medical Center's (BMC) High Touch, High Trust (HT2) initiative deployed community health advocates (CHAs) who worked with civil legal aid attorneys and staff from the Medical Legal Partnership Boston (MLPB). Together, they assessed and partnered with patients to identify, prioritize, and resolve health-related social needs.

IMPACT

- Participants' ED visits decreased by 13% and inpatient admissions fell by 17%.
- The team mitigated 29% of identified social needs, including 70% of identified legal needs. BMC staff valued MLPB's assistance in these efforts.
- While HT2's model showed promise, BMC discontinued the initiative pending data analysis to determine its return on investment.

BROOKLINE COMMUNITY MENTAL HEALTH CENTER

Brookline Community Mental Health Center's (BCMHC) initiative, Healthy Lives, implemented a multidisciplinary care management team to integrate behavioral health, primary care, and community services for patients with both mental health and chronic illness diagnoses. Healthy Lives was an evidence-based program that BCMHC successfully piloted in earlier iterations before the TCCI Program.

IMPACT

- Participants' inpatient admissions decreased by 61%, ED visits by 53%, and total health care expenditures by 16%.
- Patients felt supported and believed that Healthy Lives staff listened to them and helped them advocate for themselves.
- Patients' primary care providers found the initiative helpful and believed that it supported patients in ways they could not.
- After the TCCI Program, BCMHC sustained one team to provide care through the MassHealth Behavioral Health Community Partners program. They also began providing consultation to other groups interested in replicating the Healthy Lives model.

CARE DIMENSIONS

Care Dimensions' Palliative Care+ (PC+) initiative integrated palliative care staff into primary care sites to bridge gaps between curative, palliative, and hospice care for patients with serious illness. These patients generally had complex needs and multiple medical providers: as one patient remarked, **"I have many care plans. I get one every time I go to an appointment or the hospital. It's confusing."**

IMPACT

- Participants' ED visits decreased by 24% and inpatient readmissions by 21%.
- Patients valued PC+'s support in understanding and addressing their complex medical issues, though they continued to face health-related social needs beyond the scope of the initiative.
- PC+ increased partner primary care providers' comfort with palliative care.
- Care Dimensions planned to roll out a version of the PC+ model to all palliative care patients after the TCCI Program, with revisions based on lessons learned during the initiative.

COMMONWEALTH CARE ALLIANCE

Commonwealth Care Alliance (CCA) created high-acuity ambulatory care programs to provide integrated primary, behavioral health, dental, and palliative care, as well as chronic disease management.

IMPACT

- Eligible patients' ED visits decreased slightly, and patients hospitalized with behavioral health diagnoses received more timely follow-up after discharge.
- Fewer than 10% of patients meeting the federal definition of homelessness were housed during the initiative. Systemic challenges, including a lack of affordable housing options, hampered successful housing placement.
- CCA clinicians reacted positively to the initiative, particularly the paramedicine component, and gained palliative care knowledge.
- The initiative increased awareness of local social services among CCA staff and prompted a reevaluation of data collection processes.
- CCA planned to incorporate most program elements into its ongoing operations, with some revisions based on lessons learned during the TCCI Program.

> *"Most of [the patients] who are admitted, they have mental health issues, they have substance abuse issues. A lot of them are homeless... They get lost and fall through the cracks because of their illnesses."*
>
> **– CCA HEALTH OUTREACH WORKER**

HEBREW SENIORLIFE

Hebrew SeniorLife (HSL) developed the Right Care, Right Place, Right Time (R3) initiative to coordinate care for residents in supportive housing. The initiative embedded wellness teams in affordable senior housing sites to help residents with low incomes manage health care and health-related social needs.

IMPACT

- Ambulance transports to the ED from participating sites decreased by 18%.
- Over 90% of at-risk enrollees participated in fall prevention and medication adherence programs.
- Participants felt that R3 was a helpful support, a good source of information, and a resource for routine monitoring and assistance.[4]
- R3 built a wide network of partners. It also facilitated culture change at housing sites that had not previously offered services to residents, helping building staff become more involved in residents' wellbeing.
- The initiative allowed HSL to refine its care model. After the TCCI Program, a revised version of the program, titled R3^2, continued with HPC SHIFT-Care funding.

> *"I have the sense that almost any physical or medical problem, I've got somebody to talk to. And the fact of being checked in with regularly does feel good."*
>
> **– HSL R3 PARTICIPANT[4]**

LYNN COMMUNITY HEALTH CENTER

Lynn Community Health Center's (LCHC) initiative deployed CHWs to coordinate complex care services for patients with serious mental illness.

IMPACT

- CHWs' low caseloads, flexibility, and responsiveness supported efforts to address patients' needs.
- Initiative staff reported positive feedback from clinicians within LCHC as well as from other groups such as specialists and hospitals.
- LCHC planned to continue the evidence-based elements of its model after the TCCI Program through the MassHealth Behavioral Health Community Partners program.

SPAULDING HOSPITAL CAMBRIDGE

Spaulding Hospital Cambridge's (SHC) post-acute care transition (PACT) program provided cross-setting case management and palliative care coordination for chronically critically ill patients. The initiative's program manager remarked upon this group's complex needs: **"This particular population of patients [is] at the highest risk... Some of them would get stuck living inpatient for the rest of their lives because there were no discharge options in the community."**

IMPACT

- The percentage of eligible patients discharged home within 30 days of leaving SHC increased by 18%.
- The initiative strengthened SHC's relationships with visiting nurse agencies and educated existing SHC inpatient care managers about the PACT population.
- After the TCCI Program, SHC absorbed some elements of the initiative into existing workflows but discontinued dedicated transitional case management positions due to a lack of demonstrated length of stay reduction.

KEY CROSS-INITIATIVE THEMES

While initiatives varied substantially, common themes emerged across awardees. First, awardees deployed innovative interventions that coordinated across sectors to meet the needs of their complex populations. Second, addressing patients' health-related social needs was central to many initiatives' efforts to improve care and reduce costs, but alleviating underlying social determinants of health was often difficult even with well-developed, evidence-based approaches. Third, the initiatives were flexible and responsive in adapting to challenges. Lastly, initiatives had demonstrable positive impacts on patients, though data collection limitations made it difficult to use data to fine-tune their programs and produce actionable self-evaluations in real time.

ADDRESSING FRAGMENTATION THROUGH PARTNERSHIPS

Fragmentation occurs when patients receive care from many sources that each focus on a narrow portion of the patient's needs without coordinating with one another.[9-11] These divides occur between different medical specialties,[9] as well as among medical, behavioral health, and social service providers.[10] Such fragmentation leads to poor patient outcomes, increased utilization, lower patient satisfaction,[11-14] and higher costs.[12, 15] However, cross-sector partnerships— which enable integrated delivery systems,[9, 16, 17] increased information-sharing,[9, 17] and other forms of interdisciplinary cooperation[10, 17-20]—can reduce fragmentation and help to minimize these negative effects. They do so in part by enabling care coordination, an evidence-based strategy that increases continuity of care and improves patient outcomes.[19, 21, 22]

"This grant has encouraged a lot of cross-partnering between many, many groups."

– BERKSHIRE MEDICAL CENTER BEHAVIORAL HEALTH SPECIALIST

Building such partnerships was a major focus of TCCI Program initiatives, and awardees worked with more than 60 community organizations, including housing, shelter, school, and primary care partners. The TCCI Care Coordination Case Study explored how multidisciplinary partnerships reduced fragmentation and improved care within the four initiatives.[3] Like many awardees, the four featured in the case studies worked with medical, behavioral, and social service providers to meet patients' complex medical and psychosocial needs. Initiative staff considered ongoing communication between partners to be essential to coordination of services for patients. By establishing trusting relationships with participants, often facilitated by home visits, initiative staff were able to obtain current patient information and share it with other partners to support better care coordination. Initiative staff, staff at partner organizations, and patients all valued care coordination, but they were also aware that factors such as technological barriers and time constraints sometimes limited its impact.

"I have five doctors and two, maybe three [case managers] and they all talk to each other."

– BHCHP SDH CONSORTIUM PATIENT

BCMHC's evidence-based Healthy Lives model is one initiative that used partnerships to reduce fragmentation and meet patients' needs. The initiative worked closely with patients' primary care practices. In the words of one Healthy Lives team member, it aimed to act as **"an extension of primary care planning."** Healthy Lives staff and primary care providers communicated regularly and used a shared electronic medical record (EMR). In addition, the Healthy Lives team made regular home visits with patients, relaying any new information to primary care partners. Primary care providers felt that Healthy Lives uncovered patients' circumstances and conducted follow-up in a way they could not, particularly for complex issues. These strategies resulted in measurable improvements for patients.

"It's a more effective intervention than anything I could do over the phone."

– BIDCO STAFF MEMBER (HEALTHY LIVES)

However, most awardees also encountered challenges with sharing information and integrating technology across organizations, even with initiative partners. Accessing EMR data to support care coordination was often difficult. Some awardees implemented robust data-sharing platforms that minimized these barriers, while others relied on regular meetings and ad hoc communication. For example, Care Dimensions' PC+ initiative did not have access to primary care practices' EMRs—a limitation that burdened both PC+ team members and primary care staff. However, Care Dimensions and the primary care providers still worked together to improve communication and coordination, remaining in constant contact. These efforts facilitated measurable improvement in patient outcomes.

"Without EMR access, a lot of time is wasted running around being the messenger."

– NORTH SHORE PHYSICIANS GROUP (NSPG) HIGH-RISK NCM (PC+)

CONFRONTING SOCIAL DETERMINANTS OF HEALTH

> *"The nicest, most caring social workers just cannot fix the system."*
>
> **– BCMHC HEALTHY LIVES PATIENT**

Many initiatives were designed to help patients with health-related social needs. However, addressing social determinants of health—the conditions in people's environments that fundamentally shape their health and wellbeing[23,24]—was more challenging. Poverty and community-level economic inequality,[25,26] structural and interpersonal racism,[27-29] and other social determinants of health[30,31] deeply influence individuals' health and social needs. Value-based payment models can support health system efforts to address some of these issues.[23,32,33] However, these barriers can challenge even evidence-based care delivery interventions, often requiring broader systemic changes[23, 34] beyond what individual initiatives could effect.

BHN's Project FIT was among the initiatives that assisted with health-related social needs, but struggled in the face of underlying social determinants of health. Patients faced a lack of affordable housing, legal difficulties, marginalization within the community and school system, and interpersonal and structural racism. Project FIT staff and their housing partners struggled to fully address these problems despite the initiative's evidence-based care model. One housing partner staff member expressed this difficulty: **"What we can give participants is never enough. It gets overwhelming when the need is greater than can be met."** While the initiative did have positive impacts for patients, families continued to face poverty, housing insecurity, limited access to school services, and other challenges.

> *"There were definitely times where we did not recognize the service that [the lawyer] could provide, that there actually was a legal need. And she would step in and provide guidance."*
>
> **– BMC HT2 PROGRAM MANAGER**

Initiative staff employed a variety of strategies to counter issues related to social determinants of health and health-related social needs. BMC's HT2 program provides an example of one innovative approach. Knowing that myriad socioeconomic challenges exacerbated patients' medical and behavioral health needs, the team partnered with legal experts. MLPB staff trained CHWs on legal issues, provided input and guidance regarding specific patients, and offered rapid-response support and connections to legal resources. For example, MLPB helped by stepping in during eviction proceedings, identifying legal resources for transgender patients, and assisting patients with immigration status issues. This support allowed CHWs to address patients' social needs more effectively.

ADAPTING TO CHALLENGES

Flexibility and adaptation are essential for successful care delivery transformation. The most effective quality improvement approaches involve testing a change, evaluating it, and revising as needed.[35-37] Awardees adjusted to a wide range of challenges during implementation. This happened through both on-the-ground quality improvement efforts and more significant model adaptations.

Initiatives were designed to improve care for complex populations, and teams had to be flexible, creative, and persistent in addressing their patients' needs and barriers. BHCHP's evidence-based SDH Consortium initiative was among those that effectively responded to the changing and individual needs of its participants. The initiative focused on some of Boston's highest-need patients, who faced significant health-related social needs and often had severe trauma histories. Because many patients did not have stable addresses, finding them for initial outreach could be difficult. As a member of the BHCHP medical/behavioral health team remarked, **"The [case manager] has to go out, figure out who they are, find them, and get to know them."** To address this barrier, BHCHP implemented client-centered care planning through street outreach and persistent, nonjudgmental contact. Team members used creative strategies to locate patients, such as referring to photographs, speaking with shelter receptionists, and following patients to places where they often spent time. This approach allowed the SDH Consortium to meet the challenges of its hard-to-reach target population and led to measurable success.

> *"Patients need to trust in you and your team. Nothing will happen if you don't have that trust."*
>
> **– BHCHP MEDICAL/BEHAVIORAL HEALTH TEAM MEMBER (SDH CONSORTIUM)**

Other challenges did not reveal themselves until program implementation and, in many cases, led to model adaptations. For instance, the Care Dimensions PC+ team found unexpectedly high hospital readmission rates in the initiative's early data. To counter this, the team increased its emphasis on facilitating patient transitions of care, particularly for patients returning home from a hospital or rehabilitation facility. Leaders also decided to keep patients in the initiative longer than originally planned: as they explained in their interim self-report, **"We realized that in order to assist patients with a reduction in unwanted ED visits and hospitalizations we needed to maintain contact even when their serious illness symptoms plateaued."** This shift meant increasing staffing in patient-facing clinical roles and decreasing other positions to compensate.

DEVELOPING SELF-EVALUATION AND MONITORING CAPACITY

Almost every awardee had challenges gathering KPI data to report to the HPC, with some facing substantial and persistent barriers to data collection. This challenge was often greatest for awardees that lacked staff with training and experience in quality improvement and measure design or that did not have access to institutional data systems and expertise. While the HPC accommodated awardees' decisions to prioritize directing resources to service delivery over data collection when resource constraints necessitated a choice, these limitations hampered awardees' abilities to fine-tune their programs and produce actionable self-evaluations in real time. Nevertheless, all were able to gather useful data for analysis at the end of the initiative, and a smaller portion were able to use data in real time to guide their initiatives.

> *"We would value the ability to use data in aggregate to guide model development and modification. We do not have the capacity for analyzing and using the data in that way."*
>
> **– BHN PROJECT FIT INTERIM SELF-ASSESSMENT**

BHN's Project FIT experienced firsthand the challenges of data collection. The initiative was well-designed and appeared to benefit its target population. As one participant expressed, **"[I] don't know where the FIT program came from, but I thank God for them. They came into my life when I was overwhelmed and helped me."** However, the team did not have a dedicated quality improvement staff member to design, collect, and analyze outcome measures to prove the initiative's efficacy. Staff received data from social service and medical partners and did their best to record information through modified EMR fields, but found the process time-consuming and difficult. At the end of the initiative, BHN had usable data for some KPIs, but not all. In addition, they were not able to analyze data in real time to inform adaptations to the initiative.

In contrast, data analysis was central to HSL's R3 initiative. The team created a detailed data collection plan, regularly received data from partner organizations, and discussed findings with R3 and housing site staff during regular meetings. While information on some topics—such as ED and hospital use—proved difficult to access, the team collected a wide range of data to support both program evaluation and real-time improvements. The team found data on 911 calls and ED transports to be indispensable, allowing them to follow up with patients, track R3's impact, and identify unaddressed needs. After learning that some residents planned ED trips in advance, for instance, the R3 team created an educational program about urgent care options. In the words of R3's investment director: **"Our best source of data has been the ambulance data… We get so much information out of those reports that we're able to use to help shape our intervention and support for [residents]."**

SUSTAINABILITY

Sustainability refers to the ongoing use of an initiative's components to continue achieving desired outcomes. It is often a dynamic process in which organizations maintain some model components, discontinue others, and make adaptations in response to new evidence or changing circumstances.[38] Within the TCCI Program, five awardees sustained their models nearly in full, three sustained portions of their model, and two discontinued their initiatives. Regardless of how much of the original program design was sustained, most initiatives stimulated improvements in internal process and organizational capacity that continued to influence practice.

Financial, non-financial, and organizational factors all played a role in determining if or how to sustain initiatives after funding ended. Since the initiatives sought to reduce utilization of costly hospital services, their success was strongly associated with the presence of APMs that encourage investment in infrastructure, activities, and staff that enable efforts to prevent avoidable utilization. Though APM adoption had been increasing for several prior years, during TCCI Program implementation in 2017 and 2018, the overall rate of APM adoption in Massachusetts' commercial plans declined.[39, 40, 41] The MassHealth ACO program increased APM adoption both before and during TCCI and provided valuable opportunities for a number of awardees to continue at least some initiative elements, particularly through the MassHealth Behavioral Health Community Partners program. Overall, the disjointed rollout of APMs (with commercial, state, and federal payers moving forward at different rates)[39] generally complicated the sustainability landscape for funded initiatives. Absent consistent avenues for value-based payment, awardees struggled to fund program elements that were not reimbursable in a fee-for-service environment (e.g., care coordination, workforce whose time is not billable such as CHWs and patient navigators).

Given this challenging environment, awardees with strong leadership engagement and buy-in to a broader concept of value often had greater success in sustaining their programs. Many awardees that sustained their programs emphasized the importance of positive patient outcomes and patient, provider, and staff satisfaction in their assessment of the program's value. They also noted alignment with organizational mission as a strong rationale for sustaining their initiatives. Generally, awardees that had piloted previous iterations of their models were more likely to sustain their models after the funding period. These more mature initiatives often had stronger program designs, strong institutional commitment, and more opportunity to demonstrate value and develop viable funding approaches.

CONCLUSION

The awardees developed innovative and multidimensional interventions, coordinated across organizations in multiple sectors, and adapted to programmatic and structural challenges. Although the awards spanned many settings, all the programs provided critical support to patients with complex needs, including serious medical conditions, multiple comorbidities, behavioral health conditions and substance use disorders, significant economic and social needs, and/or trauma histories. Initiatives had demonstrable positive impacts on patients, despite the presence of significant needs and systemic barriers. Furthermore, patient satisfaction in awardee-administered surveys was high.

Some awardees observed notable impacts on targeted utilization opportunities, including readmissions, ambulance transportation, and total health care costs. Others made meaningful improvements in addressing health-related social needs like housing security or increasing access to behavioral health services. Awardees varied in their abilities to sustain their programs fully after funding ended, but most continued some elements of their initiatives and maintained organizational capacity to better meet the needs of their patients.

The ten awardees came to the TCCI Program with varying levels of institutional capacity and experience implementing quality improvement initiatives. Some awardees chose to build on earlier versions of models that had already been tested at their sites, while others piloted new roles or services. This variety generated an abundance of learning, which offers operational insights to organizations or policymakers who are interested in advancing similar programs.

The experience of the TCCI Program informed the HPC's ongoing investment strategy. In particular, initiative results underscored the importance of addressing patients' behavioral health and social needs in concert with their medical needs. They also reinforced the value of multidisciplinary teams to coordinate care across partner organizations. Through the TCCI Program, awardees developed experience and skills in crafting, testing, and implementing evidence-based models to improve outcomes for some of the Commonwealth's most complex populations.

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PART TWO:

FINDINGS FROM THE TCCI PROGRAM INITIATIVES

BEHAVIORAL HEALTH NETWORK

INITIATIVE SUMMARY

TARGET POPULATION: Families in Hampden County who recently experienced homelessness or were at risk of experiencing homelessness, with at least one member with undertreated substance use disorder (SUD) and/or mental illness.

FOCUS AREAS: Maintain families in stable housing. Improve school attendance. Improve Protective Factors Survey scores. Reduce emergency department (ED) visits and inpatient admissions.

INTERVENTION: Families in Transition (Project FIT) worked with families to create personalized and adaptive care plans and collaborated with multisector partners to address families' medical, behavioral, and health-related social needs.

KEY TAKEAWAYS:

» Homelessness and unstable housing decreased by 43%.

» Absences from school decreased, though other school-related challenges remained.

» Patients reported many gains from Project FIT but continued to face substantial systemic barriers that limited their progress.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

Project FIT targeted Hampden County families with a child under age 18 in the household (or a reunification plan in place), housing instability, and at least one member with undertreated SUD and/or an unmet mental health need. The initiative aimed to maintain families in stable housing, improve school attendance, improve Protective Factors Survey[iii] scores, and reduce ED visits and inpatient admissions.

STAFFING MODEL AND KEY PARTNERS

The Project FIT team consisted of six full-time community health workers (CHWs), four clinical care managers (CCMs; each 0.6 full-time equivalent [FTE]), and a full-time program coordinator who managed day-to-day operations.[iv] Three CCMs were

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[iii] The Protective Factors Survey measures family characteristics that help to prevent child abuse and neglect.

[iv] An investment director (0.04 FTE) and project manager (0.05 FTE) supported this team. In addition, a nurse care manager and a trauma specialist provided in-kind assistance, but were not utilized frequently.

licensed mental health counselors (LMHCs) and one was a licensed clinical social worker (LCSW). Key partners included the Springfield Housing Authority and Way Finders, both housing providers and important sources of referrals for the initiative.

SERVICE DELIVERY MODEL

Project FIT worked to provide stability to families through high-touch care coordination that connected behavioral health, primary care, housing supports, and vocational services. When planning their initiative's care model Behavioral Health Network (BHN) drew on a study of the impact of housing security on health care costs and the 10th Decile Project as well as previous experience in creating a health home with Commonwealth Care Alliance.[1,2] Participation required referral from a clinician, partner organization, or community member. After confirming a family's eligibility, the program coordinator assigned a CHW/CCM team. This team contacted the head of the household to introduce the initiative and set up an intake appointment at the family's preferred time and place. Ideally, all children were present for the meeting; however, meetings often took place during school hours, requiring follow-up sessions. During the assessment, the CHW and CCM talked with family members about their priorities and goals, using both a narrative approach and structured assessment tools. The CCM then completed the care plan, the CHW reviewed it with the family, and the team made modifications as needed.

Following the initial assessment, the CHW worked with the family to implement the care plan, with support, guidance, and occasional direct involvement from the CCM. CHWs contacted patients at least monthly to assess progress toward goals. In addition, they connected patients with a variety of services and supports, including behavioral health care, social services, housing, family reunification, vocational support, and primary care. Families remained in Project FIT until they were securely housed and/or connected with treatment. Most continued to participate through the lifetime of the initiative, with an average length of participation of nine months. After families met their goals, the CHW/CCM team conducted a final session with the family and discharged them from the initiative.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

BHN originally planned for Project FIT to provide integrated behavioral health, primary care, and social services. However, the team deemphasized primary care provision after reevaluating patient needs and staffing feasibility. While BHN had expected to hire a Baystate Health nurse practitioner (NP) to provide primary care services, Baystate had competing priorities due to its concurrent accountable care organization (ACO) launch. Project FIT staff, meanwhile, discovered that many patients already had primary care providers (PCPs), but had higher-than-anticipated social needs. The team also received feedback early in the program that CHWs were not able to spend enough time with families.

As a result of these factors, BHN redirected funds into additional CHW and CCM positions. They also decided not to hire an advanced practice registered nurse (APRN) to prescribe psychiatric medications, instead bringing in a nurse to consult with CHWs and/or families when needed. Plans to install a software package for data tracking also did not come to fruition, as the team decided their limited resources would be better directed to service provision than to data collection.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Many Project FIT families had negative experiences with social service organizations, which initially made them wary of the initiative and skeptical of its ability to help. CHWs eased these concerns by building relationships with patients. Their low caseloads allowed them to work closely with families, while their training on SUD and mental health topics helped them build connections with patients more effectively. In addition, most CHWs had similar demographics and spoke similar languages as patients, and many had shared experiences with behavioral health, housing, and other social needs.

Once patients enrolled in the program, Project FIT centered their needs, goals, and priorities. Care plans emphasized patients' perspectives and were updated as patients made progress or experienced changes. Because CHW/CCM teams focused on the family unit as a whole, they were able to understand and address individual patients' holistic needs. This focus on the family unit required Project FIT staff to coordinate across multiple systems (e.g., schools, medical and behavioral health providers, and housing services) to address families' wide-ranging needs, a process which required significant time from the CHW/CCM teams.

Based on patients' priorities, CHWs connected families with needed services and served as advocates with other organizations, such as the Department of Children and Families (DCF). However, systemic barriers complicated these efforts. Challenges included limited affordable housing, a shortage of behavioral health providers, inequities in special education, barriers to transportation access, and, more broadly, structural racism within local institutions. In addition, some families dropped out of the initiative after resolving a key issue or as a result of unforeseen life events.

Partnerships

Regular contact with partners was important for coordinating patient assistance, particularly given that patients interacted with so many agencies. Project FIT worked most closely with housing partners, strengthening existing relationships. To promote coordination, BHN and housing partners had monthly leadership meetings to discuss implementation successes and barriers. CHWs and CCMs also met regularly with housing case managers—often with families present—to share information and discuss plans and progress. Ad hoc communication took place by phone and secure email. BHN did not formally share care plans with partner organizations, instead discussing patient needs case-by-case.

In contrast to their relationships with housing partners, Project FIT staff felt that buy-in from some other partners was limited. For example, Baystate Health had competing priorities due to its concurrent ACO launch. Staff reported that primary care providers often did not respond to outreach attempts. They also perceived some medical and social service providers as approaching patients judgmentally rather than recognizing the underlying challenges that drove their behavior.

BHN emphasized internal communication among the Project FIT team. To encourage collaboration between CHWs and CCMs, BHN scheduled mandatory team meetings. In addition, weekly clinical case review meetings allowed teams to discuss specific families and receive advice from management staff and the nurse care manager. When challenging situations arose, staff reached out to the project coordinator for consultation. They also often worked through patient issues with their peers and other staff and clinicians within BHN.

> *"I think it's been more beneficial to work together [with our housing partners] than everybody working separately, not knowing who's doing what."*
>
> **– PROGRAM COORDINATOR**

Technology and infrastructure

Project FIT incorporated data from a number of sources. Staff linked individuals' charts into family units within BHN's electronic health record (EHR) and used a referral log to track patients. With authorization from families, BHN and its partners shared patients' medical, school, and housing data. However, patient-facing staff often prioritized service delivery and connections with patients over documentation and completing forms. In addition, many families dropped out of the initiative before the team could conduct a discharge meeting, complicating collection of follow-up screening measures.

While BHN had planned to use a new care management software package to support Project FIT, it was not ready in time for the initiative's launch. They, therefore, redirected resources to reconfiguring BHN's existing EHR. A number of data elements needed to be collected by hand or through patient self-reporting, and a key data system went down during the initiative. Because Project FIT did not have a dedicated staff member for data analysis, addressing these challenges became a time burden for the program team.

IMPACT

PATIENTS SERVED

Project FIT enrolled 163 families, consisting of 423 individuals. Single mothers headed the majority of enrolled families. Over the course of the initiative, the team made 6,493 contacts with families. When the program reached full operational capacity at three months, the team served an average of 153 individuals and conducted an average of 406 contacts each month.

RESULTS TIED TO INITIATIVE GOALS[v]

Of 131 families with complete housing information, the percentage who were experiencing homelessness or unstable housing decreased by 43%, falling from 75% at enrollment to 43% at program completion. Among 38 children with two or more school absences per month, the number of monthly missed days decreased from 3.77 to 2.54. Data collection challenges precluded analysis of Protective Factors Survey scores and ED and inpatient utilization.

PATIENT EXPERIENCE

During Care Coordination Study interviews conducted with patients in a subset of TCCI Program initiatives including Project FIT, patients reported many benefits from Project FIT.[3] Most greatly valued their connections with Project FIT teams and recalled times when their CHW or CCM helped them with an important issue. Many said that they had learned to advocate for themselves or that initiative staff had become role models for handling crises. At the close of the initiative, loss of relationships with CHWs and CCMs was emotionally difficult for families, and BHN reported that some patients chose not to participate in other programs.

> *"The CHW and CCM were like guardian angels for me and my son."*
>
> **– PROJECT FIT PATIENT**

Despite Project FIT's best efforts, community-level inequities limited its progress. These included substantial systemic barriers around issues such as transportation, urgent primary care appointments, and experiences of judgement and bias within institutional systems. The Care Coordination Study also revealed widespread gaps in access to summer special education programs to which children were entitled.[3] Even when participants experienced a notable accomplishment, many expressed fears that something would happen to diminish their progress.

STAFF EXPERIENCE

Project FIT staff reported that they enjoyed working with families and that patients' successes felt like their own. Focus groups[3] revealed that both Project FIT and housing partner staff valued collaboration, feeling that this was more efficient for staff and less overwhelming for families. Project FIT staff also felt supported by the CHW/CCM team structure, including the skills and perspectives it provided. Both Project FIT and housing partner staff expressed frustration with systemic barriers, perceived lack of responsiveness on the part of medical providers, and overall resource limitations.

> *"What we can give participants is never enough. It gets overwhelming when the need is greater than can be met."*
>
> **– SPRINGFIELD HOUSING AUTHORITY STAFF MEMBER**

PROGRAM SUSTAINABILITY

Holyoke Public Schools received a grant to continue Project FIT services for families within the public school system who were experiencing homelessness. Blue Cross Blue Shield of Massachusetts awarded a grant to Way Finders to incorporate the behavioral health aspect of Project FIT into its existing housing program. However, BHN discontinued CHW case management and care coordination due to a lack of reimbursement or other funding.

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BERKSHIRE MEDICAL CENTER

INITIATIVE SUMMARY

TARGET POPULATION: Primary care patients diagnosed with a mental illness, substance use disorder (SUD), or co-occurring disorder.

FOCUS AREAS: Decrease emergency department (ED) visits. Decrease detoxification or residential treatment admissions. Improve health outcomes. Improve pain self-advocacy.

INTERVENTION: To improve access to behavioral health care, Berkshire Medical Center co-located behavioral health teams at partner primary care practices and provided telepsychiatry appointments.

KEY TAKEAWAYS:

» Over 1,300 patients accessed behavioral health care in a primary care setting.

» ED visits and inpatient admissions decreased.

» Connections with primary care practices facilitated patient enrollment and participation.

» Limitations in the local mental health system presented challenges.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

Berkshire Medical Center's initiative targeted primary care patients diagnosed with a mental illness, SUD, or a co-occurring disorder. This population included many patients who did not need acute behavioral health care, but who nevertheless struggled with conditions such as alcohol use disorder and undiagnosed or undertreated mental health conditions.

The initiative's primary goal was to decrease ED visits, with secondary goals of decreasing detoxification or residential treatment admissions, improving health outcomes, and improving pain management self-efficacy. In addition, the team hoped to increase access to behavioral health care and demonstrate the value of incorporating behavioral health and community health workers (CHWs) into primary care.

STAFFING MODEL AND KEY PARTNERS

Core staff consisted of three full-time behavioral health specialists (BH Specialists) and three full-time CHWs, supported by a psychiatrist (0.35 full-time equivalents [FTE]).[v] BH Specialists were licensed clinical social workers (LCSWs). This team partnered with six primary care sites, including three local primary care practices and three sites of a local Federally Qualified Health Center (FQHC).[vi]

SERVICE DELIVERY MODEL

To improve access to behavioral health care, Berkshire Medical Center co-located behavioral health teams (BH teams) at six partner primary care practices and provided telepsychiatry appointments, drawing on a model for integrating depression treatment into primary care practices.[1] Each of the three BH teams, consisting of one BH Specialist and one CHW, divided their time between two primary care sites. The initiative's psychiatrist supported all sites through telemedicine.

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[v] The initiative's investment director (0.25 FTE), an LCSW, also provided support.

[vi] The FQHC, Community Health Programs (CHP) consisted of North Adams CHP, Pittsfield CHP, and Adams CHP. Other primary care practices included Hillcrest Family Health Center, Suburban Internal Medicine, and East Mountain Medical Associates.

A patient's participation in the initiative typically began with identification by a primary care provider (PCP), followed by a warm handoff to the BH Specialist. The patient then met with the CHW for enrollment and initial screenings, after which the BH Specialist completed a psychosocial evaluation and developed a care plan in collaboration with the patient and the CHW. These plans included information about patient goals and outlined the frequency and likely number of sessions. BH Specialists shared the care plans with PCPs and incorporated the PCP's input whenever possible. In some cases, the PCP and the BH Specialist communicated in advance to develop an initial strategy, which the BH Specialist refined after meeting with the patient.

> *"The community health worker is a fantastic addition... She can extend my reach."*
>
> **– BH SPECIALIST**

After intake, patients participated in services as needed. The BH Specialist typically provided brief stabilizing treatment at the primary care practice with a referral to longer term specialty behavioral health care and/or community agency support when indicated. For patients requiring psychiatric consults, the BH Specialist introduced the telehealth platform and the BH Specialist or CHW attended the session with the patient. Their presence helped address some patients' initial hesitation about using a virtual system to discuss sensitive information. The CHW also assisted patients with social needs, coordinating with the BH Specialist to develop a follow-up plan that provided a recommended level of support that would feel manageable to patients. Some patients also enrolled in the initiative's Mindfulness-Resiliency-Gentle Movement groups.

Patients typically returned for one to 10 sessions of treatment, with the average length of participation being two to three months. During this time, the BH Specialist shared updates with the referring PCP. If patients needed longer-term or more specialized treatment, the BH team helped them identify those resources and provided referrals. In addition, the initiative's psychiatrist offered medication consultation to PCPs. Adoption of medication consultation was initially limited and improved with education and support to the PCPs (see Partnerships section, below).

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

Berkshire Medical Center's initiative built on their previously piloted models of behavioral health integration and virtual behavioral health care. The most significant changes to their model for the TCCI Program included the addition of CHWs to the team and the development of Mindfulness-Resiliency-Gentle Movement groups for enrolled patients. There were no major changes to their program design during implementation.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Connections with PCPs were valuable to Berkshire Medical Center's initiative. Patients' existing relationships with their PCPs led to their more readily accepting care from the BH team. While staff reported that stigma regarding mental and behavioral health remained a problem, co-location at primary care sites reduced this challenge by normalizing behavioral health needs and making treatment more accessible. Still, staff reported that lower-income patients often faced barriers and competing priorities that made consistent participation more difficult; however, CHWs were able to assist with a range of social needs including access to transportation and child care. Continued follow-up ensured that support services adapted to changes in patients' circumstances.

> *Being able to have [a behavioral health clinician] right in the office [is] amazing... The sheer change in how sick you have to be to finally get some help is a huge advantage."*
>
> **– PCP**

While BH teams effectively connected with patients at primary care sites, a shortage of local outpatient therapists made it difficult to refer patients to other behavioral health services when their needs exceeded the scope of the initiative. Even when providers were available, many patients and PCPs hesitated to connect with these other behavioral health providers. For some patients, this hesitation was because they felt attached to the BH team. Patients also appreciated the convenience of being able to receive all their care in one location. PCPs similarly reported satisfaction with the rapid access to the embedded BH team and the consistent, up-to-date communication about patient status. Both patients and providers stated a preference for on-site behavioral health care and reported concerns about long waiting lists or "falling through the cracks" in the community mental health system. While this hesitancy may be viewed as an endorsement of the integrated behavioral health services provided at the primary care sites, the result was challenging for the BH teams, which became responsible for managing higher complexity patients over longer periods of time.

Partnerships

Embedding the BH Specialists and CHWs in the primary care practices promoted collaboration and communication between BH teams and primary care staff which fostered closer connections and greater awareness of the BH teams' services. Regular multidisciplinary meetings with BH teams, primary care sites, and the investment director enabled coordination across the six sites. The initiative team also provided in-service training and other support to PCPs, including educational sessions about psychiatric prescribing.

Developing new workflows and gaining buy-in from primary care staff took time. Staff turnover at the primary care practices required ongoing relationship-building and provider education. PCPs' approaches to and comfort with new roles, such as the telepsychiatrist, varied and sometimes hindered uptake of medication consultation services. Initially, a number of PCPs hesitated to prescribe psychiatric medications. The initiative team worked to address this reluctance by talking with PCPs about their concerns and moving toward consensus-driven criteria for psychiatric consultation and co-management—an evidence-based approach with a proven impact on patient outcomes.[1]

Technology and infrastructure

Technology was a key enabler of coordination within the initiative. Secure video conferencing facilitated cross-site communication, allowing the team to check in with sites, provide real-time consultation, and promote coordination between practices and BH teams. Electronic medical records (EMRs) enabled communication through their "tasking" function and shared access to notes—though lack of EMR interoperability across several of the six sites sometimes required time-intensive workarounds. In addition, a Microsoft Excel–based data registry showed when patients were overdue for follow-up or if their screening score had changed notably. While some sites had challenges with connectivity and sharing large data files, these methods for data sharing were ultimately helpful to the initiative.

IMPACT

PATIENTS SERVED

The initiative enrolled 1,318 patients, who received 2,900 psychotherapy sessions,[vii] 338 telehealth behavioral health sessions, and 984 psychiatric evaluations. In addition, CHWs made 2,102 patient contacts.

RESULTS TIED TO INITIATIVE GOALS[viii]

ED visits and inpatient admissions decreased somewhat during the initiative. Among approximately 410 patients with 12 months of enrollment data, average annual ED visits decreased by 2% and inpatient admissions by 14%.[ix] Changes in health outcomes and pain management self-efficacy could not be assessed because relatively few patients completed follow-up screenings.

Initiative leaders noted that these findings might not reflect the full impact of the program. For example, improving access to behavioral health and SUD services might temporarily increase utilization, with longer-term declines in utilization emerging later.

PATIENT EXPERIENCE

Based on day-to-day interactions and informal outreach to over 1,000 patients, behavioral health teams reported that patients appreciated integrated behavioral health services. The team recalled some patients' stating that they only participated in behavioral health treatment because of the safety and normalcy of the primary care office. The initiative also reduced wait times, allowing patients to see a psychiatrist within a week rather than months.

[vii] Defined as in-person behavioral health care by a BH Specialist and/or participation in a mindfulness group.

[viii] *Data sources:* EMR (limited to BHS). Baseline: Enrolled patients in the year prior to enrollment.

[ix] For these patients, average annual ED visits fell from 1.11 to 1.09 visits per year and average annual inpatient admissions fell from 0.29 to 0.25 visits per year. While moving in the right direction, these findings are not statistically significant.

Patient stories also show the impact of the initiative. In one instance, a patient dealing with depression and suicidal ideation after her child's death shared those experiences with the BH team. The team arranged for her to enter inpatient care and kept in touch with her during her stay. Afterward, they adjusted her medication, connected her with a bereavement group, and provided counseling via the BH Specialist. In another case, the BH Specialist worked closely with a patient who struggled with hoarding and a history of mental health conditions. The BH Specialist provided treatment and connection to other resources, and a CHW conducted home visits to support decluttering. CHWs also worked with patients on a range of social needs. This support included helping a patient who had become homeless obtain shelter, get copies of identification documents, apply for disability benefits, and connect with an organization that would help him get health insurance. The patient ultimately secured housing and resumed attending medical appointments.

STAFF EXPERIENCE

According to initiative leadership, BH teams felt positively about being in primary care practices and supporting patients who might not otherwise have received behavioral health care. The team also recalled PCPs expressing that the initiative helped them manage behavioral health needs more effectively, explore a wider range of issues with patients, and feel more supported in this process. PCPs sometimes requested that patient cases be "handled in-house" (i.e., by the BH team) rather than externally by local mental health providers, which BH teams felt reflected satisfaction with the initiative.

> *"'Proud' isn't even the right word. I'm enormously gratified by the way in which we have closed the gap in services."*
>
> **– BH SPECIALIST**

PROGRAM SUSTAINABILITY

After the initiative, the team secured BHS support to sustain behavioral health integration as an ongoing initiative. BHS decided to embed behavioral health services in nine BHS-affiliated primary care practices, allocating funds to employ independently licensed BH Specialists (4.6 FTE) and psychiatric provider support. This revised approach aligns with evidence-based collaborative care models.[1] While BH Specialist services are reimbursable, the limitations of a fee-for-service environment led BHS to discontinue CHW positions and reduce telepsychiatry services, which were reimbursable for only a very limited number of patients at the time of the initiative.

BHS decided to partially continue the model by reviewing data on organizational costs, billing and revenue, utilization, and patient experience. They developed the new model's structure, target volume, and target productivity to be budget-neutral or -favorable. In addition, BHS hoped that the new model would contribute to PCP satisfaction and retention and provide an important resource for patients.

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BOSTON HEALTH CARE FOR THE HOMELESS PROGRAM

INITIATIVE SUMMARY

TARGET POPULATION: High-cost Medicaid patients with frequent emergency department (ED) and/or hospital utilization in the past six months who were already known to Boston Health Care for the Homeless Program (BHCHP).

FOCUS AREAS: Reduce total ED visits and inpatient admissions. Increase access to services that address health-related social needs. Improve patient-reported health measures.

INTERVENTION: BHCHP leveraged a Social Determinants of Health (SDH) Consortium to serve as a hub to address patients' health-related social needs in a coordinated way.

KEY TAKEAWAYS:

- ED visits decreased by 23%.
- At program end or disenrollment 35% of enrolled patients had housing, compared to 25% at the start of the initiative.
- Patients felt supported by case managers' dedication and the effort they made to communicate with patients' care teams and social service providers.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

The SDH Consortium targeted the highest-cost Medicaid patients who had high ED and/or hospital utilization in the past six months and were already known to BHCHP. These patients faced housing insecurity and often had histories of trauma. The initiative's primary aim was to reduce patients' total ED visits and inpatient admissions. Secondary goals were to increase access to services that address health-related social needs and to improve patient-reported health measures.

STAFFING MODEL AND KEY PARTNERS

The SDH Consortium team consisted of case managers (CMs; 4 full-time equivalents) and a full-time registered nurse (RN) clinical navigator. CMs were employed by five Consortium partner organizations: Boston Public Health Commission, Casa Esperanza, The New England Center and Home for Veterans, Saint Francis House, and Victory Programs, while the RN clinical navigator was employed by BHCHP. Four additional Consortium partners served in an advisory capacity: Bay Cove Human Services, Boston Rescue Mission, Massachusetts Housing and Shelter Alliance, and the Pine Street Inn. The initiative also received significant administrative support from BHCHP and Consortium partner organizations, and patients' BHCHP primary care teams and behavioral health clinicians played an important role in the initiative.

SERVICE DELIVERY MODEL

The SDH Consortium integrated care across medical providers, shelters, and advocacy organizations to leverage common resources, provide better health care, and connect patients to needed services. A shared data warehouse, built within the existing Boston Department of Neighborhood Development system, supported this work. BHCHP based their care model on the work of a United States Department of Veterans Affairs program for veterans experiencing homelessness and a program serving Oregon Medicaid patients.[1-2] BHCHP had collaborated with and convened the partners of the SDH Consortium previously, creating trusting relationships on which their program was built.

The SDH Consortium identified target patients through Medicaid claims and managed care encounter data. CMs contacted, enrolled, and assessed eligible patients, then worked to address their medical, behavioral, and social needs. This work included identifying issues which increased patients' risk of hospitalizations and ED visits. CMs had caseloads of about 15 patients and interacted closely with them, including meeting in the community, accompanying them to appointments, and making hospital visits. The RN clinical navigator supported CMs in this work. The RN clinical navigator also monitored data, oversaw transitions of care, and made home visits with CMs when patients obtained housing.

BHCHP care teams collaborated with CMs and patients to develop integrated care plans and discuss patient goals. Primary care providers (PCPs), patients, and CMs sometimes met together in case conferences to generate care plans. In other instances, CMs developed care plans after meeting with patients and sent them to the BHCHP PCP for review.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

When enrollment moved slowly at the start of the initiative, several interventions were enacted to increase enrollment. BHCHP temporarily offered partners the opportunity to earn pay-for-performance incentives of $500 for each new patient enrolled and assessed, though this had limited impact.[x] BHCHP also expanded the target population from patients in the top 10% to the top 15% of Medicaid costs to increase the total number of eligible individuals, and a staff member from BHCHP increased street outreach; both adaptations had a positive impact on enrollment. Once enrollment rose, BHCHP increased the RN clinical navigator from a half-time to a full-time position and ended the incentive payments.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Reaching SDH Consortium patients for enrollment and ongoing support was often difficult. To address this challenge, the team assigned CMs based on existing institutional or individual relationships with patients in the target population. This approach—combined with the initiative's affiliation with patients' BHCHP PCPs—helped CMs locate patients and build trust. In addition, the lengthy enrollment assessments CMs conducted helped to strengthen connections with patients and provided a foundation for patient-centered care planning.

Even after patients enrolled, maintaining relationships was time intensive. Characteristics of the population, such as lack of steady addresses, absence of working phones, substance use, and mental health diagnoses, made contact and communication challenging. CMs' high-touch relationships with patients and extensive outreach attempts supported patients' ongoing engagement with the initiative. The duration of participation—typically the life of the 18-month initiative—allowed for trust to build over time.

While close relationships between CMs and patients were a strength of the SDH Consortium, staff turnover sometimes interfered with the strength of these relationships. Many patients, estranged from their families of origin, perceived CMs as family members and key sources of support. Because of the importance of these connections, patients reported experiencing severe loss, grief, and anxiety when a CM moved on. They feared being unable to connect with a new CM and not being as well understood by a new staffer as they were by their previous CM.

Limitations in the availability of medical and social services, such as substance use rehabilitation beds and affordable housing, posed challenges for meeting patients' needs. In addition, some enrolled patients died from chronic medical conditions such as malignant cancer while they were enrolled in the program. Following postmortem chart reviews, BHCHP determined that no additional care or services could have prevented these deaths; they noted that future program iterations should be more proactive in conducting end-of-life care planning.

Partnerships

The SDH Consortium built on long-standing relationships between BHCHP and its SDH Consortium partners. Organizations' relationships deepened during the initiative, including through formal data sharing agreements and increased awareness of each other's services. Partners employed their own CMs and were sometimes able to connect patients to additional resources, such as by facilitating admission into housing, job trainings, addiction programs, and day services.

Multiple forms of communication supported these partnerships. The RN clinical navigator connected BHCHP and CMs from partner organizations, through weekly meetings and regular learning sessions. Case conferences and electronic communication

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[x] This applied only to a small number of patients and was not funded through the TCCI Program.

kept CMs, PCPs, and patients informed and in agreement about patient goals. However, changing the work habits of partner CMs not accustomed to collaboration with primary care teams was a gradual process. PCPs, for their part, were sometimes slow to sign off on care plans, which delayed CMs' work.

Senior team members from across the SDH Consortium met monthly and reviewed weekly dashboards. Information sharing also occurred through the data warehouse and ad hoc emails and phone calls. However, establishing data sharing agreements took time and the delay restricted information-sharing with partners. Timely and consistent documentation by CMs facilitated standardized quality checking and data collection. CMs received training in this documentation style and the SDH Consortium team revised templates to fit the information CMs needed to record.

Technology and infrastructure

The SDH Consortium's data warehouse was central to the initiative's efforts to create an integrated delivery structure. It consolidated many types of data—shelter/bed history, upcoming appointments, care management notes, and key utilization metrics—and in doing so, facilitated communication and activity tracking, and helped CMs connect with patients. It also assisted with program reporting and stored patient-level dashboards for CMs. Initiative leaders considered the warehouse to be central to the SDH Consortium's efforts, as it allowed for efficient sharing of medical and social service data across many organizations.

> *"All of our partners work in silos and it's difficult to communicate. [The data warehouse] allows [us] to share information. Using it... has been very beneficial."*
>
> **– RN CLINICAL NAVIGATOR**

The warehouse and its functionality improved over time in response to feedback. Data sources and tools were added over time, including eventual updates that added medical record and claims data. Ongoing issues with bugs and missing data required considerable staff oversight to address, and onboarding CMs to the warehouse was time-intensive due to strict confidentiality form requirements from the City of Boston. Regular contact with the Boston Department of Neighborhood Development and its information technology vendor supported data warehouse improvements, troubleshooting, and onboarding of staff.

BHCHP and CMs also received information about patients' ED visits and inpatient admissions from a commercially available tool that tracked these events in real time. The multiple data sources and formats used within the SDH Consortium sometimes posed challenges, despite the central organization of the data warehouse. Managing the data and synthesizing information in a comprehensive and timely way could be difficult.

IMPACT

PATIENTS SERVED

The SDH Consortium enrolled 66 unique patients. CMs conducted a total of 2,176 patient encounters over the course of the initiative, as well as an additional 2,820 outreach attempts. Patients participated for an average of 13.4 months, with 45% participating for 15 or more months. Nine enrolled patients died during the initiative.

RESULTS TIED TO INITIATIVE GOALS[xi]

ED visits decreased by 23% and inpatient admissions fell by 4% relative to baseline. At program end or disenrollment, 35% of enrolled patients had housing, compared to 25% at the start of the initiative. The percentage of patients diagnosed with opioid addiction who received counseling on treatment options increased from 68% during baseline to over 90% after the first six months of the initiative. Patient-reported self-sufficiency and patient health measures fluctuated throughout implementation and did not show a clear trend.

[xi] *Data sources:* MassHealth claims, MMCO encounters, and chart reviews (ED visits & hospital admissions); verified patient report (housing); screening measures and EMR data (self-sufficiency & health). Baseline: 18-month lookback for enrolled patients.

PATIENT EXPERIENCE

During Care Coordination Study interviews conducted with patients in a subset of TCCI Program initiatives including the SDH Consortium,[3] patients reported that SDH Consortium and BHCHP staff did not judge them. Instead, they listened, understood their struggles, and worked with them to outline a path to meet their basic needs and work towards longer-term solutions. Patients remarked upon staff members' frequent communication with and about them. They appreciated the efforts CMs made to check in with them and to coordinate with their care teams and social service providers.

> *"[The CM] helped me see my priorities, helped me find my way."*
>
> **– SDH CONSORTIUM PATIENT**

The importance of patients' connections with CMs meant that staff turnover was difficult for patients. As noted above, many said that they experienced severe loss, grief, and anxiety when someone they had worked with moved on. In addition, several patients expressed doubt that even the most dedicated CMs could heal their disabling conditions and address their overwhelming social needs. For most SDH Consortium patients, however, relationships with initiative staff were lifelines: **"These folks don't give up. No matter what I have done, they find me, and we start again."**

STAFF EXPERIENCE

Focus groups with SDH Consortium staff and BHCHP clinicians found that most considered the SDH Consortium to be a valuable initiative.[3] They believed that the team was very strong, with a solid commitment to patients. BHCHP clinicians noted that the initiative allowed them to provide care in ways they could not have otherwise. However, competing time demands sometimes presented challenges for both clinicians and CMs. PCPs treated many high-need patients and were not always available to sign off on care plans. In addition, the RN clinical navigator felt some PCPs had variable responses to the case conferences. CMs reported challenges balancing the extensive time required for patient outreach with other tasks. They also raised concerns about the time burden of certain types of documentation.

> *"Having CMs work with clients outside [of the clinic] gives us another set of eyes."*
>
> **– BHCHP CLINICIAN**

PROGRAM SUSTAINABILITY

The SDH Consortium continued as part of the MassHealth Behavioral Health Community Partners (BH CP) program. The initiative expanded to include 1,000 patients and, due to lower reimbursement levels, CM caseloads increased from about 1:15 to about 1:50. Of the 50 patients still active in the SDH Consortium at the end of the initiative, 37 enrolled in the BH CP program, many with the same CM or team. The others were not eligible or, in some cases, were assigned to a different program. One declined enrollment.

The experience gained and relationships built during the TCCI Program helped BHCHP scale its model to this new format, providing a template and a foundation for the transition. This included gaining buy-in from two partners who attended SDH Consortium meetings but did not participate in the initiative directly. In the words of SDH Consortium leaders: **"Being able to operationally test our model and improve its feasibility was one of the most influential factors for moving into a major expansion of the program."**

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BOSTON MEDICAL CENTER

INITIATIVE SUMMARY

TARGET POPULATION: Boston Medical Center (BMC) emergency department (ED) patients with high ED and/or inpatient utilization in the past year.

FOCUS AREAS: Reduce ED and inpatient admissions. Improve patient experience.

INTERVENTION: The High Touch, High Trust (HT2) initiative deployed community health advocates (CHAs) who, together with civil legal aid attorneys and staff from the Medical Legal Partnership Boston (MLPB), assessed and partnered with patients to identify, prioritize, and resolve their health-related social needs.

KEY TAKEAWAYS:

- ED visits decreased by 13% and inpatient admissions fell by 17%.
- The team mitigated 29% of identified social needs, including 70% of identified legal needs. Systemic issues hampered efforts to address housing needs.
- The MLPB was a valuable partner in the initiative.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

HT2 primarily targeted BMC ED patients with high ED utilization. High ED utilization was defined as four or more ED visits within the past year. Many patients faced housing instability, mental health conditions, and a range of chronic medical issues. The initiative aimed to reduce ED and inpatient admissions and improve patient experience.

STAFFING MODEL AND KEY PARTNERS

The HT2 team included three full-time community health advocates (CHAs), supported by BMC-funded research assistants who helped with patient enrollment.[xii] CHAs often had backgrounds as community health workers, and all received training on available legal resources. The program's main partner was Medical Legal Partnership Boston (MLPB). HT2 also partnered with BMC's Elders Living at Home Program (ELAHP).

SERVICE DELIVERY MODEL

HT2 provided case management for high-utilizing patients, with legal education and consultation for the HT2 team from MLPB. This support facilitated efforts to address patients' social needs, as many need areas—such as housing, access to benefits, and immigration-related issues—had potential legal remedies. CHAs focused on social needs but also conducted clinical care coordination tasks when appropriate. They accompanied patients to appointments, assisted with medical service access, educated patients about their rights and resources, and helped with administrative tasks such as filling out paperwork or helping with applications. An MLPB lawyer provided education and consultation to the HT2 interdisciplinary team and facilitated connections to legal resources, including an "on-call" housing law specialist. BMC based their care model on a program using medical-legal partnership for high utilizing patients and a program focused on building relationships with high-utilizing patients to promote wellness.[1,2] Heavy reliance on contact by telephone and the exclusion of patients without phones (discussed below) affected the target population.

[xii] An investment director/primary investigator (0.2 full-time equivalent [FTE]) and a co-investigator (0.05 FTE) also supported this team at various points throughout the initiative.

For patients, involvement in HT2 began with identification in the ED by BMC research assistants. These staff members assessed presenting patients for eligibility and approached those who were eligible. A CHA later followed up for intake, including conducting patient-directed goal setting and an assessment of social and medical needs. CHAs worked with patients to develop and carry out a care plan, with goals and services based on patient priorities. Patients focused on priorities they identified, which did not always align with need areas that CHAs perceived as likely to offer tangible, near-term progress (e.g., enrolling in public benefit programs). Instead, patients often prioritized issues like housing, which took longer to address but were of high importance. While supporting patients' initial priorities, CHAs also had deeper discussions with patients to identify additional goals as relationships developed.

> *"There are so many different parts to what's going on in [a patient's] life, whether it's housing, legal, benefit-related, medical-related... [Our role is to be] the center cog of it all."*
>
> **– CHA**

HT2 was designed to be a short-term program, with most patients transitioned to other services after six months. CHAs followed patients in the community weekly for the first three months, then every two weeks for months four through six. The average length of participation, excluding patients who did not participate beyond the first visit or who had unusually long enrollment, was 95 days.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

To increase the available target population, BMC changed the enrollment criteria from high inpatient and ED utilization to solely focusing on patients who had four or more ED visits in the previous year. In addition, the HT2 team added research assistants to increase ED enrollment capacity. BMC also brought in a new partner: Elders Living at Home Program (ELAHP), a BMC program addressing homelessness among older adults. ELAHP brought relevant experience and infrastructure to support CHAs (see Partnerships section, below). ELAHP's work with the HT2 team was somewhat limited by resource constraints and they were only able to participate as a full partner for a limited time, but the program gained from them, nonetheless.

HT2 also changed enrollment criteria to exclude patients without telephone access, as this group was very difficult to stay connected with; patients without phones who had already enrolled were able to continue in the program. Initiative leaders described this as a difficult decision made because of staff capacity limitations.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

HT2 leaders had planned to identify patients through an eligibility list; however, enrollment in the ED proved more effective. BMC research assistants conducted most of this identification, with assistance from CHAs as time allowed. Rollout of BMC's accountable care organization (ACO) around the time of HT2's launch affected enrollment early in the initiative, temporarily halting identification while patients were assigned to care management panels. It also resulted in duplicative outreach to patients within BMC, causing some patients to feel overwhelmed and decline to participate.

After patients enrolled, CHAs' small caseloads (15-25 patients) and frequent patient contacts facilitated ongoing participation. These elements helped to build trust and allowed CHAs to devote time to patients' individual needs. However, due to staffing limitations and the lack of safe meeting spaces outside of the ED for many patients, most patient contacts took place by phone. This made it difficult to connect with patients who did not have consistent telephone access. In addition, fear could be a barrier to participation for immigrant populations, though the team connected those who enrolled with resources and legal representation.

Care planning within HT2 prioritized patient goals and priorities. CHAs asked if enrollees wanted help with identified need areas, rather than making assumptions about their desires. As trust grew over time, CHAs connected with patients more deeply to understand priorities and suggest additional ways forward. However, patients' needs often exceeded the program's capability and capacity to solve them. Housing needs presented particular problems because of the lack of affordable housing in Boston.

Frustrated by slow progress in securing housing, some patients left the program. Additionally, staff reported that some patients hesitated to find employment for fear that the increased income would cause a disproportionate decrease in the public benefits they received.

Finally, both staff and patients reported that six months was too short a participation time. They found that this was not sufficient to reach longer-term goals. Often, patients needed to transition to other services in the midst of working toward identified priorities.

Partnerships

MLPB was an active partner in HT2, helping to assess the health-related social and legal needs of newly enrolled patients, triage legal issues, provide education and guidance to the CHAs and broader HT2 team, and coordinate outreach to legal resources. An MLPB lawyer was available in real-time – both during team meetings and outside of those meetings – to respond to urgent questions. In addition, the HT2 and MLPB teams educated each other: MLPB trained CHAs in the legal aspects of social needs, while the legal team learned more about health care.

> *"There were definitely times where we did not recognize the service that [the lawyer] could provide, that there actually was a legal need. And she would step in and provide guidance."*
>
> **– HT2 PROGRAM MANAGER**

HT2 also brought on ELAHP as a partner to strengthen their program during implementation. The team felt that ELAHP supported and improved their work for patients by providing guidance to CHAs around housing resources and facilitating contacts with the Boston Housing Authority. Through this collaboration, CHAs gained more expertise on housing matters. ELAHP continued to provide consultation throughout the program, though their role was most significant in the early stages. As a hospital based-program, they were not able to provide direct support to patients in the community-based HT2 program. In addition, funding constraints meant their participation was time-limited, and modified to a consultant type role for the final few months of the implementation program, ending before the no-cost extension period. Despite these constraints, the HT2 team felt they and the program benefitted from working with ELAHP.

While MLPB and ELAHP were BMC's closest partners in the HT2 initiative, the team also collaborated with a wide range of other groups. This included patients' primary care providers (PCPs), clinicians within or affiliated with BMC, and care managers at other health care organizations. This coordination helped to increase continuity, address patients' needs, and relieve caseload burdens for other care management programs.

Frequent contact helped to maintain these partnerships. MLPB and the CHAs participated in weekly meetings with the directors of the HT2 team. Within BMC, the HT2 team had ongoing discussions with different departments to establish their presence and coordinate outreach, through meeting attendance and individual staff contact. These communications helped raise HT2's profile with staff who were frequently interacting with other initiatives in addition to HT2.

Technology and infrastructure

The HT2 team utilized well-developed data collection processes, dividing data workflows among staff, and using a variety of platforms to access and store data. Many patients received care from BMC-affiliated medical providers, which simplified data sharing. In cases where the team needed to share data outside of BMC's health system, they asked patients to sign a pre-drafted release form approved by BMC's legal team. However, HT2 and MLPB's use of differing data systems—while necessary because of HIPAA and legal professional requirements—was challenging. This workflow would need to be addressed for future collaborations between any health and legal systems.

The Department of Emergency Medicine at BMC has an existing internal research infrastructure that supports numerous ongoing studies and was able to support program evaluation. HT2 employed staff suited to handle complex data analysis, including two statisticians and a health economist. One statistician assisted with ongoing data review, while the full team planned to analyze the data after the initiative's completion.

IMPACT

PATIENTS SERVED

HT2 had 151 participants. Of those, 127 completed initial health-related social needs screening and 40 completed the entire six-month program.[xiii] Enrolled patients' ages ranged from 22 to 75, with an average age of 48. A minority of participants (42%) were male, and 59% were Black non-Hispanic, 30% were White non-Hispanic, 6% were Hispanic, and 4% were of other or unknown race and ethnicity. Medicaid was the most common payer (65%), followed by Medicare (21%) and commercial insurance (14%). Over 60% of enrolled patients had experienced housing instability in the last three years and many had been diagnosed with mental health conditions (48%), hypertension (46%), chronic obstructive pulmonary disease (COPD; 29%), and/or diabetes (26%).

CHAs conducted 817 telephone encounters, 297 encounters on the BMC campus, and 282 encounters in the community. Over half of patients expressed needs related to social support (96%), income and employment (95%), housing (93%), food (80%), medical care (69%), and transportation (60%). Sizeable minorities expressed needs related to utilities (44%), caregiving help (42%), and identification (39%).

RESULTS TIED TO INITIATIVE GOALS[xiv]

ED visits per patient decreased by 13% relative to baseline and inpatient admissions fell by 17%. The majority (69%) of patients had fewer ED visits during the intervention than during baseline. HT2 reported that they were able to mitigate 29% of identified social needs (230 of 778), including 70% of identified legal needs (45 of 64).

Total medical expenses increased from baseline ($43,154/patient) to the end of implementation ($55,132/patient); however, among patients with relatively low costs (those in the 25th percentile), total costs decreased. These findings may have been skewed by six high-utilizing patients who accounted for a 135-visit increase in ED utilization.

PATIENT EXPERIENCE

BMC informally reached out to about 50 patients regarding their experiences with CHAs. Most gave positive feedback, though a minority felt that their CHA was difficult to reach. The HT2 team reported that the most frequent anecdotal patient input they received was that a six-month participation time was not long enough. Still, CHAs felt that patients benefitted from HT2's consistent support. HT2 staff also reported that the initiative helped some patients who had previously had difficulty using health care outside of the ED reach meaningful milestones in their care.

Patient stories show the difference the initiative made for some patients. For one disabled mother who owed a large amount of back rent, HT2's assistance meant keeping the subsidized apartment she shared with her family. Working with MLPB, the CHA helped her coordinate with her adult children, find external resources to pay part of the sum, and understand the legal issues involved. The CHA also worked with the patient's property manager, and MLPB arranged for rapid-response legal counsel to be on standby in case of eviction proceedings. Ultimately, the CHA, patient, and family developed a plan that allowed for consistent rent payments, after which the patient also began to attend medical appointments more consistently.

STAFF EXPERIENCE

HT2 staff were glad to be able to make a difference for hard-to-reach patients. They felt that the initiative was a novel approach that offered more than traditional case management. They also reported learning about legal issues and resources to solve them that had previously been unknown to them. In addition, CHAs felt that their work and advocacy on patients' behalf helped other medical and social service providers view HT2 patients more positively, rather than considering them noncompliant and unreachable. They also believed that case managers from other health care organizations were grateful for the support HT2 provided. However, they found larger systemic barriers—especially around housing—frustrating.

> *"I'm most proud of the work we do and the outcomes that we've had, engaging this extremely hard-to-reach population."*
>
> **– CHA**

[xiii] Reasons for leaving the initiative early included patients being lost to follow-up and dissatisfaction with housing progress.

[xiv] *Data sources:* BMC data warehouse (ED visits, admissions, expenditures), HT2 data (social needs), MLPB data (legal needs). Baseline: Enrolled patients in the 12 months before enrollment. Implementation: Enrolled patients in the 12 months after enrollment. Note: Excludes seven patients who died within one year of enrollment and four who dropped out within the first week after enrollment.

PROGRAM SUSTAINABILITY

The HT2 team postponed sustainability discussions until after they had analyzed data to determine the initiative's return on investment. Because of this decision and the need for data runout, HT2 ended before the team had discussed its future with BMC leadership. The team believed that the biggest barriers to long-term investment would be the financial resources needed to hire and manage CHAs, sustain the legal resources for case review, and construct a clinical team with sufficient capacity to perform weekly case reviews and manage data. The limitations of a fee-for-service environment, in which many of these services are not reimbursable, complicated these issues.

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BROOKLINE COMMUNITY MENTAL HEALTH CENTER

INITIATIVE SUMMARY

TARGET POPULATION: Beth Israel Deaconess Care Organization (BIDCO) patients over age 18 with annual expenditures of over $50,000, a behavioral health condition, and at least two medical comorbidities.

FOCUS AREAS: Decrease total health care expenditures. Decrease inpatient admissions. Decrease 30-day inpatient readmissions. Decrease emergency department (ED) visits.

INTERVENTION: Brookline Community Mental Health Center's (BCMHC) Healthy Lives initiative deployed a multidisciplinary care management team to integrate behavioral health, primary care, and community services for patients with both mental health and chronic illness diagnoses.

KEY TAKEAWAYS:

- Total health care expenditures decreased by 16%, with an estimated $13,639 in costs avoided per patient.
- Inpatient admissions decreased by 61% and ED visits by 53%.
- Patients felt supported and believed that Healthy Lives staff listened to them and helped them advocate for themselves.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

BCMHC's Healthy Lives initiative targeted adult BIDCO patients with annual expenditures of over $50,000, a behavioral health condition, and at least two medical comorbidities. The initiative's primary goal was to decrease total health care expenditures. Secondary goals included decreasing inpatient admissions, 30-day inpatient readmissions, and ED visits.

STAFFING MODEL AND KEY PARTNERS

The Healthy Lives team included two full-time community health workers (CHWs), a program manager (0.55 full-time equivalent [FTE]), and a nurse care manager (0.5 FTE).[xv] CHWs focused on building relationships with patients, families, and providers and conducting home visits. The program manager, a licensed independent clinical social worker, oversaw operations, provided behavioral health expertise, and offered case consultations as needed. The nurse care manager focused on medication reconciliation and home visits. BIDCO, an HPC-certified accountable care organization (ACO), and Springwell Aging Services Access Point were key partners in the initiative.

SERVICE DELIVERY MODEL

Healthy Lives provided attentive, in-person care management for patients with behavioral health and medical comorbidities. BCMHC drew on a previous pilot program working with their patient population to inform the Healthy Lives care model as well as information about best practices for behavioral health integration and case management programs.1,2 For patients, involvement with Healthy Lives began with identification by a health care provider and referral to the program manager. A CHW then reached out to the referring provider to discuss the patient's situation and determine a strategy for connecting with them. The CHW then contacted the patient and, with permission, conducted intake and an initial home visit. The patient and CHW collaborated to develop a care plan that identified the patient's health and social needs goals, areas in which Healthy Lives

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[xv] Another social worker (0.2 FTE) and a psychiatrist who also served as the investment director (0.1 FTE) supported this core team. In addition, a program coordinator (0.5 FTE) helped oversee the initiative and coordinate with partners.

could provide assistance, and individualized health markers. The Healthy Lives nurse care manager then conducted medication review and reconciliation, usually in the patient's home.

Patients continued to receive home and community visits with the CHW as needed, as well as a range of other services. These services included accompaniment to medical and community appointments and assistance with coordinating medical care, home-based and social services, and other needs. In addition, Healthy Lives communicated with patients' clinicians and conducted discharge planning and medication review for any patients who were hospitalized or entered a skilled nursing facility (SNF).

Once the patient, CHW, and other providers determined that a patient had been stabilized, the Healthy Lives team discharged them from the initiative. The average length of participation was six months.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

BCMHC piloted an earlier version of its Healthy Lives model prior to the TCCI Program and, as a result, did not make any significant changes during implementation. However, the model changed notably in earlier iterations. BCMHC had originally expected patients to be disconnected from primary care, and accordingly planned to provide those services in patients' homes. During their initial pilot, however, they found that most patients had primary care providers (PCPs). BCMHC therefore revised the program to a nurse-led model emphasizing partnerships with primary care, behavioral health, and social services. They also increased CHW staffing, having found that CHW availability determined enrollment capacity.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Many Healthy Lives patients were hesitant to join an unfamiliar program and required repeated outreach. Relationships between the Healthy Lives team and patients' PCPs, behavioral health clinicians, and BIDCO nurse care managers helped lessen these barriers, as they allowed referrals to come from sources that patients trusted. Face-to-face meetings between patients and CHWs also facilitated the intake process and subsequent program participation, while high-touch case management promoted continued participation. Having a multilingual, diverse team addressed potential cultural and linguistic barriers.

> *"We try to think holistically: what will contribute most to this patient's well-being and health before it becomes an emergency?"*
>
> **– HEALTHY LIVES STAFF MEMBER**

Throughout this process, the Healthy Lives team worked to build trust, empower patients, and take an individualized approach. To do this, they developed flexible, realistic care plans that focused on patients' needs and identified short- and long-term goals. The team worked to address patients' most important self-identified needs—including non-medical ones—and to help them sort through medical information so they could make their own informed decisions.

Systemic issues such as limited access to behavioral health services often posed barriers for this work. In addition, the team acknowledged patients' past experiences of feeling let down by clinicians and health systems. They worked to create a different experience for patients by being consistent, persistent, and flexible. Home visits helped the Healthy Lives team to build trust, identify needs and barriers, and see who was involved in a patient's care. This sometimes revealed a need to educate family members, support them in caring for patients, or support patients in their own caregiving responsibilities.

Discharging patients when they completed the initiative could be difficult, as many wanted to continue receiving care coordination through Healthy Lives. The Healthy Lives team modified its enrollment strategy to begin preparing patients for discharge soon after initiating services in order to set clear expectations from the outset.

Partnerships

The Healthy Lives team worked closely with patients' primary care practices: in the words of one Healthy Lives team member, the initiative aimed to be **"an extension of primary care planning."** PCPs, behavioral health clinicians, and BIDCO nurse care managers were key sources of referrals, helping to connect patients with the program and inform other clinicians about the initiative. In addition, these partnerships facilitated regular communication about patients' needs and goals.

A variety of strategies helped to foster these connections. Healthy Lives staff were co-located at BIDCO, which facilitated communication, strengthened partnerships, and promoted cross-program learning between the Healthy Lives team and BIDCO nurse care managers. The Healthy Lives team encouraged BIDCO clinicians to see them as an extension of the care team and a resource in caring for patients more effectively. In addition, regular meetings, both within Healthy Lives and with BIDCO teams, promoted collaboration and team cohesion. These meetings provided an opportunity to review outcomes, conduct case presentations, discuss specific challenges or program changes, review data, and gather feedback.

> *"It's a more effective intervention than anything I could do over the phone."*
>
> **– BIDCO STAFF MEMBER**

Healthy Lives not only worked closely with BIDCO staff and clinicians, but also coordinated with the wide range of clinicians and social service providers with whom patients interacted outside of BIDCO. While these care teams varied across patients, they often involved specialists, hospitals, SNFs, and social service providers. The interdisciplinary orientation was a strength of the initiative that allowed Healthy Lives to address patients' multidimensional needs more effectively; however, the number and variety of groups involved also made coordination tasks more complicated.

Technology and infrastructure

The Healthy Lives team had access to BIDCO primary care practices' electronic medical records (EMRs). This level of access strengthened relationships, promoted communication, and allowed the team to get patient information more readily. However, because different PCP offices used different, nonintegrated EMRs, Healthy Lives staff needed to know how to use multiple systems in order to collect patient information. Social service providers did not have EMRs at all, further complicating this process.

Use of database software and established data collection processes facilitated internal tracking of patient information, including health outcomes, medical expenditures, enrollment status, interactions with providers, referrals, and participation rates. However, the initiative had trouble obtaining timely claims data due to changes in the BIDCO ACO's contracts and financial systems. The Healthy Lives team ultimately received the data, but not quickly enough to guide implementation.

IMPACT

PATIENTS SERVED

Healthy Lives enrolled 66 patients and was able to follow 45 of them pre- and post-intervention. Patients' ages ranged from 28 to 94 years, with an average of 66 years. Of enrolled patients, 59% were White, 27% were African American, 13% were Hispanic, and 2% were Asian. The majority of patients (63%) were male.

RESULTS TIED TO INITIATIVE GOALS[xvi]

Total health care expenditures for the 45 patients followed pre- and post-intervention decreased by 16%, falling from an average of $82,705 to an average of $69,066 per patient. In addition, inpatient admissions per patient decreased by 61% and ED visits by 53%. Inpatient readmission numbers were very low, so no trends could be discerned in this measure.

PATIENT EXPERIENCE

During Care Coordination Study interviews conducted with patients in a subset of TCCI Program initiatives including Healthy Lives, many patients shared that Healthy Lives made them feel supported and gave them the sense that someone was listening to them, working on their behalf, and helping them advocate for themselves.[3] They valued meeting with Healthy Lives team members to discuss their medical, behavioral, and social needs. While patients faced a variety of barriers to achieving their goals and understood that the Healthy Lives team had limitations, they were thankful for what the team helped them accomplish.

> *"They know so much. They really help me understand."*
>
> **– HEALTHY LIVES PATIENT**

[xvi] *Data sources:* BIDCO claims registries (expenditures and admissions), chart review (ED visits). Baseline: Intervention patients in the year prior to enrollment. Note: Admissions and ED visits limited to those detectable through BIDCO.

STAFF EXPERIENCE

Healthy Lives staff reported being proud of the initiative's ability to build strong relationships with and improve outcomes for previously "unreachable" patients. Patients' gratitude, growth, and resilience made the work meaningful. Team members also valued the support they received through regular internal meetings and the initiative's interdisciplinary team structure. Focus groups with initiative staff corroborated this, while also revealing frustration with the difficulty of meeting patients' high needs even within a robust initiative like Healthy Lives.[3]

Focus groups with BIDCO staff and clinicians revealed a belief that the Healthy Lives team **"allowed us to do what we would not otherwise be able to."**[3] Participants felt that Healthy Lives was able to uncover patients' circumstances and conduct effective follow-up in a way they could not, particularly for complex issues. While the volume of needs unearthed could sometimes be overwhelming, BIDCO providers felt that Healthy Lives not only identified these needs but also made addressing them easier. They wished that the Healthy Lives initiative had a greater reach, and BCMHC continued to receive referrals from primary care offices even after the initiative ended.

PROGRAM SUSTAINABILITY

Through the TCCI Program, BCMHC built a team infrastructure and demonstrated the success of the Healthy Lives model in an ACO setting. BCMHC remained committed to the initiative because of its success with a complex population lacking other adequate supports and was able to adapt aspects of the model to respond to current needs and opportunities.

BCMHC retained one team to provide direct care to patients through the MassHealth Behavioral Health Community Partners (BH CP) program, though reimbursement rates required higher caseloads than used in Healthy Lives. BCMHC also began providing consultation to other organizations interested in building similar models. This included assisting in the development of state-wide Healthy Connections teams at Community Care Cooperative, an HPC SHIFT-Care awardee. The team also provided training to MassHealth BH CP organizations and developed a more robust consulting and training program with funding from a MassHealth Special Projects grant.

In addition to these ongoing activities, BCMHC observed broader impacts from Healthy Lives. BIDCO nurse care managers became more comfortable managing patients with serious behavioral health conditions and more aware of resources for addressing health-related social needs. After seeing the effectiveness of the Healthy Lives team, some partners hired CHWs to address social needs and started or scaled up home visiting services. In addition, organizations within Beth Israel Deaconess Medical Center requested guidance on service provision and training of CHWs and nurses.

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CARE DIMENSIONS

INITIATIVE SUMMARY

TARGET POPULATION: Patients with severe, life-limiting illness who were members of North Shore Physician Group's (NSPG) accountable care organization (ACO).

FOCUS AREAS: Reduce all-cause readmissions and emergency department (ED) visits. Increase hospice length of stay.

INTERVENTION: Care Dimensions' Palliative Care+ (PC+) initiative integrated palliative care staff into NSPG primary care sites in order to bridge service gaps among curative, palliative, and hospice care for patients with serious illness.

KEY TAKEAWAYS:

» Inpatient readmissions decreased by 21% and ED visits fell by 24%.

» Patients and families found PC+ helpful in making sense of the many provider recommendations they received.

» Patients and caregivers had substantial social support needs that were beyond the scope of PC+.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

PC+ targeted patients with severe, life-limiting illness who were members of NSPG's ACO. Patients with chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF) made up a large portion of referrals. The initiative's goals were to reduce all-cause readmissions and ED visits and to increase hospice length of stay.

STAFFING MODEL AND KEY PARTNERS

The PC+ team included palliative care nurse practitioners (NPs; 0.8 full-time equivalent [FTE]), a full-time nurse coach, a social worker (0.25 FTE), a telehealth nurse (0.5 FTE) who conducted remote monitoring, and a full-time palliative care coordinator employed by NSPG.[xvii] NSPG was a key partner in PC+, with its primary care providers (PCPs) and high-risk nurse care managers (NCMs) playing an important role.

SERVICE DELIVERY MODEL

PC+ integrated palliative care staff into primary care sites, educated physicians, and supported patient identification and referral. It also provided palliative care and worked to increase hospice admission and Medical Orders for Life-Sustaining Treatment (MOLST)[xviii] completion. The PC+ model drew a study of in-home palliative care and a study of advanced illness management and home palliative care.[1, 2] A PC+ social worker also helped address social needs, but this work was not a major focus of the model.

For patients, participation in PC+ began with referral by an NSPG PCP, high-risk NCM, or specialist. The PC+ palliative care coordinator and NSPG's high-risk NCMs helped with patient identification and referral. After referral, the PC+ team pulled patient information available through Partners HealthCare's Physician Gateway portal, talked to NSPG high-risk NCMs about the rationale for the referral, and called the patient to schedule an initial visit. A palliative care NP went to the patient's home

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[xvii] A provider relations liaison nurse (0.5 FTE), a data analyst (0.25 FTE), a project manager/investment director (0.2 FTE), and a clinical director (0.025 FTE for the final 12 weeks of the initiative) supported this team.

[xviii] MOLST forms are standardized medical order forms that individuals can use to express their preferences about life-sustaining medical treatments.

to conduct an initial consult. Then, the NP developed a care plan and reviewed it with the patient and their NSPG care team, making changes as necessary.

Throughout the program, patients received ongoing care as needed based on the care plan. PC+ team members communicated any new information to NSPG as it arose. The team tracked patients throughout their participation in the initiative, providing symptom and care plan support, referrals to other services, and management of care transitions. The nurse coach called patients weekly to offer support and check on their needs and symptoms. Telehealth monitoring was available for patients with COPD or CHF. In addition, the PC+ social worker contacted patients directly to assist with social needs. Patients did not graduate from the program, instead participating for the duration of the 18-month program or until hospice referral.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

Because of high readmission rates in the beginning of the initiative, the PC+ team increased its focus on patient transitions, particularly for patients returning home from a hospital or rehabilitation facility. In addition, while leaders had originally planned to discharge patients once their symptoms improved and their goals of care were better understood, they decided to instead retain patients for the life of the initiative. This allowed PC+ to provide more longitudinal support and aligned with NSPG's preferences for care. The shift required staffing changes: PC+ added additional time for palliative care NPs, increased the size of nurse coach role, and brought on a second nurse to handle telehealth monitoring. The team also added a clinical director and reduced time for the provider relations nurse.

PC+ leadership adjusted other model elements to provide care more effectively. Because of low MOLST form completion rates, PC+ retrained staff, encouraged them to double-check for completed forms, and made sure forms were copied from NSPG's to Care Dimensions' records. In addition, after finding many psychosocial concerns among patients and families, the team had the social worker call all patients directly to improve uptake of her services. Despite these efforts, qualitative interviews with PC+ patients and families found that psychosocial needs remained a substantial challenge.[3]

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Connections between the PC+ team and NSPG primary care practices greatly facilitated enrollment. NSPG primary care staff identified patients, with support from the palliative care coordinator and a PC+ screening tool. This approach allowed referrals to come from clinicians whom patients knew and trusted and positioned PC+ as an extension of the primary care office. These elements helped address a central challenge of the initiative: patients' misconceptions about and reluctance to enroll in palliative care. Collaborating with NSPG also helped PC+ contact difficult-to-reach patients, as primary care sites could assist in this process.

Once patients enrolled, PC+'s patient-centered approach encouraged continued participation. The initial patient meeting focused on patients' goals and understandings of their conditions. The nurse coach helped PC+ stay connected with patients between visits and assessed whether the care plan needed modification. Patients valued this ongoing contact; however, interviews found that they were not always honest with the nurse about their needs and symptoms, in part because of concerns about being sent to the hospital.[3]

Administrative factors complicated the referral process. PC+ required that patients be ACO members in order to ensure complete data access, but many referred patients did not meet this requirement. These patients received treatment as usual, including basic care management through NSPG. In addition, PC+ set broad inclusion criteria and found that referred patients were of higher acuity than expected, often consisting of NSPG sites' most complex patients.

Partnerships

The PC+ team worked closely with NSPG primary care sites. Staff spoke of increased trust, enhanced relationships, and a **"different energy"** around the collaboration—illustrated, they felt, by increased referrals to Care Dimensions. The PC+ team also supported NSPG by identifying patients who needed in-home primary care. The team worked with NSPG to connect these patients with existing NSPG services.

A number of factors fostered these close relationships. NSPG and Care Dimensions leaders met regularly to review challenges, data, and operations. The palliative care coordinator visited primary care sites monthly, playing a critical role in facilitating partnerships and generating referrals. This included talking with physicians, reviewing data to identify potential patients, bringing those patients to physicians' attention, and sometimes conducting joint visits to help PCPs talk with patients about palliative care. NSPG's high-risk NCMs also helped initiate referrals and bring patients to physicians' attention. In addition, they were a crucial point of contact for the PC+ team. Frequent communication between PC+ staff and high-risk NCMs gave both sides additional information about patients' needs and circumstances.

The PC+ team also made a concerted effort to educate and support PCPs, countering misperceptions of palliative care and reluctance to collaborate with PC+. Sharing success stories and length-of-service data supported culture change by reframing PCPs' views of which patients were appropriate to refer. The palliative care coordinator helped by identifying patients appropriate for the program and working with physicians on creative strategies to identify patients (e.g. asking PCPs to reflect on the patients whom they felt were most likely to die within the next 12 to 24 months). High-risk NCMs also contributed to patient identification and physician education, while the Care Dimensions Provider Relations department shared educational sessions and materials.

> *"If providers are not comfortable with [palliative care] you're never going to get the opportunity to talk [to] those patients, never."*
>
> **– PC+ TEAM MEMBER**

While coordination with primary care was strong, following patients across care settings posed notable barriers. When patients were admitted to a hospital, rehabilitation facility, or nursing home, the PC+ team and high-risk NCMs struggled to get in touch with them. The clinicians responsible for these patients' care often rotated, making it difficult to maintain continuity. In addition, the fact that the team needed a new order to see the patient in each different setting added complexity and time: each new order required the PC+ team to connect with a new set of providers, re-introduce the program, and establish a new set of goals. Undertaking this effort with hospitals outside of NSPG's health system (Partners HealthCare) was particularly difficult.

Technology and infrastructure

PC+ provided telehealth remote monitoring for patients with CHF and COPD. Patients used home equipment to track their blood pressure, heart rate, and weight. They also completed symptom surveys on tablets that PC+ provided. The software uploaded these data for the telehealth nurse's daily review.

Partners HealthCare's Physician Gateway portal allowed the PC+ team to access some NSPG electronic medical record (EMR) information. Direct secure email also facilitated communication between the PC+ team and NSPG. However, the lack of EMR interoperability between the two groups posed barriers. Physician Gateway did not include all patient information, forcing the PC+ team to request information from high-risk NCMs—a time-consuming process. The lack of integration also made MOLST form documentation more difficult, though PC+ worked to import these forms into the Care Dimensions record.

The PC+ team had a well-coordinated staffing plan related to data and reporting, including utilizing a data analyst with support from the program manager. Care Dimensions and NSPG staff shared responsibility for data collection, each entering the data they owned.

IMPACT

PATIENTS SERVED

PC+ enrolled 246 patients, with an additional 211 referred but ineligible due to lack of ACO membership. Of eligible patients referred, 89% enrolled. The most common factors which caused eligible patients not to enroll were patients declining to participate and the decision to go directly to hospice.

RESULTS TIED TO INITIATIVE GOALS [xix]

Readmissions per patient fell by 21% relative to baseline, though the ratio between inpatient admissions and readmissions remained constant during the initiative. ED visits decreased by 24%. Among the 89 patients admitted to hospice, average hospice days of service was 202 as of the end of the initiative.

Over 90% of palliative care consultations included advance directive conversations. However, only 58% of patients had a completed MOLST form on file. PC+ staff speculated that difficulties finding the form in the record may have contributed to this low rate. They also noted that some patients hesitated to complete the form, incorrectly believing that it required them to refuse life-sustaining treatment.

PATIENT EXPERIENCE

Care Coordination Study interviews, conducted with patients in a subset of TCCI initiatives including PC+, found that most patients and family caregivers considered PC+ an important source of support.[3] They believed that the team helped them make sense of their complex medical issues and address their medical needs at home. Patients had received many care plans from numerous providers. Many found it difficult to know what they should do and whom they should contact regarding their concerns. Patients and caregivers relied on the PC+ team **"to make sense of it all."**

Many patients noted significant social support needs that were outside the scope of PC+ to address and that represented key learning areas for future iterations of the initiative. Non-medical needs, such as the desire to attend an important activity or care for a beloved pet, profoundly affected patients: **"I just want to go to church. I can't get there on my own and have been asking everyone for help for two years. Nothing—no one will help me."** Interviews also revealed a range of unmet caregiver-related needs, including inconsistency on the part of home health aides and significant burdens on family caregivers.

> *"I know there are things I must do to stay out of that hospital. It's confusing. The [PC+] nurse helped me sort it out."*
>
> **– PC+ PATIENT**

STAFF EXPERIENCE

Staff identified two important successes of PC+: increased awareness of palliative care among NSPG providers and closer working relationships between NSPG and Care Dimensions.[3] Staff members also felt that they helped patients meet their goals and stay in their homes. High-risk NCMs believed that the palliative care coordinator had an important impact, while physicians found the support helpful. In addition, both physicians and PC+ staff cited the importance of high-risk NCMs.

> *"[The palliative care coordinator] felt like a safety net for me."*
>
> **– NSPG PCP**

The PC+ team and high-risk NCMs both expressed frustration with data limitations: **"Without EMR access, a lot of time is wasted running around being the messenger."** In addition, both teams valued the PC+ social worker, with some staff members expressing a desire for greater social worker access and availability. They noted that it would have been helpful if the PC+ initiative been more able to address psychosocial needs including access to community resources, early bereavement referrals, and counseling in addition to medical needs. Gaining access to patients when they entered rehabilitation, a nursing home, or a hospital was also a source of frustration.

PROGRAM SUSTAINABILITY

PC+ represented a new approach for Care Dimensions, contributing to an evolving model of community-based palliative care. It also made important cultural changes by increasing PCP comfort with and understanding of palliative care.

After TCCI, Care Dimensions planned to roll out a version of the initiative to all palliative care patients, making program adaptations to reduce costs in order to meet the constraints of administering the program in a fee-for-service environment. While Care Dimensions retained telehealth and nurse coach support, they eliminated the palliative care coordinator role. This decision was made due to lack of reimbursement; leaders worried that the reimbursement issue could create challenges for the nurse coach role as well. In the short term, Care Dimensions planned to fund the program through philanthropy.

[xix] *Data sources:* NSPG records (hospitalizations, ED visits, MOLST), Care Dimensions records (hospice, MOLST). Baseline: Enrolled patients in the six months before enrollment.

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COMMONWEALTH CARE ALLIANCE

INITIATIVE SUMMARY

TARGET POPULATION: Patients dually eligible for Medicare and Medicaid who received primary care and care management through Commonwealth Care Alliance's (CCA) Senior Care Options or One Care programs.

FOCUS AREAS: Reduce hospitalizations and emergency department (ED) visits. Increase timely follow-up for patients treated in an inpatient setting for a behavioral health diagnosis. Increase suitable housing placements. Increase patient satisfaction with mobile integrated health.

INTERVENTION: CCA created high-acuity ambulatory care programs to provide integrated primary, behavioral health, dental, and palliative care, as well as chronic disease management.

KEY TAKEAWAYS:

- ED visits decreased slightly.
- More hospitalized patients with behavioral health diagnoses received a follow-up visit within seven days of discharge.
- CCA clinicians particularly valued mobile integrated health services.
- Staff filled out 442 housing applications on behalf of 68 patients.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

CCA's TCCI initiative targeted patients dually eligible for Medicare and Medicaid who were part of CCA's Senior Care Options or One Care programs. All received primary care at Commonwealth Community Care (CCC) Boston, a clinical affiliate of CCA. The initiative's primary goal was to reduce hospitalizations and ED visits. Secondary goals included increasing suitable housing placements, patient satisfaction with mobile integrated health (MIH), and timely follow-up after inpatient behavioral health stays.

STAFFING MODEL AND KEY PARTNERS

CCA's initiative team included health outreach workers (HOWs; 1 full-time equivalent (FTE)), a HOW manager (1 FTE), a HOW administrator (1 FTE), a psychiatric nurse practitioner (NP; 1 FTE), and a paramedic (1 FTE).[xx] Key partners were Boston Medical Center, Boston University Department of Family Medicine, the Harvard School of Dental Medicine (HSDM), and EasCare, LLC which provided mobile integrated health services. Patients' CCC Boston care teams, consisting of primary care, care management, social and behavioral health care staff, and physical therapy staff, played important roles as well.

SERVICE DELIVERY MODEL

CCA's TCCI initiative included five elements. The first was follow-up for patients admitted to an inpatient setting for a behavioral health diagnosis. CCC Boston staff identified these patients upon admission and notified the HOW, who worked to build relationships with them during their stays. Patients received close care management after discharge. The psychiatric NP also met with patients to conduct medication review and connect them to a psychiatrist if needed. The second component of CCA's initiative worked to find or stabilize housing for housing-insecure patients. Eligible patients were identified when a visit with a HOW revealed a housing-related need. A dedicated HOW with housing expertise and the HOW administrator then supported

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[xx] A population health specialist (0.56 FTE), a senior researcher (0.4 FTE), CCA's Senior Director of Primary Care Operations (1 FTE), CCA's Chief Medical Officer (0.05 FTE), and CCC Boston's Medical Director (0.1 FTE) provided additional support, as did a senior analyst.

these patients based on their individual circumstances. The third element focused on connecting patients to dental care. CCC Boston teams referred patients to HSDM when they identified a dental care need. This process included completing applications on patients' behalf, scheduling a series of appointments, and providing transportation. The initiative's fourth component was a mobile integrated health (MIH) program designed to deliver timely urgent care at home during off-hours. After referral by a CCC Boston provider (typically made when patients called for help), EasCare sent a mobile team to patients' homes. Patients were treated same-night and received follow-up calls from their CCC Boston care teams the next day.

> *"[When] your primary care clinician, who knows you, knows your family, knows your community... If they have the skills to do basic palliative care... I think there's humongous value there."*
>
> **– CCC MEDICAL DIRECTOR**

Finally, CCA's initiative included a focus on palliative care. Providers identified patients based on diagnosis and prognosis, with eligibility determined by the presence of an end-stage, progressive need. CCA aimed to conduct a palliative care consult with these patients within 14 days of diagnosis. They also trained CCC Boston primary care clinicians in an annual lecture series to provide palliative care. In designing their initiative, CCA drew on other programs involving high-intensity services in ambulatory care, support for care transitions for high-risk patients, and mobile integrated health services.[1-3]

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

CCA originally planned to implement behavioral health telemedicine as part of its TCCI initiative, but instead opted to deliver these services in person. In addition, leaders added a HOW manager role to provide expertise and other support for efforts to secure housing, a process that proved to be very time-intensive. They also adjusted program measures and data collection processes to respond to feasibility concerns.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

All patients who took part in the aforementioned clinical programming were CCC Boston primary care patients. Care partners and care teams identified members in need of program services. Many patients had experienced medical and behavioral health needs, unstable housing and phone access and past challenging experiences with health care providers. CCC Boston developed and maintained trust with patients by integrating their primary care, care management, and supportive services as part of a high-touch relationship. CCC Boston also leveraged the skills of bilingual staff and use of the Language Line to help mitigate language barriers.

Initiative staff's relationships with patients centered on patient needs and typically persisted before, during, and after the length of the initiative. Patient meetings were held in the clinic, at home, or in the community. They also found that connecting with patients with behavioral health diagnoses while they were hospitalized was an effective strategy, as it offered a chance for relationship-building and allowed HOWs to provide support after discharge. The inpatient stay also provided an opportunity to find and speak with patients who did not have stable housing.

> *"I think the biggest benefit is that [patients] have a supportive team after they're being discharged, [which is typically] a very vulnerable time in their life."*
>
> **– BEHAVIORAL HEALTH HOW**

Partnerships

CCC Boston designed the initiative such that staff were fully integrated into the overall CCC structure. As members of the CCC Boston staff, initiative staff formed ongoing relationships with the patients and other members of the care teams resulting in individualized approaches to all patients. This integration made behavioral health care, housing support, and palliative care staff well-positioned to connect patients to relevant program elements.

HSDM was also closely involved in CCA's initiative, meeting monthly with CCA staff and communicating regularly by email. In addition to facilitating patients' access to dental care, this exchange helped CCC Boston clinicians and staff understand what supports patients needed in the process of seeking dental care. CCC Boston staff, in turn, helped HSDM maintain accurate patient contact information and implement reminder calls and text messages. CCA provided transportation for members and CCC Boston staff helped support coordinating these services. HSDM required three appointments to consider a patient's intake and assessment complete; coordinating this number of visits was the main barrier for patients to attending appointments and completing their dental care.

Another important partner was EasCare, which provided MIH services, subject to time and geography restrictions. CCC Boston used MIH services, and CCC Boston clinicians worked closely with the community paramedic, communicating through the electronic medical record (EMR), and conducting on-call physician review of all dispatches.

Technology and infrastructure

Shared access to software platforms, including the EMR, allowed information to flow among initiative staff, CCC Boston teams, and MIH services. CCC Boston clinicians used the EMR and other internal infrastructure to coordinate care, request MIH services, and support patients with transportation and other needs. Behavioral health HOWs received laptops that allowed them to connect with clinicians during post-discharge patient meetings. In contrast, coordinating with HSDM, which used a separate medical record system, required manual workarounds.

CCA's status as both a payer and a provider made data collection easier as did the employment of a program analyst. Still, the team found that gathering information through business intelligence reporting and the EMR was more difficult than expected. Measure designs required multiple data sources and denominators and collecting surveys from complex patients proved difficult.

IMPACT

PATIENTS SERVED

A total of 924 patients received services through CCA's TCCI initiative. Most patients were community-dwelling adults with multiple comorbidities.

RESULTS TIED TO INITIATIVE GOALS [xxi]

During the program, there were 784 dental visits and 1,382 MIH dispatches, of which 144 resulted in transport to the ED. Hospitalizations increased slightly and ED visits decreased slightly relative to baseline.[xxii] The percentage of patients with follow-up visits within seven days after discharge from an inpatient behavioral health stay increased from 74% during baseline to 91% during the intervention.[xxiii] Among patients meeting the federal definition of homelessness, six of 78 (7.7%) were housed during the intervention. Housing team HOWs filled out 442 housing applications on behalf of 68 patients. Staff reported that a lack of affordable housing in Boston hampered housing efforts, particularly given the relatively short timeframe of the initiative. The need for accessible housing that accommodated patients' serious health needs and mobility limitations further exacerbated the shortage.

Staff also noted that much of the team's work involved stabilizing patients who were housed but experiencing housing insecurity. While only 78 patients met federal homeless criteria, HOWs met with over 218 patients in 730 encounters to provide housing support. Their efforts included helping patients stay in their current homes, make accessibility improvements, or move to apartments that better met their needs.

[xxi] *Data sources:* Medicare/Medicaid billing records (inpatient & ED use, follow-up visits), EMR (follow-up visits), staff records (housing). Baseline: CCC Boston patients in the year prior to implementation (excluding those reassigned to another CCA site prior to launch). Note: Except housing, data reflect eligible patients, not just participants.

[xxii] Hospitalizations increased from 0.056 to 0.068 per patient per month and ED visits fell from 0.137 to 0.127 per patient per month.

[xxiii] However, the total number of behavioral health–related discharges was much lower during implementation (45 discharges over 22 months) than during baseline (110 discharges over 12 months). This may have contributed to the increased percentage of patients receiving timely follow-up.

PATIENT EXPERIENCE

Initiative staff reported positive anecdotal patient feedback and valuable lessons from patient input. Given the breadth of CCA's TCCI initiative, patients participated in the program in a variety of ways. Individuals with complex medical conditions received prompt palliative care consults; people with access barriers such as physical disabilities received dental care; and patients treated at home by the MIH team avoided ED visits. Regarding housing support, patient stories show the level of effort HOWs expended, even when they did not secure housing. For example, HOWs worked with a homeless patient with a serious cancer diagnosis, submitting many applications and leveraging community connections to learn of new opportunities. When an application was approved but the unit failed inspection, the team continued working with the patient, including providing emotional support through ongoing meetings.

STAFF EXPERIENCE

HOWs and other team members reported feeling that they provided important services to patients and that their work made a difference, though leaders noted that challenges connecting with patients and sustaining patient participation could contribute to burnout among HOWs. Leaders reported that CCC Boston staff reacted positively to most initiative elements. They felt that clinicians found MIH services and palliative care training particularly helpful. Coordination with HSDM was felt to be time consuming but valuable.

PROGRAM SUSTAINABILITY

CCA sustained many elements of its initiative, though in altered forms. Behavioral health and housing services continued, but without a HOW administrator role. Instead of maintaining separate behavioral health HOW, all HOWs on the team received training and support to address patient behavioral health needs in order to improve continuity for patients and reduce burnout among staff. The MIH program remains a key clinical tool at CCC. In addition, CCA maintained its relationship with HSDM through ad hoc communications while continuing to develop connections with other dental care resources. Palliative care trainings continued as well. CCA worked with staff implementing the initiative to identify which elements of the initiative to sustain and fund on an ongoing basis.

CCA found that both training and knowledge transfer from HOWs to other staff were likely to have a lasting impact on care. They noted that both increased knowledge of local housing systems and training in palliative care were particularly beneficial. In addition, participation in TCCI uncovered opportunities to plan for needed improvements in its data capabilities.

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HEBREW SENIORLIFE

INITIATIVE SUMMARY

TARGET POPULATION: Residents over age 62 living in supportive, affordable senior housing.

FOCUS AREAS: Reduce transfers to hospitals, emergency departments (EDs), and long-term care. Increase utilization of wellness programs. Reduce hospital utilization. Improve quality of life and ability to live independently.

INTERVENTION: Hebrew SeniorLife (HSL) developed the Right Care, Right Place, Right Time (R3) initiative to create a replicable and sustainable model of affordable housing with supportive services to enable seniors to live independently as long as possible, while also reducing health care costs. The initiative embedded wellness teams in affordable senior housing sites to help low-income seniors manage health care needs and address health-related social needs.

KEY TAKEAWAYS:

- Ambulance transports to the ED decreased by 18%.
- Over 90% of at-risk enrollees participated in fall prevention and medication adherence programs.
- Participants expressed high overall satisfaction with the initiative.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

R3 targeted residents over age 62 living in supportive, affordable senior housing. The initiative did not restrict eligibility based on income, insurance coverage, or health conditions and utilization, but the majority of enrollees had low incomes. The average age of the cohort was in the mid-80s, and many enrollees had multiple chronic conditions. The initiative's primary aim was to reduce transfers to hospitals, the ED, and long-term care. Secondary goals were to increase utilization of wellness programs, reduce hospital utilization, and improve residents' quality of life and ability to live independently.

STAFFING MODEL AND KEY PARTNERS

R3 served seven supportive housing buildings, concentrated into two regions in Brookline and on the South Shore. Core program staff consisted of two full-time wellness teams, each composed of one wellness coordinator and one wellness nurse.[xxiv] Wellness coordinators had Master of Social Work (MSW) degrees and Wellness nurses were registered nurses (RNs). The team members worked together to assist residents with a range of issues including promoting self-directed care, improving connections with services and health care providers, monitoring at-risk residents, and providing care coordination. Each team split its time between buildings in one of the two regions.

R3 buildings included Hebrew SeniorLife (HSL) sites and sites operated by WinnCompanies (Winn) and Milton Residences for the Elderly (MRE). Other initiative partners included Tufts Health Plan, Blue Cross Blue Shield of Massachusetts, Springwell Aging Services Access Point (ASAP), South Shore Elder Services, and local emergency medical services (EMS) providers.

SERVICE DELIVERY MODEL

Wellness teams worked with the staff onsite in each building, spending dedicated time at each location weekly. While the focus was on enrolled participants, a variety of building-wide wellness programs were available to all residents regardless of enrollment

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[xxiv] A program director (0.5 full-time equivalent [FTE]) and an investment director (0.1 FTE) supported these teams.

in R3. In addition, R3 teams supported housing site staff and partnered with them in providing more comprehensive services for all residents. For example, R3 teams encouraged menu adjustments to emphasize healthy eating and trained maintenance, culinary, and other staff on working with residents with dementia and on identifying and reporting mental health issues, abuse, and neglect. The teams also created newsletters with helpful information and resources.

> *"I think that we have a role as housing providers in residents' health along with their primary care doctor, their hospital, and their ASAP... A lot of our work is really just coordinating all those efforts."*
>
> **– WELLNESS COORDINATOR**

R3 teams provided additional supports for residents enrolled in R3. These enrollment-based services included personalized care management, regular check-ins, and connections to resources. Wellness teams interacted with enrolled participants through monthly check-in calls, impromptu connections in the building, and as-needed phone or in-person communication. For health care concerns, they worked with enrolled residents' entire teams (e.g., families, physicians, care managers, and ASAPs) to navigate, educate, and refer residents for services. They also helped manage participants' care transitions and provided interventions for fall risk, medication adherence, and mental health. In addition, teams supported enrollees with insurance coverage, service approvals, medical appointments, and equipment needs. Most participants participated in the initiative for approximately 16 to 18 months.

Residents self-selected into R3's enrollment-based services. The R3 team advertised the initiative through flyers, presentations, social events, newsletters, and newcomer packets. Word of mouth and follow-up with high-risk residents reinforced the message. Once a resident expressed interest, the wellness team conducted a comprehensive, in-person assessment on topics such as medical and mental health history, cognition, lifestyle, current needs, and quality of life. The team also worked to become the first line of contact for enrolled residents in order to enable coordination and centralized support. As part of this effort, the R3 team gave enrollees cards with the team members' pictures and contact information. They advised participants to show these cards to medical providers along with their insurance cards in order to connect their clinicians with the R3 team.

R3 was based on evidence from Vermont's Support and Services at Home (SASH) program.[1,2]

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

Due in part to its previous experience with the target population and its strong model design, HSL did not make major revisions to the core elements of the R3 care model during implementation. However, the team made focused changes to its approach based on information gathered during the course of the initiative, including data and direct feedback from housing staff, residents, and partners. Changes included tailoring educational programing to identified need areas. For example, after learning that some residents were planning ED trips in advance, the team created an educational program about urgent care and other care options.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of residents

Wellness teams worked to build trusting relationships with residents, but it often took time for residents to understand and trust the initiative. Some sites had programming in place prior to R3, and at these locations, residents often did not understand what distinguished R3. Some residents also worried about privacy, hesitating to complete the initial assessment out of reluctance to disclose personal information and/or fear of being sent to a nursing home. The R3 team used a wide range of advertising and relationship-building strategies to address these concerns, including a flyer explaining how R3 differed from other programs. They also worked with housing site staff to determine who was best situated to conduct resident outreach, building on existing relationships when possible.

Having R3 wellness teams on site for one-on-one consultations facilitated relationship-building and service delivery. Such co-location allowed for casual contact between residents and wellness teams. It also helped R3 staff learn about residents' needs. For example, follow-up questions after a resident requested to photocopy a bank statement led the R3 team to assist that person with food stamp applications and healthy eating. Because wellness teams had a more detailed understanding of participants' lives, they were well-positioned to coordinate the many services participants received, but sometimes they were not available to meet all requests.

R3 staff used data and resident feedback to identify participant needs and interests. This information informed R3's building-wide wellness programming as well as interventions for areas such as falls and medication adherence for enrolled residents. However, limitations on the nurses' scope of work sometimes restricted options for addressing identified needs[xxv], and the team also faced challenges in finding resources to deal with language barriers, mental health and substance use issues, and memory support needs. In addition, R3 teams initially had limited capacity to focus on connecting with participants' families, particularly given cultural and language barriers with some residents.

Partnerships

R3 collaborated with a wide range of partners, adding more as the initiative progressed. The team worked closely with housing sites, ASAPs, local EMS and first responders, mental health providers, and health plans. HSL shared data across housing sites and regularly gathered and incorporated partner feedback through phone calls and quarterly meetings. In addition, the R3 team joined weekly housing site staff meetings and provided additional training for housing staff members.

The partnerships with the local EMS and first responders were particularly valuable as they provided data about transports to emergency rooms. Initially these data were provided as a way to track program impact, but quickly became a daily report allowing for follow up and support to residents in real time. First responders also served on the advisory group and provided written materials and in-person presentations to residents.

Wellness teams leveraged their relationships with residents to facilitate care coordination by health plans and medical offices, since teams could communicate and collaborate with care managers to reach residents. R3 staff also developed a social service resource list for each region, then worked to fill the resource gaps this process identified. For example, the team established a relationship with the Greater Boston Food Bank to increase food access and developed a clinical services agreement with a local agency to bring mental health supports onsite to three buildings. Attempts to forge similar partnerships with hospitals were largely unsuccessful, in part because hospitals were often so large that it was hard for R3 staff to know whom to approach in order to build these connections. The lack of connection with hospitals limited data collection and constrained R3's reach.

Navigating the division of labor between R3 and housing site staff was sometimes difficult, particularly early in implementation. Clear communication, shared understandings of each group's goals and roles, and a willingness to revise processes helped address these challenges. At Winn and MRE sites, R3 represented a different relationship between housing staff and residents than had existed in the past. This shift required changes in education and culture with respect to how building staff interacted with residents and their significant role in residents' wellbeing.

Technology and infrastructure

HSL created a detailed data collection plan, building capacity for data gathering and analysis and using the results to inform operations. Data collection was consistent across sites, and the team used both Microsoft Excel and customized software to track information. Collecting and utilizing this level of data was a culture change for housing site staff, who had not previously been expected to do this kind of work.

HSL also received data from partners, though data on ED and hospital use proved more difficult to capture absent hospital partnerships. Consistently, R3 found that 911 calls and ED transports were key data points for the intervention, allowing teams to perform immediate follow up, track impact, and identify need areas.

R3 leadership, wellness teams, partners, and housing staff discussed and shared data as part of regular meetings. In addition, UMass Boston worked closely with the team to conduct a mixed-methods program evaluation.

IMPACT

RESIDENTS SERVED

A total of 475 residents took part in the full R3 program and received enrollment-based services. In addition, all 1,100 residents had the opportunity to participate in building-wide programming.

[xxv] Due to HSL's status as a housing provider, regulations limited the scope of care nurses could provide in a housing setting.

RESULTS TIED TO INITIATIVE GOALS[xxvi]

Ambulance transports to the ED decreased by 18% from baseline compared to implementation.[2] There was no change in transfers to long-term care, though small numbers may have limited the ability to detect differences in this metric. Among participants receiving enrollment-based services, over 90% of people at risk for falls participated in fall prevention programs. Similarly, more than 90% of enrollees taking at least ten medications or with a history of medication adherence issues participated in medication adherence programs. After controlling for age, the rate of increase in hospital utilization in R3 buildings was 19% lower than for comparison sites.[3]

RESIDENT EXPERIENCE

Staff observed that participants receiving R3 enrollment-based services seemed to feel more independent, make more social connections, and participate in more activities. Focus groups conducted by UMass Boston reported positive impressions and high participant satisfaction. Participants felt that R3 was a helpful support, a good source of information, and a resource for providing routine monitoring and assistance. They valued monthly calls and the knowledge that someone cared about them and was available to help. In addition, they found that the wellness team was responsible and dependable, including in times of crisis.[4]

> *"I have the sense that almost any physical or medical problem, I've got somebody to talk to. And the fact of being checked in with regularly does feel good."*
>
> **– R3 PARTICIPANT[4]**

Focus group participants also noted areas for improvement. A number felt that wellness team hours were insufficient. Confusion about the schedules was also a concern for some. Convenience was another factor as some participants who lived farther from their wellness team's office felt the team could be difficult to contact. Some focus group participants also posited that cultural differences, issues of trust, or concerns about privacy could have impeded participation for certain residents such as African American and low-income residents.[4]

STAFF EXPERIENCE

R3 worked to enhance the integration of care at housing sites, expanding the type of services provided and the relationship between housing site staff and residents. This shift was a significant one for housing site staff, but teams generally embraced it, seeing the benefits of keeping an open mind about programs like R3 and other collaborations and strategies to support both housing staff and residents. R3 teams emphasized communication and collaboration as essential. HSL leaders saw feedback from staff, particularly wellness teams, as key for tailoring the initiative to participants' needs.

> *"Make sure that you can seriously commit to the process, that you're going to be open-minded."*
>
> **– HOUSING STAFF MEMBER**

PROGRAM SUSTAINABILITY

HSL emphasized sustainability from the beginning of the R3 initiative. Leadership supported the program based on its alignment with the organization's goals and the presence of encouraging initial data. During TCCI, the team worked to prove value and build relationships with payers such as Tufts Health Plan and Blue Cross Blue Shield of Massachusetts, moving toward their vision for a sustainable payment model, such as per member per month (PMPM) payments from health plans. While HSL made progress toward these goals during TCCI, they did not fully realize them by the end of the initiative.

Without PMPM payments, HSL faced challenges sustaining R3. The primary barriers included lack of funding for the wellness teams and challenges in achieving integration across geriatric and elder care services. After the initiative, the team received HPC

[xxvi] *Data sources:* EMS (ambulance transports), housing sites (long-term care), collection by initiative staff (participation), Medicare claims (hospitalization). Baseline: R3 buildings from January 2016 to June 2017. Comparison: Non-R3 affordable senior housing sites. Note: Data is building-wide, not specific to enrolled residents.

SHIFT-Care funding to continue the full model. This provided an opportunity to test a new, enhanced version of the initiative, titled R3[2], and to continue developing a sustainable business model.

R3 also developed resources to support program replication at other sites. These resources include assessment, tracking, and data collection tools; wellness programming and educational materials; partnership agreements and strategies; and resource lists. The team also promoted more widespread integration of senior housing and services, including presenting at conferences and advocating at the state and federal levels with a long-term goal of creating a sustainable funding source for these supportive services.

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LYNN COMMUNITY HEALTH CENTER

INITIATIVE SUMMARY

TARGET POPULATION: Primary care patients at Lynn Community Health Center (LCHC) with a serious mental illness who were enrolled in MassHealth Primary Care Payment Reform (PCPR).[xxvii]

FOCUS AREAS: Reduce unnecessary health care utilization. Reduce home health utilization. Reduce acute outpatient utilization. Reduce acute inpatient utilization. Reduce pharmacy expenses.

INTERVENTION: LCHC's initiative deployed community health workers (CHWs) to coordinate complex care services for patients with serious mental illness in the surrounding community.

KEY TAKEAWAYS:

- CHW's low caseloads, flexibility, and responsiveness supported the initiative in addressing patients' needs.
- Systemic barriers, such as waitlists for housing, detoxification, and rehabilitation, posed challenges.
- Home health utilization remained consistent throughout the initiative.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

LCHC's initiative targeted LCHC primary care patients with a serious mental illness who were enrolled in MassHealth PCPR. The initiative's primary aim was to reduce unnecessary health care utilization. Secondary goals included reducing home health utilization, acute outpatient utilization, acute inpatient utilization, and pharmacy expenses.

STAFFING MODEL AND KEY PARTNERS

The initiative team consisted of four full-time CHWs, supported by a program manager (0.3 full-time equivalent [FTE]) and a registered nurse (0.3 FTE). Many CHWs were bilingual. All received community health education outreach training through the Boston Public Health Commission's Community Health Education Center. Key partners in the initiative included Eaton Apothecary, a pharmacy located near LCHC, and MedSentry and Philips, companies offering electronic medication monitoring devices. Partners Connected Health consulted on monitoring device selection.

SERVICE DELIVERY MODEL

LCHC's initiative aimed to build skills, knowledge, and connections to resources among enrolled patients. CHWs helped patients navigate social needs, language barriers, and medication management. In addition, they supported patients with making and keeping appointments, including by teaching organizational skills around appointment attendance and brainstorming questions to ask when meeting with health care providers. CHWs accompanied patients to appointments within and outside of LCHC, supporting patient-centered care and treatment adherence by helping patients express their needs, wants, and questions and reinforcing provider recommendations. LCHC drew on a meta-review of the impact of CHWs and studies on clinical pharmacy services and remote medication monitoring to inform their planned care model.[1-3] The team identified patients through

> *"We made sure our interventions were 'teaching' interventions, not 'doing' interventions, so that once the program ended the patients... had increased [skills]."*
>
> **– PROGRAM MANAGER**

[xxvii] MassHealth PCPR was a value-based payment program that aimed to strengthen primary care, advance behavioral health integration, and transition primary care providers toward alternative payment methods.

referrals from LCHC primary care providers (PCPs), as well as from a high-risk list provided by MassHealth Behavioral Health Plan. CHWs confirmed patients' eligibility, then contacted them to introduce the initiative. For those who agreed to enroll, CHWs performed a comprehensive assessment addressing medical and psychosocial history, illnesses, and social needs. This process also outlined patients' goals and urgent concerns, as well as barriers, strengths and weaknesses, and past strategies employed in attempts to reach these goals.

After the assessment, the CHW and patient determined needed services and created a person-centered care plan. This process could include other members of patients' care teams or support networks if patients desired. Care plans also incorporated concerns that LCHC clinicians had noted in the electronic medical record (EMR). CHWs shared completed plans with patients' LCHC care teams and anyone else patients identified. If these individuals thought an important priority was missing from the plan, they informed the CHW.

Ongoing patient interaction and care coordination continued until program completion. CHWs kept in close contact with patients, including through calls, visits at home or in the community, and by joining them at appointments. They also coordinated with patients' care teams and updated care plans based on provider and patient feedback. Patients graduated from the program once they met their goals and were stable within the community. The average duration of participation was the length of the 18-month initiative, since many patients identified goals related to social needs that took time to meet.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

LCHC originally planned to implement remote medication monitoring as part of its initiative. LCHC's program would have included machines that dispensed medication and monitored adherence, as well as individual meetings between patients and pharmacists for medication review. However, LCHC was ultimately unable to implement this model element (see Partnerships section, below).

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

To support initial patient outreach, CHWs often contacted the next LCHC clinician who was scheduled to see the patient. They introduced the provider to the program and requested assistance in explaining the initiative to the patient. Depending on the circumstances, CHWs sometimes arranged to attend the scheduled appointment themselves. In some instances, CHWs were able to build on existing relationships with patients, as many had held other roles at LCHC before the initiative. These approaches were valuable because many patients did not respond to phone calls and/or hesitated to participate in an unknown program.

Once patients enrolled, LCHC developed patient-centered care plans that prioritized patients' goals and desired modes of support. CHWs played a key role by developing and implementing care plans, staying in close contact with patients, and forming a bridge between patients and care teams. CHWs were flexible in addressing patients' needs, including meeting wherever patients preferred and having extended hours. This helped lessen patients' barriers to ongoing participation, which included competing priorities and mental health symptoms. Many patients also had negative past experiences within the health care system, which CHWs countered by building strong relationships and using techniques such as motivational interviewing to help patients understand and have agency over their options.

Because many patients had multiple pressing concerns, CHWs addressed a wide range of needs. Some patients reported issues obtaining necessary care due to language barriers and/or citizenship status, and CHWs worked with them to address these barriers. They also worked with patients to find or stabilize housing. Waitlists within the wider health care and social service systems, particularly for detoxification, housing, and rehabilitation, complicated this process. Patients who enrolled closer to the end of the initiative did not always have time to meet the goals they identified. This was especially true for housing-related needs.

Partnerships

LCHC's initiative emphasized collaboration between CHWs and LCHC care teams, including PCPs, nurses, and behavioral health clinicians. CHWs checked in with these providers about specific concerns or medical conditions likely to affect patients, then incorporated those concerns into care plans. They also shared care plans with care teams, making them aware of patients' goals and giving them the opportunity to suggest additional focus areas. Collaboration continued throughout patients' participation in the initiative, with CHWs keeping all parties informed. CHWs received ongoing support in this work from the program manager, who dedicated a day each week for supervision. This allowed the CHW team to meet, discuss patients, and problem-solve through regular meetings and on an ad hoc basis.

CHWs also created connections with groups outside of LCHC, particularly home health providers. For patients who received home health care, they helped coordinate care and encouraged the patient and visiting nurse agency to work collaboratively. Ultimately, the team's goal was to increase these patients' independence and ability to manage their own medications. Initiative staff perceived this strategy to be effective, but also found that they needed to conduct significant education for home health providers in order to convey the goals of the initiative.

> *"I think we had a learning experience about what it was like to get something set up between a health center and a pharmacy and [a technology company]."*
>
> **– PROGRAM MANAGER**

Serious complications affected LCHC's partnerships with medication monitoring device companies. The first company selected with assistance from Partners Connected Health had ongoing technical issues and was eventually sold, forcing LCHC to identify a new partner. Progress with the second partner (also identified with support from Partners Connected Health) went more smoothly but implementing the complex intervention in the time remaining proved impossible—particularly after the departure of LCHC leaders who had championed the program. The LCHC team advised other groups considering similar partnerships to allow more time before roll-out, make sure the technology is ready and a good fit, include contract language stating that the company will continue to participate even if sold, and ensure continuity of strategic support and vision for the new technology.

Technology and infrastructure

Use of a shared EMR facilitated communication between CHWs and LCHC clinicians. CHWs entered care plans and encounter data directly into the EMR, where they were accessible to patients' LCHC care teams. They also used the platform to send updates to LCHC clinicians and review treatment plans and goals that those clinicians entered. In addition, LCHC trained staff to conduct standardized EMR documentation, which facilitated information retrieval.

Data collection to support program evaluation proved more difficult. While LCHC used some internal systems for data reporting, the team also relied on claims reports from the Massachusetts League of Community Health Centers. These reports did not allow LCHC to collect baseline data and were discontinued in April 2018, cutting off the team's access to financial data. LCHC was able to obtain some claims data from MassHealth and Medicare; however, these data were incomplete, so LCHC had to rely on patient self-reported data collected by CHWs.

IMPACT

PATIENTS SERVED

LCHC's initiative served 43 unique patients. Enrolled patients tended to be low-income, span a range of ages, races, and ethnicities, and have a variety of comorbidities and social needs. Some were immigrants or refugees; many were housing insecure or homeless.

RESULTS TIED TO INITIATIVE GOALS

Care plans were completed for 35 of the 43 enrolled patients. The most common social needs related to appointment support, housing, and financial issues. Home health utilization stayed steady throughout the initiative. As a result of data collection challenges, few quantitative outcomes can be reported.

PATIENT EXPERIENCE

Staff reported anecdotal comments from patients that the initiative had improved their overall quality of life and supported them in achieving their goals. Staff also felt that patients received more timely care than would have been possible without the initiative: whereas patients would normally need to talk to a receptionist, wait for that person to talk to a provider, and eventually schedule an appointment, CHWs sped up and personalized the process. CHWs also provided more consistent contact than social workers, who could only meet with patients every one to six months.

Patient stories illustrate the impact the initiative could make. CHWs assisted patients in overcoming serious obstacles, as in the case of a man who was incarcerated shortly after his initial CHW meeting. After an update from the patient, the CHW visited him and worked with the prison's case manager to arrange a reintegration plan. The patient went directly to LCHC upon release. The CHW then scheduled medical and behavioral health appointments, worked with him to obtain housing and SSI benefits, and continued providing support over time. One year after the end of the initiative, the patient remained actively connected with care.

CHWs also supported patients in addressing important medical needs. For instance, a CHW worked closely with a patient who needed an MRI but had severe claustrophobia. Before the appointment, the CHW and patient worked on relaxation and deep breathing techniques, using LCHC elevators to practice being in small spaces. They attended the appointment together, where the CHW continued to provide coaching. When the patient still had difficulty, the CHW connected with the patient's PCP, who ordered that the procedure take place in a larger MRI machine and prescribed an anti-anxiety medication. The combination of these supports allowed the patient to accomplish the MRI.

STAFF EXPERIENCE

Initiative staff felt that LCHC clinicians appreciated the program's support and its impact on patients, often asking whether additional patients were eligible. In addition, the team noted positive feedback from clinicians outside of LCHC, such as specialists and hospitals. These groups appeared to find the initiative helpful in supporting discharge planning and care coordination.

Members of the initiative team reported feeling positively about working with the group and seeing the difference their work made to patients. In addition, the program manager felt that the training CHWs received helped not only by building skills but also by allowing CHWs to make connections with their peers at other organizations.

> *"[I'm most proud of] working with the talented team and seeing that our efforts actually made a difference."*
>
> **– CHW**

PROGRAM SUSTAINABILITY

LCHC planned to continue most elements of its initiative through the MassHealth Behavioral Health Community Partners (BH CP) program. This program absorbed many patients and was the main means of continuing of the model, with LCHC anticipating that patient tracking, care coordination, and intensive care management would continue. For patients who transitioned to the MassHealth BH CP program or other initiatives within LCHC, CHWs conducted warm handoffs and conveyed information about patients' goals and the work they had done to reach them. If patients were not eligible for programs within LCHC, staff worked to refer them to other organizations.

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SPAULDING HOSPITAL CAMBRIDGE

INITIATIVE SUMMARY

TARGET POPULATION: Chronically critically ill patients at Spaulding Hospital Cambridge (SHC), a long-term acute care (LTAC) facility, with persistent respiratory failure.

FOCUS AREAS: Reduce LTAC length of stay. Reduce 30-day readmissions after LTAC discharge.

INTERVENTION: SHC's post-acute care transition (PACT) program provided cross-setting case management and palliative care coordination for chronically critically ill LTAC patients.

KEY TAKEAWAYS:

» The percentage of patients discharged home within 30 days of leaving SHC increased by 18%.

» Readmissions and SHC length of stay remained constant or increased.

» PACT strengthened SHC's relationship with visiting nurses, but patients' acuity and costliness limited participation by other partners.

CARE MODEL OVERVIEW

TARGET POPULATION AND FOCUS AREAS

PACT targeted chronically critically ill SHC patients with persistent respiratory failure who were admitted from Brigham and Women's Hospital (BWH). PACT aimed to reduce average LTAC length of stay and 30-day readmissions after LTAC discharge.

STAFFING MODEL AND KEY PARTNERS

The PACT team included two full-time care transition nurse case managers (CTNs), a program manager (0.2 FTE), and, and a full-time program coordinator who worked with partner organizations and managed data.[xxviii] CTNs had an average caseload of 25. Key partners included Partners HealthCare at Home, Care Dimensions, Fresenius Medical Care, New England Home Therapies, and more than ten local skilled nursing facilities (SNFs).

SERVICE DELIVERY MODEL

PACT aimed to coordinate patients' SHC discharge and help them safely remain home or in lower-intervention facilities. Support continued throughout multiple care transitions until patients had been at home or in a home-like setting for 30 days. The initiative drew from evidence that transitional care interventions can reduce readmissions after hospital discharge.[1] In addition, the model built upon an existing multidisciplinary team program that facilitates patients' transitions from BWH to SHC.[2]

CTNs met with eligible patients and families once their discharge date approached. During this initial meeting, CTNs explained the initiative and the CTN's role, including how it differed from that of SHC's inpatient case managers. For patients who agreed to participate, the PACT team created a care plan and revised it as patients' needs evolved. While patients were at SHC, CTNs coordinated with the inpatient team, administered a needs assessment, and provided coaching and education. They also worked with SHC staff to ensure that patients received goals of care conversations and psychosocial support. In addition, CTNs contacted patients' primary care providers (PCPs) to introduce the initiative.

After discharge, CTNs provided a wide range of supports, including education and coaching, care coordination and advocacy, and support for clinical decision-making. They also helped patients avoid readmission, including by making key appointments, troubleshooting problems at home, facilitating service access, and assessing barriers to care plan adherence. For patients discharged to a SNF, CTNs visited, introduced SNF staff to the initiative, attended family and care planning meetings, and coordinated

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[xxviii] An investment director, available for consultations and problem-solving, provided in-kind support to this team.

> *"Most of these patients have had a very lengthy ordeal... Even though they're very eager to get home, once they do they're very overwhelmed and their care doesn't end there."*
>
> **– CTN**

with the SNF's social workers and case managers. For patients discharged home, CTNs conducted a warm handoff to home health care nurses. They also made home visits within the first week of discharge and again as needed to provide education to patients and families.

Once a patient was home or in a home-like setting for 30 days without an unplanned readmission, the CTN transitioned them out of PACT. The discharge meeting—conducted by phone or in person—emphasized whom patients should contact with future needs. The CTN also notified the PCP and other services of the program's completion. Patients' average participation length was 103 days.

IMPLEMENTATION

MODEL FIDELITY AND ADAPTATIONS

SHC originally planned to employ one CTN and one palliative care social worker. However, after the social worker's departure early in the initiative, leaders shifted their focus to managing care transitions. They hired a second CTN and relied on SHC's existing inpatient social workers to conduct goals of care and end-of-life conversations—something the social workers had begun doing throughout SHC. In this context, leaders believed that PACT's strongest elements were transition coaching and home visiting. However, they later felt that retaining a social worker within the initiative would have provided valuable longitudinal support to patients.

SHC also hoped to develop a program for patients with tracheostomies to receive outpatient hemodialysis but was not able to do so. Challenges included a smaller-than-expected population of appropriate patients and partners' financial and risk concerns. The team's dialysis partner expressed discomfort with using time-limited funding for a private duty nurse to manage patients' respiratory needs. While this partner proposed offering outpatient hemodialysis at SNFs, SNFs ultimately declined to accept the risk involved.

LESSONS FROM IMPLEMENTATION

Enrollment and engagement of patients

Developing relationships during patients' time at SHC was essential to encouraging and maintaining participation. Staff felt that patients and families were more open with CTNs than with visiting nurses because CTNs had known them during their inpatient stays. The team found it most effective to begin these relationships once patients' discharge dates approached, so the program would feel more relevant to patients and families and be less likely to be confusing or overwhelming.

After discharge, CTNs coordinated across the multiple clinicians and case managers patients typically interacted with.[xxix] These efforts provided longitudinal support and helped prevent gaps in communication. CTNs also acted as patient advocates, able to uncover and address medical or psychosocial needs and provide emotional support. Home visits facilitated this work by providing insight into needs that might otherwise have been missed.

Partnerships

Initiative leaders created a network of providers—including SNFs, visiting nurse associations (VNAs), a hospice agency, an oxygen company, a dialysis company, and an infusion company—that the initiative could call on when needed. The program manager and coordinator visited these groups to discuss PACT and its patient population. The team worked to keep PACT patients in this network when possible. The PACT team also attended regular meetings with clinicians from BWH, which offered an opportunity to communicate about patients and learn about those who might soon be discharged to SHC.

[xxix] The PACT team could not follow out-of-state patients due to the lack of licensing compacts for nurses to work across state lines. This affected 13 patients.

CTNs were the key facilitators of PACT partnerships. They communicated with patients' numerous clinicians and care managers—both within the partner network and without—to connect them with the PACT team and each other. Within SHC, CTNs worked with inpatient care managers, including reading their notes and communicating regularly. These activities promoted care continuity throughout patients' post-discharge transitions, countering the gaps that often arose. For example, patients were sometimes discharged without prior authorizations for important medications, which often meant an interruption in drug therapy. At other times, CTNs discovered unclear ownership of medical follow-up, such as removing feeding tubes. Friday discharges had more room for error overall due to lower weekend staffing levels.

PACT particularly strengthened SHC's relationship with visiting nurses whom the team saw as one of their strongest partners. The team educated nurses about the nuances of caring for the complex PACT population and made them more aware of patients' goals and inpatient experiences. PACT leaders felt that nurses became more proactive and open to suggestions in caring for these patients. However, VNAs struggled to ensure staff continuity or provide discharge-day visits, in part due to scheduling and reimbursement issues. The PACT team tried to minimize these issues by informing VNAs that patients were high-risk and requesting frontloading and continuity of care, but VNAs could not always meet these requests.

> *"I think we were able to do a lot of education with the home care nurses who were getting these really complex patients at home. We were able to be a resource for them."*
>
> **– PROGRAM MANAGER**

Patient acceptance was an overall challenge with several partners, and cost constraints and patient acuity ultimately limited the services PACT could provide. This effect was particularly notable in the inability to implement outpatient hemodialysis. In addition, while the PACT team perceived SNFs as receptive to the initiative, most were only able to take one or two patients at a time.

Technology and infrastructure

CTNs had access to SHC's inpatient case managers' notes and notes from other Partners HealthCare facilities. PACT leaders considered introducing a software tool to enable communication across sites and teams; however, they ultimately determined that a new technology would be too burdensome and instead relied on phone, email, and in-person visits to connect with providers.

Challenges obtaining claims data and lags in Medicare billing complicated financial data gathering. Obtaining data from patients' SNF and hospital admissions required phone calls, as electronic medical records were not interoperable. CTNs collected these data for enrolled patients during the course of their normal work.

IMPACT

PATIENTS SERVED

Over the course of the initiative, 124 patients participated in PACT. Enrolled patients had an average age of 62. About half (51%) were insured by Medicare; the remainder were covered by Medicaid (15%) or commercial payers (33%). Of enrolled patients, 69% were White, 13% were Black, 7% were Hispanic, 2% were Asian, and the rest were of other or unknown race and ethnicity.

RESULTS TIED TO INITIATIVE GOALS[xxx]

The percentage of patients discharged home within 30 days of leaving SHC increased by 18%, rising from 56% during baseline to 66% during the intervention. However, while the team had hoped to see decreases in readmission rates and length of stay, these were not observed in the data. The percentage of patients with 30-day readmissions after LTAC discharge stayed constant, while the percentage readmitted directly to acute care from SHC rose by 18%. The average LTAC length of stay rose from 52 days at baseline to 56 days for enrolled patients.

PACT leaders speculated that a subgroup of patients (e.g., those who were never discharged) might have influenced length of stay results. They also noted that patients' high acuity meant that medical necessity sometimes dictated outcomes, such as by

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[xxx] *Data sources:* PACT program tracking sheet (discharge home), Partners HealthCare data (other measures). Baseline: Patients meeting eligibility criteria in the six months before initiative launch.

requiring a patient's readmission to acute care despite the team's best efforts. Overall, the team felt that capturing data on the most effective parts of the initiative—in their view, home visits and provider communication—was difficult.

PATIENT EXPERIENCE

Staff felt that having an advocate and single point of contact was very important for patients. They reported that patients felt supported by having a centralized support who was knowledgeable about their inpatient care. In addition, they observed that participation in the initiative appeared to increase patients' autonomy and self-management ability.

Patient stories illustrate PACT's impact. For one patient with serious complications from lymphoma, a CTN communicated with visiting nurses to convey information and request continuity of care. The CTN also identified financial, transportation, and medication gaps through a home visit. The CTN worked with the patient to address some of these needs, then contacted the VNA to request urgent social worker support for the rest. Shortly thereafter, the CTN discovered that the VNA was about to discharge the patient due to an insurance change. The CTN requested that they delay this process, then contacted SHC's financial office for assistance. Ultimately, the patient kept her insurance and VNA, continued to receive social work support, and attended all future appointments. These extensive coordination efforts were typical of CTNs' work, which often also involved PCPs, acute care hospitals, pharmacies, and/or SNFs.

STAFF EXPERIENCE

Anecdotally, CTNs reported being proud of helping patients and keeping them at home. Initiative leaders felt that PCPs found PACT helpful because of its comprehensive understanding of and approach to meeting patients' needs. They also perceived visiting nurses as responsive and open to the initiative. In addition, the program manager believed that SNF staff found PACT's ability to provide detailed information helpful overall, though taking on PACT patients was sometimes challenging. The PACT team reported feedback from some staff/clinicians that the program seemed duplicative; however, they found that while many care management resources did exist, most were not as robust and provided less communication, continuity, and follow-through than PACT.

> *"To be able to keep [patients] home and safe is what I'm most proud of... I know how people bounce back and forth."*
>
> **– CTN**

PROGRAM SUSTAINABILITY

SHC absorbed some PACT elements into its existing workflows. These included improved handoffs between case management and home health care and increased education around this transition. SHC also planned to keep and share the educational materials developed during the initiative.

Awareness raised through PACT led to changes in other areas. PACT leaders reported that Partners HealthCare executives were impressed with the program and began initiatives to expand community and transitional care management. They also noted that several members of PACT's partner network adopted elements of the initiative. SHC inpatient care managers became more aware of the challenges that the PACT patient population faced. However, SHC discontinued CTN positions because they did not appear to have an impact on SHC's length of stay

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APPENDIX: METHODOLOGY

The primary goal of the TCCI Program was to support promising, innovative programs to address the Commonwealth's most complex health care cost growth challenges by reducing costs while improving quality and addressing patient needs. The HPC adapted an evaluation framework used by the Centers for Medicare and Medicaid Services to evaluate the ten initiatives against these goals. This evaluation framework, described by Berry et al., 2013 employed three broad categories—implementation, impact, and sustainability—to assess the program across its lifespan[xxxi]:

- **IMPLEMENTATION:** Was the intervention fully deployed? What were the key lessons learned or challenges faced during implementation?
- **IMPACT:** Did the intervention achieve program goals?
- **SUSTAINABILITY:** Did the intervention produce lasting changes?

Qualitative and quantitative data drawn from each initiative were used to assess performance across these three domains. HPC evaluation staff conducted semi-structured interviews with initiative staff including Investment Directors, Program Managers, clinical staff, and non-clinical roles. In total 28 interviews were conducted with two to four interviews per awardee. The HPC also collected written reflections from awardees on their performance at program launch, mid-point, and program end. In addition, after the programs concluded, awardees responded to a questionnaire with details about their plans to sustain their programs after HPC funding ended. Interview transcripts and written reflections were qualitatively coded using NVIVO[xxxii] software to identify key themes, successes, and challenges. At the same time, the HPC contracted with Brandeis University to conduct qualitative case studies at four TCCI Program sites to better understand how the initiatives addressed care coordination. These case studies included interviews with patients and staff from the initiatives and their partners. Findings from the case studies were included in the TCCI Program Evaluation Report. For more details on the case studies, see the TCCI Care Coordination Case Study.

Awardees were also required to submit quantitative data to the HPC on a quarterly basis. These Key Performance Indicators (KPIs) were designed by the awardees during their preparation period and focused on measuring the impact of each initiative (See Exhibit 1, below).

Using this mixed methods approach for the TCCI Program was particularly important because most initiatives were not implemented with controls, meaning observed outcomes could have had other causes. In addition, the qualitative inputs from program staff were critical to accurately characterizing the experience of each initiative with regard to implementation, impact, and sustainability.

Qualitative and quantitative data were analyzed separately for each awardee. Qualitative materials were used to answer questions about implementation, impact, and sustainability. Following qualitative coding, quotes were arranged into thematic groupings and organized into an outline which was reviewed by members of the HPC evaluation and HPC program contact team. Quantitative KPI data measuring processes were used to measure initiative implementation, while those measuring utilization, cost, outcome, and experience were used to measure impact. Quantitative data were organized and cleaned by members of the HPC evaluation team, a process which included assessing the quality of quantitative data and seeking clarification on data collection methodology from awardee staff.

[xxxi] Berry, S.H., Concannon, T.W., Gonzalez-Morganti K., Auerbach, D.I., Beckett, M.K., Chen, P.G., ... Weinick, R.M.. (2013). CMS innovation center health care innovation awards: Evaluation plan. RAND Corporation.

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The HPC developed the evaluation report with assistance from a team at Brandeis University. The HPC provided the Brandeis team with processed quantitative and qualitative data, and they identified common themes across the ten initiatives (featured in **Part One: TCCI Program-Wide Themes** of this report) and created draft versions of the report that served as a basis for the final version completed by the HPC.

It is important to note the limitations of the evaluation findings. The initiatives served relatively small samples of patients and did not universally employ baseline or comparison group data, which limits the ability to draw generalizable conclusions and statistical efficacy. In addition, there was variability in the quality of the patient experience data from awardee to awardee which may affect the reliability of the patient experience data in the report. Finally, as noted elsewhere in the report, data collection challenges experienced by some awardees limited the KPI measures available to inform this report.

Exhibit 1: Select KPI measures from the TCCI Program

BEHAVIORAL HEALTH NETWORK

KPI	NOTES
Enrollment	Counted individuals and families.
Contacts with enrollees	Collected count of contacts each month.
Housing status	Measured by the Arizona Self Sufficiency Matrix, assigned at intake and discharge.
School attendance	Data provided by schools. Included students with 3 months of baseline attendance data prior to enrollment and at least 3 months of attendance data after enrollment. Omitted preschool age children.
Patient experience	Collected through the Care Coordination Study interviews and focus groups.

BERKSHIRE MEDICAL CENTER

KPI	NOTES
Patients served	Data from initiative records.
Number and type of sessions	Included initial evaluation, additional psychotherapy sessions, and group mindfulness/resiliency sessions.
ED utilization	Data from Berkshire Medical Center electronic health record (EHR).
Inpatient utilization	Data from Berkshire Medical Center EHR.
Patient experience	Data collected by program staff using a survey developed by the program.

BOSTON HEALTH CARE FOR THE HOMELESS

KPI	NOTES
Enrollment	Data from initiative data warehouse.
Patient encounters and outreach attempts	Data from initiative data warehouse.
Duration of participation	Data from initiative data warehouse.
ED utilization	Data from MassHealth claims and EHR chart review.
Housing status	Data from initiative visit records.
% of patients with OUD receiving treatment counseling	Data from Boston Health Care for the Homeless Program EHR.
Patient experience	Collected through the Care Coordination Study interviews and focus groups.

BOSTON MEDICAL CENTER

KPI	NOTES
Enrollment	Data from initiative records.
Duration of engagement	Data from initiative records.
Demographics of enrolled patients	Demographics data included age, race, ethnicity, and insurance coverage.
Housing status	Data from Boston Medical Center (BMC) EHR.
Chronic illness diagnoses	Data from BMC EHR.
Encounters by type	Tracked whether encounters took place by phone, on the BMC campus, or in the community.
Health related social needs (HRSN)	Data captured by screening tool developed by the program.
Proportion of HRSNs addressed/mitigated/resolved	Data from initiative records. Data includes those referred for legal support/consultation.
ED utilization	Data from BMC EHR.
Inpatient utilization	Data from BMC EHR.
Total Medical Expenses	Data from BMC EHR.
Patient experience	Data collected by program staff using a survey developed by the program team.

BROOKLINE COMMUNITY MENTAL HEALTH CENTER

KPI	NOTES
Enrollment	Data from initiative records.
Demographics of enrolled patients	Data from initiative records.
ED utilization	Data from EHR chart review (Beth Israel Deaconess Care Organization (BIDCO)).
Inpatient utilization	Data from EHR chart review (BIDCO).
Total medical expenses	Data from BIDCO claims registry.
Patient experience	Collected through the Care Coordination Study interviews and focus groups.

CARE DIMENSIONS, INC.

KPI	NOTES
Enrollment	Data from initiative records.
Proportion of eligible patients who enroll/ Reasons for not enrolling	Data from initiative records.
Advanced directive conversations	Data from North Shore Physician Group (NSPG) practice records.
Patients with completed MOLST form on file	Data from Care Dimensions, Inc. (CDI)/NSPG medical records.
ED utilization	Data from NSPG practice records.
Inpatient admissions	Data from NSPG practice records.
Inpatient readmissions	Data from NSPG practice records.
Hospice admissions	Data from CDI records.
Hospice days of service	Collected from CDI records; used hospice days of service instead of length of stay because many patients spent long periods of time in hospice care.
Patient experience	Collected through the Care Coordination Study interviews and focus groups.

COMMONWEALTH CARE ALLIANCE

KPI	NOTES
Patients served	Data from initiative records.
Number of dental visits	Data from Commonwealth Care Alliance (CCA) EHR.
Mobile health dispatches	Data from paramedic dispatch log and urgent care call line records.
Mobile health visits leading to ED visits	Data from paramedic dispatch log.
BH discharges receiving follow up within seven days	Data from Medicare/Medicaid billing data, CCA EHR.
Housing team encounters	Data from initiative records.
Housing applications filed	Data from initiative records.
Housing status	Data from initiative records.
ED utilization	Data collected from Medicare/Medicaid billing records.
Inpatient utilization	Data collected from Medicare/Medicaid billing records.

HEBREW SENIORLIFE

KPI	NOTES
Enrollment	Data from initiative records.
Proportion of at risk participants enrolled in fall prevention	Data from initiative records.
Proportion of at risk participants enrolled in medication adherence program	Data from initiative records.
Transfers to long-term care	Data from initiative records.
Ambulance transports	Data from emergency medical service company service records.
Patient experience	Collected through focus groups conducted by UMass Boston.

LYNN COMMUNITY HEALTH CENTER

KPI	NOTES
Enrollment	Data from initiative records.
Care plans completed	Data from initiative records.
Home health utilization	Data from MassHealth claims and Lynn Community Health Center EHR.

SPAULDING HOSPITAL CAMBRIDGE

KPI	NOTES
Enrollment	Data from initiative records.
Demographics of enrolled patients	Demographics include age, race, ethnicity, and insurance coverage.
Percent of patients discharged home within 30 days of leaving SHC	Data from initiative records.
Length of stay	Data from Admission, Discharge, and Transfer system at Partners HealthCare.
Readmission rate	Measured readmissions to acute care, either after discharge home or directly from Spaulding Hospital Cambridge.
Patient experience	Data collected by program staff using a survey developed by the program team.

ACKNOWLEDGMENTS

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The HPC acknowledges Palmira Santos, and Kristen Faughnan, of Brandeis University for thematic analysis and initial drafting of this report.

The HPC extends its sincere gratitude to all of the participating organizations and to their clinical and non-clinical staff who provided much of the information contained within this report in the form of submissions to the HPC. We hope that this report provides useful information for providers, insurers, policy makers, and the public.

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