TELEMEDICINE PILOT INVESTMENT PROGRAM

EVALUATION REPORT

MASSACHUSETTS
HEALTH POLICY COMMISSION

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EXECUTIVE SUMMARY

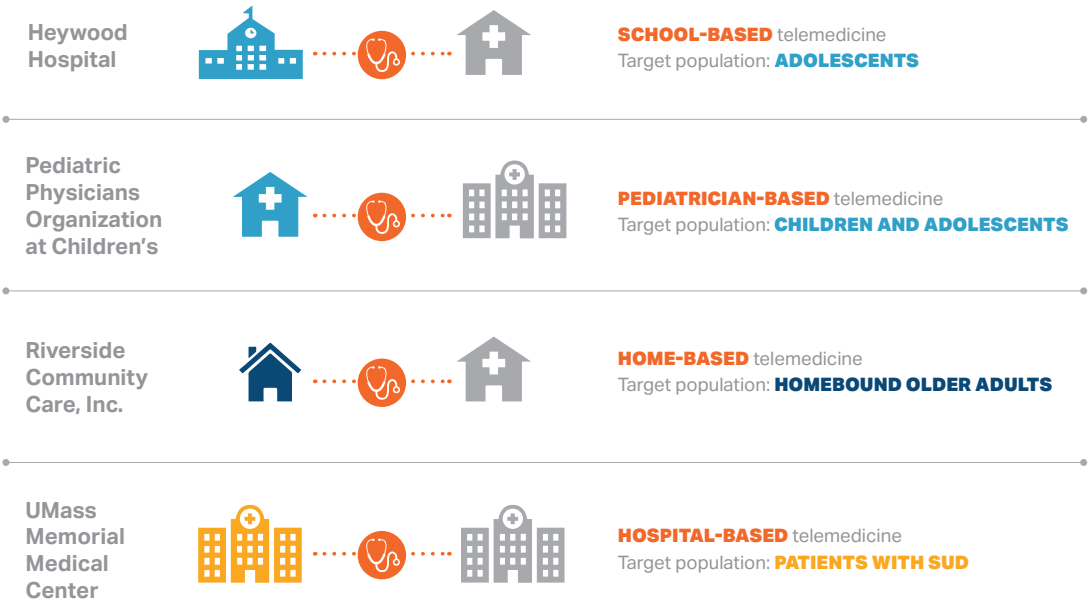
PART ONE: BACKGROUND

Established through the Commonwealth of Massachusetts' landmark cost containment law, Chapter 224 of the Acts of 2012, the 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.

Chapter 224, "An Act Improving the Quality of Health Care and Reducing Costs through Increased Transparency, Efficiency and Innovation," authorized the HPC to invest in new and promising care delivery and payment models through initiatives such as the Health Care Innovation Investment Program (HCII), a competitive investment program. Additionally, in 2015, the legislature directed the HPC to implement a pilot program to further the development and utilization of telemedicine in the Commonwealth.[i] Accordingly, in 2016, the HPC launched the Telemedicine Pilot Investment Program (the Pilot Program) to expand access to behavioral health care. Recognizing critical shortages in behavioral health care across the Commonwealth, the HPC chose to fund interventions that utilized telemedicine for synchronous behavioral health treatment sessions across three target populations: children and adolescents, older adults aging in place, and individuals with substance use disorder (SUD).

The primary goal of the Telemedicine Pilot Investment Program was to demonstrate the potential of telemedicine to address behavioral health access challenges in high-need populations. Additionally, the Telemedicine Pilot Investment Program was designed to demonstrate effectiveness of multi-stakeholder collaboration to serve high-need populations and inform care delivery and payment reform activities across the Commonwealth. Following a competitive selection process, the HPC Board approved $1.7 million in funding for the Telemedicine Pilot Investment Program across four awardees: Heywood Hospital, the Pediatric Physicians' Organization at Children's Hospital, Riverside Community Care, Inc., and UMass Memorial Medical Center.

Exhibit 1: Telemedicine Pilot Investment Program Sites



i See Section 161 of Chapter 46 of the Acts of 2015.

This Report is divided into three sections. Part One describes the development of the Telemedicine Pilot Investment Program. Part Two describes each of the four awardee's care models, lessons from implementation, program impact, and plan for sustaining the initiative after the implementation period. Finally, Part Three synthesizes learnings from across the Telemedicine Pilot Investment Program in the context of the telehealth policy landscape.

PART TWO: INITIATIVE CASE STUDIES

Given the variety in setting and target population, each awardee's experience offered unique insights as they navigated program implementation and tracked initiative impact. Key highlights include:

- **HEYWOOD HOSPITAL** collaborated with two schools located in central Massachusetts and a behavioral health partner to implement school-based counseling services for adolescent students with unmet behavioral health needs. In addition, schools employed school-based care coordinators who connected students and families with community resources. Forty-six students received 584 telemedicine sessions, and 36 additional students received care coordination services. Families and students reported high levels of satisfaction and avoided missed school and travel time needed for office-based appointments.
- **PEDIATRIC PHYSICIANS' ORGANIZATION AT CHILDREN'S HOSPITAL (PPOC)** implemented a telemedicine initiative to provide psychiatric care to pediatric patients by connecting local pediatricians' offices with a child and adolescent psychiatrist. Five primary care offices participated, providing care to 176 patients and over 300 telemedicine sessions. Wait time for psychiatric consults decreased by 47%, and patients showed improvements in clinical assessments. PPOC planned to continue services after their initiative concluded.
- **RIVERSIDE COMMUNITY CARE, INC.**, a community BH provider, partnered with Aging Services Access Points (ASAPs) to implement a home-based telemedicine initiative to serve homebound older adults with unmet behavioral health needs. Their initiative served 84 patients in 632 telemedicine sessions. Technological challenges in patients' homes and the constraints of staff travel between patient homes posed challenges for the initiative, but patients improved on measures of depression and expressed high levels of satisfaction.
- **UMASS MEMORIAL MEDICAL CENTER** implemented a telemedicine initiative to bring addiction psychiatry services to patients in the hospital. They also employed on-site peer recovery coaches and social workers to increase patient engagement in evidence-based treatment for substance use disorders (SUD). Throughout the initiative, 444 patients received SUD treatment services and 155 telemedicine sessions were conducted. The wraparound services and multidisciplinary staff offered patients many ways to engage. Staff reported improved patient care and positive changes in hospital staff's attitudes about addiction.

PART THREE: INSIGHTS FROM THE PILOT PROGRAM AND ONGOING CONSIDERATIONS FOR TELEHEALTH

The shared opportunities and challenges encountered by the four telemedicine initiatives are instructive for entities considering implementing a telemedicine initiative or learning more about what characterizes a well-executed and effective telemedicine program.

- **SETTING:** The physical location in which a patient receives telemedicine services has a meaningful impact on the delivery of a telemedicine program. Across the four types of settings used by the initiatives (home, school, hospital, and pediatric primary care office), awardees identified the need to anticipate the potential constraints and opportunities of a given setting for telemedicine and take steps to address those issues prior to initiative launch.
- **STAFFING:** While telemedicine may create some kinds of operational efficiencies, it does not eliminate the need for support staff and may even require new or reconfigured roles. All four initiatives implemented new staff roles and/or adjusted existing roles to accommodate telemedicine.
- **COLLABORATING WITHIN AND ACROSS SETTINGS:** Initiatives that introduced telemedicine within existing clinical relationships or with known and trusted partners found data sharing and communication relatively straightforward. In contrast, initiatives that used telemedicine to introduce novel BH providers or stakeholders (e.g., a school) faced more challenges in communication and data sharing.

- **PATIENT AND PROVIDER EXPERIENCE:** Overall, all four initiatives reported positive patient experiences within the initiatives. Referring and telemedicine providers also reported favorably about their experiences with telemedicine and appreciated the augmentation of the care they could provide.
- **SUSTAINABILITY:** Most of the awardees were able to sustain their initiatives in whole or in part. Early consideration of sustainability and leadership buy-in helped initiatives sustain, while the reimbursement landscape for telemedicine and associated services often posed challenges.

In total, 786 patients participated in the Telemedicine Pilot Investment Program and over 1,600 telemedicine sessions were conducted between May 2017 and December 2018. Across different settings, all initiatives succeeded in expanding access to timely BH care for key target populations, ensuring that patients received needed services despite access challenges.

The Telemedicine Pilot Investment Program demonstrated that telemedicine is an effective modality for expanding access to high-quality behavioral health care across a variety of settings for populations with a high need for BH services. The initiatives provided insight into how different organizations can work together to implement telemedicine services and highlighted the operational considerations that organizations should address as they develop new workflows and policies. In recent months, the COVID-19 pandemic has prompted emergency orders and temporary policy changes around the use of telemedicine and huge increases in telehealth utilization, especially in behavioral health (see **Sidebar: The Impact of COVID-19**). Looking ahead, further changes in policy will be required to enable telemedicine programs to sustain and scale to meet the needs of patients in the Commonwealth. The HPC continues to support policies and programs designed to expand the scope and reach of telemedicine in the Commonwealth in order to improve patients' lives and care.

PART ONE:

BACKGROUND

ABOUT THE MASSACHUSETTS HEALTH POLICY COMMISSION

The Massachusetts Health Policy Commission (HPC), established in 2012, 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.

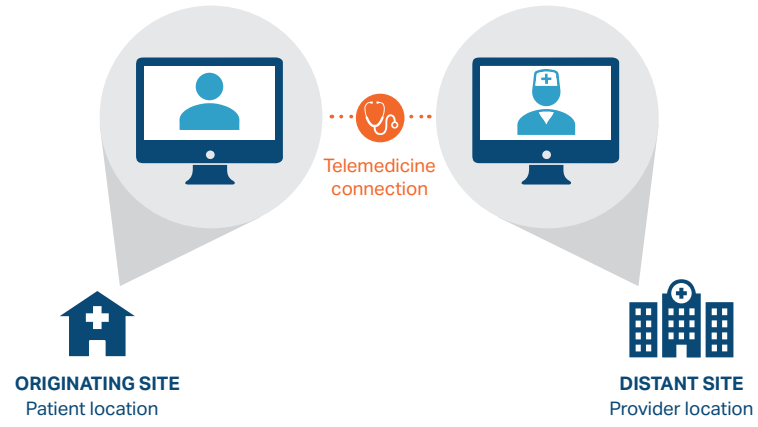
ESTABLISHMENT OF THE TELEMEDICINE PILOT INVESTMENT PROGRAM

Chapter 224, "An Act Improving the Quality of Health Care and Reducing Costs through Increased Transparency, Efficiency and Innovation," authorized the HPC to invest in new and promising care delivery and payment models through initiatives such as the Health Care Innovation Investment Program (HCII), a competitive investment program. Additionally, in 2015, the legislature directed the HPC to implement a pilot program to further the development and utilization of telemedicine in the Commonwealth.[ii] Accordingly, the HPC designed HCII to support health care transformation through investment awards in three pathways, one of which invested in telemedicine innovations that enhanced community-based access to behavioral health services for residents of Massachusetts with unmet behavioral health needs.[iii] Through a combination of funding sources, the HPC made $1.7 million available for the Telemedicine Pilot Investment Program.[iv]

DESIGNING THE TELEMEDICINE PILOT INVESTMENT PROGRAM

Telemedicine is a modality of care delivery that has demonstrated success in expanding access to care.[1-3] Telemedicine uses technology to connect patients to providers or providers to other providers when they are not in the same physical setting. A telemedicine interaction begins at an originating site, where the patient is located, and then connects to a distant site, where the treating provider is located (See **Exhibit 2**).[v] The enabling technology may include a live video connection (a synchronous connection), remote patient monitoring via data sent electronically in real time for review, or "store-and-forward" systems, which capture and batch relevant information for evaluation by the treating provider at a later time (an asynchronous connection).[4,5]

Exhibit 2: Telemedicine Encounter



ii See Section 161 of Chapter 46 of the Acts of 2015.

iii Each of the three HCII pathways was designed to address a key priority in health care system transformation. The first phase of the HCII Program included more than $11 million in investments to 20 competitively selected awardees spanning the Commonwealth. Awards range from $250,000 to $1,000,000 and were divided among three pathways: 1) Targeted Cost Challenge Investments, 2) Telemedicine Pilot Investment Program, and 3) Neonatal Abstinence Syndrome Investment Opportunity.

iv Funding for the Telemedicine Pilot Investment Program came from the Distressed Hospital Trust Fund (M.G.L. c. 29, § 2GGGG), the Payment Reform Trust Fund (M.G.L. c. 6D, § 7), and Section 161 of Chapter 46 of the Acts of 2015.

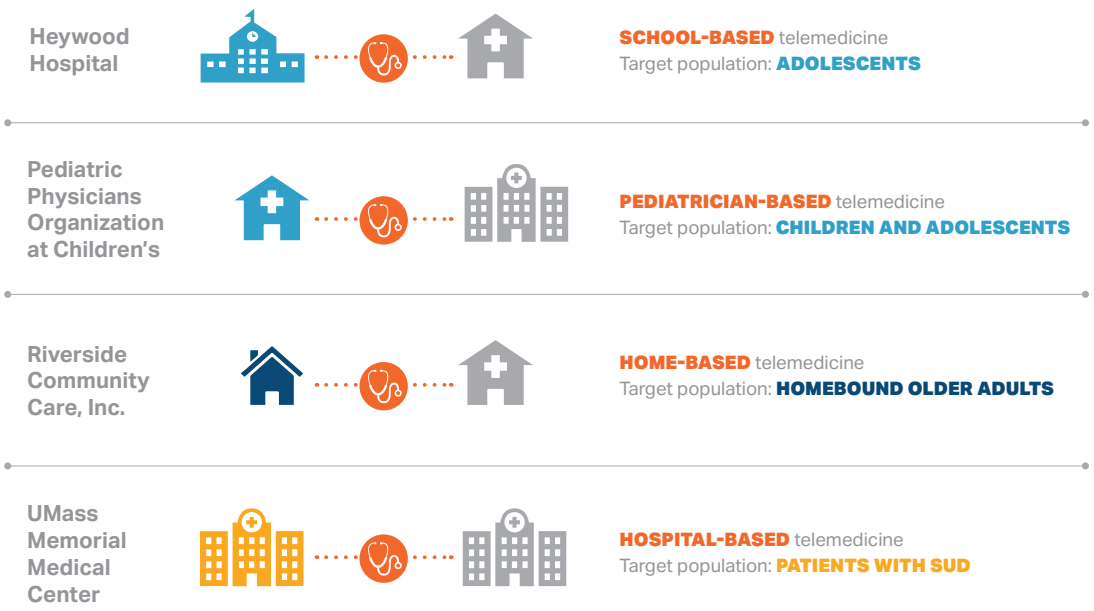
v Telemedicine is the practice of medicine using technology to deliver that care at a distance. Telehealth encompasses a broader range of remote health care services including non-clinical services.

For the Telemedicine Pilot Investment Program, the HPC chose to fund initiatives that utilized telemedicine for synchronous behavioral health (BH) treatment sessions. The HPC prioritized BH because it is a specialty that faces critical shortages in the Commonwealth, creating gaps in treatment and access to care.[6,7] These shortages are exacerbated by the geographic distribution of available BH providers, which does not match the distribution of patients – an issue which telemedicine is uniquely suited to mitigate. Furthermore, synchronous telemedicine has been shown to be an effective modality for behavioral health care.[8-10]

The HPC further identified three priority target populations: children and adolescents, older adults aging in place, and individuals with substance use disorder (SUD), all of whom experience acute challenges in access to BH services.[7,11-14] In addition, the HPC strongly encouraged partnerships between provider organizations and/or other organizations, including employers and human service organizations.[vi] By introducing telemedicine for BH, "teleBH", to these target populations, the HPC primarily aimed to demonstrate the potential of telemedicine to address behavioral health access challenges in high-need populations. The HPC also aimed to demonstrate the effectiveness of multi-stakeholder collaboration to serve high-need populations and inform care delivery and payment reform activities across the Commonwealth.

Following a competitive selection process, the HPC Board approved four awardees: Heywood Hospital, the Pediatric Physicians' Organization at Children's Hospital, Riverside Community Care, Inc., and UMass Memorial Medical Center. Between December 2016 and January 2017, the awardees began a 5-6 month period of preparation, followed by a 12-18 month implementation period.[vii] Information on each of the awardees and a brief description can be found in **Exhibit 4**. In total, the awardees used $1.6 million of HPC funding, with the majority of funds supporting staff salaries at awardee and partner institutions.

Exhibit 3: Telemedicine Pilot Investment Program Sites



vi The HPC required Teaching Hospital participation in Telemedicine Pilot Investment Program initiatives. The Teaching Hospital could be the applicant or deliver direct services as a Partner to another Provider or support the applicant in an advisory capacity.

vii The Telemedicine Pilot Investment Program was awarded as a 12-month investment program but two awardees extended their initiatives via a no-cost extension (NCE); the Pediatric Physicians' Organization at Children's Hospital for six months, and UMass Memorial Medical Center for three months.

Exhibit 4: Telemedicine Pilot Investment Program Awardee Initiative Overview

AWARDEE	TARGET POPULATION	IMPLEMENTATION PERIOD	AWARD AMOUNT	DESCRIPTION OF PROGRAM
Heywood Hospital	Children and Adolescents	June 2017 – May 2018	$425,570	School-based telemedicine for adolescents
Pediatric Physicians' Organization at Children's Hospital (PPOC)	Children and Adolescents	July 2017 – Dec 2018	$341,175	Pediatrician-based telemedicine for youth
Riverside Community Care, Inc. (Riverside)	Older Adults Aging in Place	May 2017 – April 2018	$499,860	Home-based telemedicine for homebound older adults
UMass Memorial Medical Center (UMass Memorial)	Individuals with Substance Use Disorders (SUDs)	July 2017 – Sept 2018	$496,184	Hospital-based telemedicine for patients with SUD

Each initiative submitted regular Program Updates and Key Performance Indicator (KPI) data to the HPC throughout their implementation period. HPC staff analyzed these deliverables and conducted interviews with key initiative staff. Part Two, **Initiative Case Studies**, discusses findings produced from the analysis of each initiative. Part Three, **Insights from the Pilot Program and Ongoing Considerations for Telehealth** discusses cross cutting themes and ongoing considerations including the impact of COVID-19 on telehealth policy (see **Sidebar: The Impact of COVID-19**). A full description of the evaluation methods can be found in **Appendix A**.

PART TWO:

INITIATIVE CASE STUDIES

INITIATIVE CASE STUDY: HEYWOOD HOSPITAL

SUMMARY OF INITIATIVE

TARGET POPULATION: Adolescents with unmet behavioral health needs

INTERVENTION: Between June 2017 and November 2018, Heywood Hospital implemented a school-based tele-behavioral health initiative in collaboration with local school systems to bridge gaps in care for adolescents with unmet behavioral health needs.

KEY TAKEAWAYS:

- Over 580 telemedicine sessions were offered to 46 students
- School-based care coordinators provided over 3,300 contacts with families
- Students and families reported high levels of satisfaction with the program
- Providing telemedicine sessions in school led to fewer missed days of school and work
- Aligning expectations between partnering schools and clinical providers is key to successful partnership

INTRODUCTION AND CARE MODEL OVERVIEW

INITIATIVE DESIGN AND RATIONALE

Heywood Hospital collaborated with two schools located in central Massachusetts, Narragansett Regional High School and Ralph C. Mahar Regional School, and a behavioral health partner, Clinical & Support Options (CSO), to implement school-based remote video counseling services for adolescent students with unmet behavioral health needs.[viii] The initiative was designed to respond to limited access to adolescent behavioral health care, long wait times for existing outpatient services, and transportation barriers in this rural area. Limited access has the potential to lead to undiagnosed and unmet behavioral health needs, which can impact student behavior, school attendance, and performance; even when community-based care is available, it can be challenging for families to make time during the work and school day to attend appointments. The telemedicine initiative built upon Heywood Hospital's previous work to expand access to behavioral health services in their community to students through the HPC's CHART Investment Program.

viii Clinical & Support Options is a nonprofit community behavioral and mental health agency providing therapy, counseling, and supports in Western MA.

CARE MODEL OVERVIEW

The initiative was staffed by two school-based care coordinators (SBCCs), a Licensed Mental Health Counselor (LMHC), and a Program Manager (see **Exhibit 5** for more details).[ix] The initiative offered two types of supports for students and families:

1. **Remote video counseling services:** Enrolled students received counseling services through remote video conferencing during weekly 45-minute sessions with an LMHC based in Western MA. Sessions took place during the school day and were scheduled to minimize disruption to academic classes. SBCCs were available before, during, and after counseling sessions to facilitate the use of technology and support students as they transition back to the school day following a session.
2. **Community Resources Support:** In addition, SBCCs built close and trusting relationships with students and families to better understand and support their needs holistically. SBCCs connected students and families with community resources including, but not limited to, housing, oil/heat, food support, and internship and job development.

Exhibit 5: Core Staff of Heywood Hospital's Initiative

SCHOOL-BASED CARE COORDINATORS (SBCC)	**Location: The two SBCCs were each assigned to a school participating in the initiative** **Key activities: Facilitated telemedicine sessions; Collaborated closely with school Guidance Departments and school liasons; Connected families with community resources**
LICENSED MENTAL HEALTH COUNSELOR (LMHC)	**Location: The LMHC was located in the CSO offices in Western Massachusetts** **Key activities: Conducted weekly 45-minute counseling sessions with students through remote video conferencing**
PROGRAM MANAGER	**Location: The Program Manager was located at Heywood Hospital and traveled between schools** **Key activities: Oversaw program staff and operations; Facilitated partnerships; Developed strategies for program sustainability**

KEY LESSONS FROM IMPLEMENTATION

REFERRAL AND ENROLLMENT

Students were referred to the initiative by school staff, such as teachers, coaches, and guidance counselors, who believed the student might benefit from counseling. Once students were identified, the SBCC reached out to parents or guardians to explain the initiative, complete intake paperwork, and connect them with the LMHC to discuss their child's treatment. The SBCC and LMHC then worked with school staff to schedule counseling sessions during classes that would be minimally disruptive to the students' academic progress. Key lessons included:

- **Building awareness and buy-in from school staff was important for generating referrals:** The team worked closely with school leadership, guidance counselors, and other school staff to promote the initiative and generate awareness and buy-in, which was important given the initiative's reliance on school staff for referrals.
- **Clearly communicated criteria for student referral were necessary to align expectations:** Initially, mismatched expectations about which students could receive and benefit from teleBH sessions were frustrating for both school staff and the LMHC. Over time, the team developed a better understanding of what needs were best suited for teleBH and communicated updated criteria to referring staff. Of note, the team determined that their initiative was not well suited or staffed to serve students in crisis or students with more serious mental health conditions; as needed, the team developed pathways to connect those students to outpatient services.

ix In addition to these core team members, a clinical supervisor from CSO and a school liaison supported the implementation of this initiative.

» **Flexible enrollment processes accommodated varying family needs:** When parents or guardians were unable to travel to the school to participate in an in-person intake process, the SBCCs developed creative solutions to connect with families, such as travelling to students' homes to get paperwork signed.

FACILITATING TELEMEDICINE IN A SCHOOL SETTING

The SBCC's office doubled as the site of the telemedicine sessions, and the room was equipped with a screen and necessary computer equipment for the telemedicine sessions. The SBCC would initiate the session with the LMHC and then leave the room for the duration of the session but remain close by in case of technical difficulties or student distress. Key lessons included:

» **Creative use of technology allowed students to participate in innovative ways:** The LMHC and students were able to use the telemedicine connection interactively by sharing videos of pop culture they enjoyed, showing their locations on the map, and allowing students to type into the chat feature of the software when they did not feel comfortable speaking. The room offered art supplies and a peaceful environment; many students engaged in art projects during their counseling sessions. In addition, the LMHC implemented a beginning-of-session feelings inventory worksheet for students to fill out to compensate for the fact that body language is harder to observe via a telemedicine connection.

» **Processing time after sessions eased students' transition back to classes:** In situations where a student had discussed particularly sensitive or emotional topics in-session, the team found that it was best to allow the student to remain either in the SBCC's office or the Guidance Office under the supervision of the SBCC to process and decompress for approximately 20 minutes before returning to class.

» **Selecting the right technology improved usability:** The initiative initially purchased large, 52-inch monitors to display the telemedicine sessions, which could be intimidating to students and created challenges with camera angles and eye contact. One school replaced the monitors with 24-inch monitors, which displayed the LMHC closer to life-size, and staff reported that the students were more comfortable with the smaller monitor. One school found it necessary to upgrade its broadband network bandwidth to accommodate telemedicine technology, and both schools switched to a less cumbersome and lower bandwidth telemedicine software platform.

» **Collaboration with school IT staff was essential for implementing new technology:** Despite some early challenges with equipment and technology selection, a good working relationship with school IT departments helped resolve the problems quickly.

STAFFING AND PARTNERSHIP

The Heywood Hospital initiative required integrating new roles and systems, which created both opportunities and challenges as the team encountered varying expectations, protocols, and communication practices. Key lessons included:

» **SBCCs were critical to the integration of the initiative into the school and community:** Having the SBCCs on-site to facilitate the organization and delivery of the telemedicine sessions was critical for smooth implementation in the school setting. The SBCCs became integrated into the school, coordinated care across stakeholders, and worked to address health-related social needs for students and families. SBCCs also spent time working with community groups who were addressing issues related to adolescent mental health in the local area.

» **Delays and challenges hiring clinical staff were barriers to initiative operations:** The initiative originally intended to hire a part-time psychiatrist for prescribing and assessments. However, due to staffing challenges, they were unable to do so, which changed the type of services offered and type of students that were appropriate for teleBH sessions. In addition, delays in finding and hiring the LMHC meant that she was not as involved with initiative design. Having only one LMHC who was comfortable with the telemedicine technology made it challenging to deal with clinician absences, limited the reach of the initiative, and highlighted a broader lack of clinicians who are comfortable using this modality.

» **Establishing information sharing boundaries between partners proved challenging:** Throughout the program, the Program Manager worked closely with school staff, SBCCs, and the LMHC to foster collaboration. However, due to mismatched expectations around information sharing and clinical approach, Narragansett discontinued its relationship with the LMHC approximately eight months into the initiative in February of 2018. Narragansett school

staff wanted more information than the clinician was comfortable sharing about confidential sessions with students. After ending its relationship with the LMHC, Narragansett retained the SBCC and she transitioned her time to focus solely on expanded connection to community resources. The students who had been seeing the LMHC at this school were referred to outpatient clinicians to continue their counseling, and the LMHC's time was fully allocated to Mahar.

IMPACT

Over the course of the initiative, the SBCCs and Program Manager collected information about initiative operations to better understand the initiative's impact, particularly around access to behavioral health care, and patient, family, and provider experience. Initially, the team also intended to collect data about the frequency of acute crisis interventions in the schools and behavioral health ED visits. However, due to data collection challenges and the shift in focus to students with less-acute behavioral health needs, the team concluded that crisis interventions and behavioral health ED visits were no longer meaningful metrics.

- **The Heywood Hospital initiative expanded access to behavioral health care for children and adolescents:** Over the course of the initiative, the team administered 584 telemedicine sessions to 46 students in a school-based setting. Staff reported that a significant portion of the students would not have received behavioral health care in the absence of the initiative, mostly due to transportation and time barriers for their parents/guardians. Given the need for parents to leave work, transport the child to the appointment, wait for the duration of the appointment, and then transport the child back to school or home, it is estimated that the initiative saved many hours for students and families. Estimating approximately three hours per appointment (including travel and session time), the initiative avoided approximately 6 missed school days per enrolled student.
- **SBCC coordination services helped build a bridge between the school and community:** The SBCCs served both students receiving telemedicine sessions and others referred for support by school staff. In total, SBCCs served 82 students and had over 3,300 contacts with families. SBCCs reported that through their resource connection and support, families felt more connected to the school and community. The Program Manager noted that, "clinical sessions are critical to students' behavioral health, but creating a safety net through care coordination and the development of a family care plan is key to bringing this innovation grant full circle."
- **Students and families reported high levels of satisfaction with the initiative:** In surveys administered to students and families by initiative staff, the majority reported high levels of satisfaction with the initiative (student surveys: n=23; family surveys: n=16). Staff also reported positive changes in students who attended sessions and observed that students responded well to the telemedicine modality. As one staff member remarked, "we started actually tracking our students and [for] a lot of them, their grades have gone up considerably. They're in school more; attendance is better. And we actually have a lot of students that come in for their counseling [whereas before we] would have [had] a hard time even getting them into school." One challenge with the time-limited nature of the initiative was that it could be difficult for students when the school-based services ended (students who were enrolled when the initiative ended were connected to outpatient services).
- **Initiative and school staff recognized the value of this service for students:** Overall, school staff appreciated the presence of this resource for their students. Both school and initiative staff found the program rewarding, especially when they could observe positive changes in students who attended sessions. One staff member commented, "I think staff [can get] burnt out or they label a student a certain way [...] When they see a student who is actually going to therapy and getting the help [...] that's a learning, something new for the staff to learn that you don't give up; that there's different options out there and this being a new kind of thing and a new option, that you never know when a student might find the right treatment for them." Still, initiative and school staff noted opportunities for operational improvements. A common suggestion was adding additional clinicians to the initiative, ideally having one for each school, so they could cover for each other in the event of absences and so that students could work with the provider who was the best "fit".

SUSTAINABILITY

The Program Manager was highly focused on sustainability at both the policy and initiative level. Recognizing the need to train providers who are comfortable in this modality, she made presentations to colleges and universities with social work programs in the hopes of encouraging future behavioral health clinicians to consider practicing via telemedicine and to encourage schools

to include telemedicine as part of their clinical care curriculums. She also spoke on behalf of advancing telehealth parity laws in the Commonwealth, as the inability to bill for these services was a significant barrier to the sustainability of the initiative.

While the initiative was not able to run continuously after the end of the HPC grant funding, there was strong support from program and partner staff to find a way to keep the services going. Ultimately, the Program Manager secured a grant from the Health Resources and Services Administration (HRSA) to continue the initiative. In this new iteration, the initiative was expanded to more schools, collecting additional data to build the evidence base for the model. As of spring 2020, together the HPC and HRSA-funded programs had provided over 3,000 teleBH sessions to students.

INITIATIVE CASE STUDY: PEDIATRIC PHYSICIANS' ORGANIZATION AT CHILDREN'S HOSPITAL

SUMMARY OF INITIATIVE

TARGET POPULATION: Children and adolescents with complex psychiatric presentations, such as anxiety, depression, ADHD, and oppositional disorders

INTERVENTION: Between July 2017 and December 2018, the Pediatric Physicians' Organization at Children's Hospital (PPOC) implemented a telemedicine initiative to provide critical psychiatric care to pediatric patients with otherwise limited access to behavioral health services.

KEY TAKEAWAYS:

- 176 children or adolescents received psychiatric care in over 300 telemedicine sessions across five pediatric primary care offices
- After introducing the telemedicine initiative, the average wait time for a behavioral health consultation decreased by 47%
- Children and adolescents who utilized the telemedicine services showed improvements across a number of clinical scales
- Both Primary Care Providers (PCPs) and patients reported high satisfaction and noted benefits from having a readily accessible behavioral health resource
- PPOC planned to continue services after the pilot period

INTRODUCTION AND CARE MODEL OVERVIEW

INITIATIVE DESIGN AND RATIONALE

The Pediatric Physicians' Organization at Children's Hospital (PPOC), a network of pediatric primary care physicians (PCPs) and physician specialists across Massachusetts, built on their relationship with Boston Children's Hospital (BCH) to implement a telemedicine initiative to provide critical psychiatric care to pediatric patients. In this hub-and-spoke model, local pediatricians' offices offered remote video consultations with a child and adolescent psychiatrist located at BCH, enabling children and adolescents to receive both diagnostic and follow-up behavioral health care at their local pediatrician's office.

Many of the pediatric practices selected to participate in this initiative were located in regions of the state with a shortage of child and adolescent psychiatrists.[14] Limited availability of local, age-appropriate behavioral health care can require families to travel far distances and/or wait for extended periods before their child's behavioral health condition is diagnosed and treated, if at all. By providing timely, local behavioral health care, the initiative was designed to decrease access barriers for families and to provide local PCP offices with the resources needed to manage the complex behavioral health needs of their patients.

CARE MODEL OVERVIEW

PPOC piloted their telemedicine initiative at five of their primary care sites: Briarpatch Pediatrics, Greater Lowell Pediatrics, Northampton Area Pediatrics, Bridgewater Pediatrics, and Holyoke Pediatric Associates. The core staff included a Program Manager, a Telehealth Coordinator, a child and adolescent psychiatrist, and the referring physicians (see **Exhibit 6**), as well as administrative support from both the local PCP offices and the Department of Psychiatry (DoP) at BCH. Upon identifying a patient in need of behavioral health services, the PCP submitted a referral to the DoP. Once the session had been scheduled, the family returned to their PCP's office and connected with the psychiatrist via remote video sessions to receive an initial telemedicine consultation and/or ongoing co-management of PPOC pediatric patients.

Exhibit 6: Core Staff of Pediatric Physicians' Organization of Children's Hospital's Initiative

PROGRAM MANAGER	**Location: PPOC Office** **Key Activities: Oversaw initiative implementation; Coordinated between PPOC sites and DoP; Compiled and communicated progress updates**
TELEHEALTH COORDINATOR	**Location: Department of Psychiatry, Boston Children's Hospital** **Key Activities: Conducted outreach; Managed communication and scheduling between practices and families**
CHILD AND ADOLESCENT PSYCHIATRIST	**Location: Department of Psychiatry, Boston Children's Hospital** **Key Activities: Provided consultations and/or co-management for pediatric patients presenting with complex BH needs**
REFERRING PHYSICIANS	**Location: Briarpatch Pediatrics, Greater Lowell Pediatrics, Northampton Area Pediatrics, Bridgewater Pediatrics, and Holyoke Pediatric Associates** **Key Activities: Identified pediatric patients in need of telemedicine/telepsych services**

KEY LESSONS FROM IMPLEMENTATION

REFERRAL AND ENROLLMENT

Upon identifying a patient in need of BH services, the referring PCP submitted a referral form with the patient's relevant clinical information to the DoP. The Telehealth Coordinator and administrative staff at the DoP would then enroll the patient and coordinate schedules among families, PCP offices, and the psychiatrist. Key lessons included:

- **Streamlined referral processes simplified enrollment:** When the initiative first launched, the referring PCP was required to consult with the psychiatrist before providing a referral for telepsychiatry services. However, this process could be cumbersome and the additional back-and-forth could cause delays in scheduling a visit with the psychiatrist. The initiative quickly adapted to allow the PCP to determine if a patient should be referred to the psychiatrist. The PCP could then offer the telepsychiatry service directly to the family, get a signed consent from the parent/guardian, and submit the referral all as part of the primary care appointment.
- **Direct referrals from PCPs were generally appropriate for psychiatry services:** Despite shifting to the streamlined referral process, the psychiatrist felt that the majority of referred patients needed a specialist's attention. The psychiatrist reflected, "Boy, they need my consultation, they need me to look at this kid. [...] I don't get to select these people who are referred to me but you know, [the PCPs are] really spot-on that these people need to be seen." In instances in which the PCP and the psychiatrist did not agree on the BH diagnosis or the need for psychiatry services, the psychiatrist would contact the referring PCP directly to discuss further.
- **Outreach to PCP offices raised awareness about the telemedicine resource:** Before launching, PPOC conducted a survey with its members to gauge their interest in telehealth; 91% of providers indicated that they would be "likely" or "very likely" interested in using telehealth based services. However, initially some practices weren't generating as many referrals as expected. To encourage more referrals, the Program Manager educated providers on what the initiative offered and reminded them that they could refer patients at any time. The team quickly met the enrollment targets.

FACILITATING TELEMEDICINE IN A PRIMARY CARE SETTING

Once enrolled in the initiative, families returned to their local PCP office to participate in a remote video consultation with the psychiatrist. The PCP office staff set up the technology and helped connect the patient with the psychiatrist. Following the session, the psychiatrist would communicate his findings and recommendations to the family and referring PCP. If the patient

required a prescription, depending on the type of medication, the psychiatrist could write the prescription or rely on the PCP to prescribe.[15, x] In some cases, patients only required a single consultation visit; in other cases, the patient's behavioral health condition was co-managed by both the psychiatrist and their PCP on an ongoing basis. Key lessons included:

» **Offering telepsychiatry services in the primary care setting facilitated care coordination:** By providing different levels of care in one location, the teams were better able to coordinate care for patients. As the Program Manager noted, "There's a real continuity now because we do have this closed loop between the primary care provider, the patient, and the psychiatrist. So there's a much better chance of coordinating care than if this was done other ways." In addition to connecting patients to the psychiatrist, PCPs could tap into existing resources such as PPOC's Behavioral Health Integrated Program and/or the office-based Medical Home Care Coordinator to support care coordination and address health-related social needs.

» **Clarifying next steps was an important aspect of provider-to-provider and provider-to-patient communication:** At the end of each telemedicine session, the psychiatrist reviewed his findings and recommended next steps with the patients and their caregivers and explained that these findings would be shared with the referring provider. Clear communication about next steps with the referring provider was critical for smooth transition of care and/or co-management. Transparent communication with families allowed the psychiatrist to build trust with the patients and help them navigate a new modality of care.

» **Existing vendor relationships facilitated smooth implementation of telemedicine technology:** PPOC leveraged the existing vendor relationship with BCH's telemedicine platform, Vidyo, to ensure an easy and successful implementation of telemedicine technology. The teams constantly monitored the performance of the Vidyo technology and collected feedback to identify areas for improvement.

STAFFING AND PARTNERSHIP

The PPOC primary care sites and the DoP at BCH built off of an existing partnership; however, implementing this new service required team members at both sites to adapt work flows. Key lessons included:

» **The psychiatrist and PCPs worked collaboratively to align information sharing expectations:** As the initiative unfolded, the psychiatrist and PCPs developed practices to communicate about their patients' needs. For example, the PCPs began to share a "face sheet" with the psychiatrist that described the reason for the referral, relevant history, and the PCP's concerns. The psychiatrist worked to provide timely (24-48 hour) write ups to the PCP following the telemedicine visit with the patient. In some cases, the PCP and psychiatrist scheduled additional time to discuss challenging cases. For example, if the referring PCP had questions or concerns about a new prescription or had a different perception about the behavioral health problem/condition, the psychiatrist and PCP would set up time to coordinate via phone or email.

» **Coordinating and scheduling across multiple stakeholders required more administrative support than initially anticipated:** The telemedicine program relied on high levels of administrative support from DoP to aid with the intake process, scheduling, and other tasks for implementation. Although the initiative was available to patients regardless of their insurance type, the program also tracked whether a patient's insurance company covered the telemedicine visit, which required additional administrative time. For the duration of the program, the teams met regularly to streamline workflows, and PPOC reassigned administrative staff to support program operations.

IMPACT

Throughout implementation, staff at PPOC and the DoP worked together to collect and review relevant data on timely access to an appointment with the psychiatrist, change in BH symptoms, and provider and patient satisfaction. Initially, the team also intended to collect data on total medical expenses, but they were unable to report this data due to their inability to retrieve payer data.

» **Offering PCP office based telepsychiatry services reduced wait time for psychiatric assessments, connecting patients with needed care earlier:** For the 176 patients who enrolled in the initiative, the average wait

x The Ryan Haight law prohibits psychiatrists from writing prescriptions for controlled substances to patients through telepsychiatry. See Reference 15.

time between identification of need and psychiatric assessment decreased by 47%, from 37 days to 19.7 days.[xi, xii] In the course of the initiative, over 300 sessions were delivered, the majority of which were telepsychiatry sessions, followed by psychopharmacology telepsychiatry.[xiii] For those patients that had return visits, the return visits were often medication related.

- **Children and adolescents who participated in the initiative showed improved symptoms:** Among patients with more than one visit, clinical outcomes improved over time as measured by the Clinical Global Impressions (CGI) and the Children's Global Assessment Scale (CGAS).[16, 17, xiv]
  - CGI–Global Improvement scores indicate that over 80% of patients showed improvement with more than half showing "much improved" or "very much improved."[xv]
  - The average CGI–Severity of Illness score decreased from 4.4 to 3.7, a 16% reduction in the severity of illness between the initial visit and the most recent visit.[xvi]
  - CGAS scores indicated that the majority of patients had a positive change in their functionality as it pertains to their mental health.[xvii] Average scores increased approximately 10% between the initial and most recent CGAS scores.
- **Patients and families reported high levels of satisfaction with the initiative:** Staff administered surveys to patients and/or family members following their initial intake visit. The majority of those surveyed (n=97) reported having a "high" or "very high" level of satisfaction. A team member reported, "Parents like it because the access is a lot better than they expected and lost work and travel time is reduced, and patients feel less stigmatized because it is just like any other visit to their PCP." That said, the initiative team noted one instance when a parent wanted an opportunity to speak with the psychiatrist one-on-one, which was not offered during the initiative.
- **Offering telemedicine provided a new resource for PCPs:** The majority of referring providers surveyed (n=29) reported that they would recommend telepsychiatry consultation. The initiative provided a new resource for PCPs to manage their patients with BH conditions that require specialty care, which helped PCPs build relationships with their patients. One staff member noted that, "I think it helps them with those patients who are struggling and it helps their relationships with the families." For example, the Program Manager recalled an instance when a PCP initially felt uncertain about prescribing medications for a six-year-old child with behavioral health needs. Following the consultation with the psychiatrist, the PCP was able to prescribe the medication and the patient's guardian later noted that "the child was doing so much better and that she was going to have a good school year." While feedback from referring providers was largely positive, some providers still noted discomfort when the psychiatrist recommended prescribing a medication that the PCP was not used to prescribing themselves. PCPs also noted areas for continued improvement regarding communication about which patients were appropriate for this intervention.
- **Using telemedicine offered many of the benefits of in-person visits with added convenience:** The psychiatrist indicated that he was able to administer the same level of care as an in-person visit without some of the logistics required to set up an in-person visit. He noted, "I can see what they're like, I can see behaviors, tics, you know, and anything I need. I haven't felt like the telemedicine part has inhibited doing a quality evaluation in any way." The psychiatrist not only felt that he was seeing patients that would truly benefit from the specialized care, he also felt proud about being able to help them through this new modality.

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xi Compared to baseline wait time for in-person visits during 2015 and 2016 (n=55).

xii The initiative initially targeted connecting patients within 15 days, but families' availability sometimes posed a barrier to scheduling within the 15 day window.

xiii Psychopharmacology is the study of the use of medications in treating mental disorders.

xiv Data on the Clinical Global Impressions and the Children's Global Assessment Scale was reported for patients receiving telemedicine services between July 2017 through April 2019.

xv Clinical Global Impressions – Improvement Scale (CGI-I): is a 7 point scale that requires the clinician to assess how much the patient's illness has improved or worsened relative to a baseline state at the beginning of the intervention. See Reference 16.

xvi Clinical Global Impressions–Severity Scale (CGI-S): is a 7-point scale that requires the clinician to rate the severity of the patient's illness at the time of assessment, relative to the clinician's past experience with patients who have the same diagnosis. See Reference 16.

xvii The Children's Global Assessment Scale (CGAS): is a tool used to assess the global level of functioning and severity of mental illness in children and adolescents. The CGAS uses various scales that assess a child's psychological, social, and occupational functioning. See Reference 17.

SUSTAINABILITY

From the beginning, the initiative team and senior leadership at PPOC were invested in sustaining and expanding the telepsychiatry consults after HPC funding ended. The teams worked to keep senior leadership involved throughout implementation of the initiative by sharing a monthly dashboard with key indicators of program progress, which allowed senior leadership to participate in discussions surrounding efficiency and infrastructure for expansion. The team recognized early on that figuring out financial sustainability would be critical to maintaining ongoing initiative operations. While the pilot treated patients regardless of payer, the Program Manager worked to develop a billing infrastructure and determine what codes (if any) could be used to bill for telemedicine; throughout the initiative, the teams tracked whether a patient's insurance company would cover the charges for telemedicine and monitored inconsistencies in coverage. By the end of the fourth quarter of the initiative, PPOC determined that about 80% of claims were paid, which made a strong case for the sustainability of this initiative. As the Program Manager put it, "We proved the case that this level of care could be provided via telehealth more quickly than what could be provided locally and with a high level of patient satisfaction. We also have shown that psychiatric care for children and adolescents can be delivered via telehealth in a manner that is financially sustainable even in today's uncertain [Massachusetts] market." At the close of the implementation period, PPOC planned to expand the program to additional sites. In anticipation, PPOC worked to build infrastructure and capacity, but finding enough resources, particularly child and adolescent psychiatrists who are comfortable working via telemedicine, remained a barrier. As of spring 2020, the Boston Children's Hospital Department of Psychiatry continued to offer telemedicine sessions to PPOC patients.

INITIATIVE CASE STUDY: RIVERSIDE COMMUNITY CARE, INC.

SUMMARY OF INITIATIVE

TARGET POPULATION: Homebound older adults with unmet behavioral health needs

INTERVENTION: Between May 2017 and April 2018, Riverside Community Care, Inc. implemented a telemedicine initiative to increase access to behavioral health care through home-based video consultations for homebound older adults with unmet behavioral health needs.

KEY TAKEAWAYS:

- 84 homebound adults received 632 behavioral health counseling sessions via telemedicine from Riverside Community Care, Inc. clinicians
- Participants expressed high satisfaction with the initiative and grew more comfortable with technology over time
- Extended travel time between participants' homes limited the number of sessions that could be offered per day
- The team recognized opportunities to streamline staffing models to better match service offerings with participants' level of need

INTRODUCTION AND CARE MODEL OVERVIEW

INITIATIVE DESIGN AND RATIONALE

Riverside Community Care, Inc. (Riverside) is a community-based behavioral healthcare and human services organization. In partnership with three Aging Service Access Points (ASAPs), Riverside implemented a telemedicine initiative to serve homebound older adults with unmet behavioral health needs. As individuals age, many become more isolated and less independent and may experience feelings of hopelessness and despair. ASAP data indicate that between 7-10% of the population over age 60 in their coverage areas typically seek behavioral health treatment.[xviii] However, attending in-person counseling sessions is not possible for elders who are homebound, have limited mobility, and/or lack transportation. To bring care to this population, Riverside designed a model in which ASAP case managers traveled to participants' homes to set up telemedicine counseling sessions with Riverside clinicians.

CARE MODEL OVERVIEW

Riverside piloted the telemedicine initiative with three ASAP organizations, Springwell, Health and Social Services Consortium (HESSCO) Elder Services, and Mystic Valley Elder Services (MVES), which together serve elders in 40 communities across three geographic areas of Massachusetts. The core staff included two Licensed Independent Clinical Social Worker (LICSW) clinicians (one of whom was the Clinical Director) and six case managers (two from each ASAP). To identify participants, Riverside relied on client lists from the ASAPs to find eligible elders to recruit into the initiative. ASAP case managers then contacted those individuals to set up a time to visit their homes to demonstrate the technology, and if they were interested in enrolling, complete intake surveys. During the telemedicine counseling sessions, the case manager set up the technology and either exited the room until the session was over or stayed nearby to provide technical support (< 5% of sessions) depending on participant preference. Typically, sessions were offered to participants over a 12-week period.

xviii This data was provided as part of the Riverside Request For Proposal response.

Exhibit 7: Core Staff of Riverside Community Care, Inc.'s Initiative

CASE MANAGERS	**Locations: Springwell, MVES, HESSCO geographical regions (2 case managers from each)** **Key Activities: Performed outreach; Completed participant intake; Set up teleconferencing equipment; Assisted with technical problems; Scheduled visits**
CLINICIANS	**Location: Riverside** **Key Activities: Conducted telemedicine counseling sessions (from their home or private office) with program participants; Connected participants to external resources**

KEY LESSONS FROM IMPLEMENTATION

REFERRAL AND ENROLLMENT

Riverside's original initiative design was based on three key assumptions: (1) that they could identify a niche group of participants whom they believed would benefit most from a behavioral health telemedicine intervention; (2) that those participants would be willing and able to participate in their initiative; and (3) that telemedicine would be appropriate to meet their behavioral health needs. Fairly quickly, they discovered significant challenges to those assumptions that caused them to modify their approach. Key lessons included:

- **Lack of reliable data limited ability to identify high-need subgroups as planned:** At the launch of the initiative, Riverside planned to prioritize enrolling groups with special characteristics, specifically individuals who: 1) had falls as a result of substance use, 2) wanted assistance with substance use, and/or 3) had not seen a PCP in the last year. Early in the enrollment process, they found that limitations in available data meant that the team could not identify participants to enroll into those categories.
- **Riverside adjusted the focus of the initiative as they learned more about participant needs and expectations:** Given the challenges with the initial enrollment strategy, the team redefined the focus of their initiative. ASAP supervisors, who originally did not have a major role in enrollment, worked together with case managers to prioritize enrolling elders who felt isolated, were known to be anxious and/or had expressed suicidal ideation (with no specific plan), and/or had recent loss or health issues while appearing to be depressed and/or grieving. Importantly, the initiative did not enroll elders who were in crisis and needed a higher level of care over a longer time period.[xix] Later, Riverside also made changes to the inclusion criteria to require an existing Wi-Fi connection in the home sufficient to support the telemedicine visit.
- **Relationship building played a key role in driving enrollment:** The team anticipated that participants may have concerns about using new technologies and/or feel stigma about accessing behavioral health counseling. To ease the concerns of the eligible elders, case managers showed them the video set up and explained how the technology worked. The team observed that while some participants were less familiar or comfortable with counseling, others had prior experience and were "pro-mental health, it's just they couldn't [physically] get there." On average, it took approximately three visits to enroll an elder into the initiative. Ultimately 76% of eligible elders that were invited to enroll participated in the initiative.

FACILITATING TELEMEDICINE IN A HOME SETTING

Unlike clinic or hospital-based programs or traditional home nursing visits, the Riverside initiative depended on both reliable home-based technology and a participant population that was willing and able to use that technology. As the initiative rolled out, Riverside learned several important lessons:

- **It is important to establish minimum technical requirements before launch:** At the start of the initiative, the case managers experienced technical difficulties with Wi-Fi/internet connections at the participants' homes that often

xix The initiative initially anticipated that some participants would want to connect with a psychiatrist; however, the majority of participants declined visits with the psychiatrist and preferred to work with the LICSW clinician. Staff reported that the majority of participants sought help to address lower acuity behavioral health needs.

required them to use alternative methods to continue sessions (e.g., continuing via phone, alternative teleconferencing technology). To circumvent the broader issue of unreliable internet connectivity, the teams tried using internet hot spots with limited success. Ultimately, they opted to change the enrollment criteria to ensure that any participant had the base level of technological infrastructure necessary to participate in the initiative.

» **Participants' technological support needs varied based on their clinical conditions and comfort with the technology:** Riverside assumed that most participants would need support from case managers to set up technology and facilitate the telemedicine session. As such, they deployed case managers to remain on-hand throughout every session. However, as the staff became more familiar with participants' needs, they recognized that not all participants required as much hands-on technological support and noted that some participants would have been able to carry out sessions independently. The Investment Director observed that many participants, "Skype[d] with family members. So, there was actually a higher level of familiarity with technology already and comfort."

» **Inefficiencies in scheduling and travel logistics limited the number of possible sessions:** Sessions were scheduled based on participant and provider availability, rather than optimizing for efficient use of case manager time. This meant that the case managers spent significant amounts of time driving between appointments. In addition, participants' preferences for meeting with a specific clinician could lead to scheduling challenges. The initiative was limited to two clinicians – one male and one female – and some participants expressed a preference based on gender. These scheduling challenges limited the number of sessions that could be offered in a day, which, in addition to elders not wanting to participate in a short-term therapy program, contributed to lower enrollment than expected.

STAFFING AND PARTNERSHIP

Riverside partnered with three ASAPs (Springwell, MVES, and HESSCO). Covering such a wide geographic area required adaptable, ongoing communication methods and a closer look at staffing. Key lessons:

» **Real-time communication and adaptability are required for field-based operations:** This initiative was maintained almost entirely outside of a clinical space, which made the reliance on communication even more crucial to success. To make sure that the sessions could be carried out effectively, the teams coordinated with each other in the event of unanticipated schedule changes or problems with technology in real-time and were flexible with their approach for carrying out a session. The teams often used the videoconferencing platform to exchange relevant clinical information and communicated regularly about initiative logistics or technological needs. The teamwork and flexibility of staff played a key role in carrying out this initiative to completion.

» **Staff identified opportunities to streamline staffing models to better match service offerings with participants' level of need:** Using ASAP case managers for this initiative was appealing as they could provide care (if necessary) and support to a fragile population. While some participants required a higher level of technological and/or emotional support, in most cases the case manager's only role was setting up equipment which didn't fully utilize their skillset. The team recognized opportunities for future programs to reconfigure staffing so that case managers are not required for every participant or session as a way to optimize resource allocation, increase capacity, and reduce costs.

IMPACT

Throughout the initiative, Riverside collected data on the number of completed sessions, survey data (i.e., PHQ-9, patient satisfaction, and provider satisfaction), enrollment, and demographic data. While the team intended to collect hospital utilization data, the large number of hospitals that participants could access made it impractical to set up data sharing agreements across multiple systems. Key findings are as follows:

» **The telemedicine initiative reduced barriers to accessing behavioral health care for homebound elders:** The participants served by this initiative faced significant barriers accessing behavioral health care, including mobility limitations (66%), difficulty arranging transportation (49%), and a fear of falling/frailty concerns (32%). For the duration of this initiative, there were a total of 632 telemedicine sessions across the 84 participants. With Riverside offering to bring the teleconferencing equipment to them, the participants were able to receive care despite facing these challenges. Enrollment was lower than anticipated partially due to challenges with defining eligibility and capacity limits given the long distances/time for case managers to travel.

- **Participants expressed satisfaction with the initiative and grew more comfortable with technology over time:** Among participants that completed intake and exit surveys (n=60), the majority of surveyed participants indicated that they were satisfied with the telemedicine initiative. To many participants, the biggest disappointment was that the initiative was too short and they did not want the initiative to end. A small number of participants expressed discomfort with technology at the beginning of the initiative (n=16), and the majority reported that they felt more comfortable using the teleconferencing technology by initiative close. One clinician noted, "I was really pleasantly surprised that even people who hadn't once in their lives used video conferencing technology, how comfortable they got with it."
- **Participants reported that their depression decreased by the end of their participation:** Among participants who screened positive for depression upon intake, 33 out of 37 (89%) participants reported feeling less depressed at the conclusion of the initiative.[xx] When asked about how they felt about the initiative participants stated that it, "gave me hope and strength through difficult times," and "helped [me] to deal with health issues." Many of the participants' favorite part of the initiative was getting to know the clinicians that were providing them care and having someone to talk to.
- **The Clinical Director noted that telemedicine was convenient and efficient:** The Clinical Director reported that being able to work from home was a positive experience and that, "seeing the benefits gained by so many clients was a highly rewarding professional experience." He estimated that he was able to handle a similar caseload as he would have in an office-setting. Another benefit of using telemedicine is that he could carry out sessions that may have otherwise been cancelled due to unforeseen circumstance. For example, in one instance, he "came down [with] a pretty bad respiratory thing but I was able to keep working because I wouldn't infect anybody."

SUSTAINABILITY

Riverside's goal for this one-year initiative was to learn about the feasibility of this model, gauge the demand for teleBH services among homebound elders, and determine the caseload capacity of the clinicians and case managers. While the team learned many valuable lessons about how to deliver teleBH to this population, Riverside chose not to continue this initiative at the end of HPC funding. At the time of this initiative, Medicare and Medicaid did not provide reimbursement for the telemedicine services offered in Riverside's care model, and only a limited number of private payers covered those telemedicine services. Beginning in January 2019, MassHealth began offering reimbursement for outpatient behavioral health services delivered via telehealth from certain qualified outpatient centers. In spring 2020, Riverside reported that they began offering other behavioral health services via telemedicine as early as October 2019. Although they did not recreate the care model used in the Pilot Program, Riverside noted that their teleBH initiative was a helpful learning experience and was valuable as they transitioned to offering teleBH in their outpatient and other services.

xx Depression symptom screening was conducted using the PHQ-9 survey tool.

INITIATIVE CASE STUDY: UMASS MEMORIAL MEDICAL CENTER

SUMMARY OF INITIATIVE:

TARGET POPULATION: Adult patients with a substance use disorder (SUD) diagnosis, high clinical risk, and high utilization of acute care services admitted to the general hospital medical and surgical services.

INTERVENTION: Between July 2017 and September 2018, UMass Memorial Medical Center implemented an intervention to provide "bed-side" telemedicine addiction consults with an addiction psychiatrist as part of a suite of SUD treatment services at its second campus.

KEY TAKEAWAYS:

- During the course of the initiative, 444 patients received SUD treatment services during their hospital stay; 155 telemedicine sessions were conducted with an addiction psychiatrist
- The program initiated or managed patients on medication for addiction treatment (MAT) during 188 hospitalizations
- A multidisciplinary team approach offered patients multiple ways to engage in the initiative
- Initiative staff reported that the initiative improved patient care and positively influenced hospital staff's attitudes about addiction

INTRODUCTION AND CARE MODEL OVERVIEW

INITIATIVE DESIGN AND RATIONALE

UMass Memorial Medical Center (UMass Memorial) implemented a telemedicine initiative to increase patient access to and engagement in evidence-based treatment for substance use disorders (SUD) while in the hospital. Prior to implementing the initiative, the UMass Memorial campus lacked comprehensive services to engage patients in SUD treatment during their inpatient stay. Staff could provide patients with SUD with a list of outpatient treatment facilities, but had limited recourse during the hospitalization and no way of knowing if patients engaged with treatment post-discharge. To address this gap, this initiative used telemedicine to bring the Addiction Psychiatry Consultation Services at the UMass University campus to the UMass Memorial campus, while employing on-site peer recovery coaches and social workers to engage patients in SUD treatment during their hospital stays.[xxi]

CARE MODEL OVERVIEW

The initiative was staffed by an addiction psychiatrist, two peer recovery coaches, and one addiction social worker (see **Exhibit 8** for more details).[xxii] The addiction psychiatrist had prior experience with telemedicine and was familiar with the format. The peer recovery coaches brought lived-experience of SUD treatment and recovery to their work, adding empathy and practical knowledge to their interactions with patients.

The intervention offered three tiers of care for patients according to their care needs. In a typical pathway:

1. Peer recovery coaches approached patients admitted to the hospital with a diagnosis of SUD and explained the initiative, enrolled interested patients, and discussed their treatment options.
2. Social workers met with patients as needed to discuss treatment options, provide short therapeutic consults, and conduct motivational interviewing sessions for patients who were unsure about their choice to engage in treatment.

xxi UMass Memorial and UMass University are two campuses of the larger UMass Medical Center. UMass University had an on-site addiction psychiatrist and SUD treatment services, including recovery coaches and social workers, in place prior to the Pilot Program.

xxii In addition to these core team members, initiative staff included a part time Investment Director who oversaw the initiative, as well as support for data collection and analysis from the UMass Medical School. The Investment Director and the addiction psychiatrist supported the Addiction Psychiatry Consultation Services at both the University and Memorial campuses. The University campus' services were in place prior to the HPC's investment program and staff at the University campus were not supported by the HPC.

3. The psychiatrist, located at the UMass University campus, conducted remote consults with patients requiring higher-level care. This included patients who wanted to initiate or maintain the use of medication for addiction treatment (MAT) and patients with co-morbid behavioral health conditions.

After meeting with the patient, the SUD treatment team developed a treatment plan and shared it with the patient's inpatient clinical team. As appropriate, patients received MAT during their hospital stay. As patients approached discharge, social workers and recovery coaches helped connect and enroll patients in outpatient treatment resources. After discharge, recovery coaches followed up with patients to provide ongoing support in their recoveries and encourage patients to remain engaged in treatment.

Exhibit 8: Core Staff of UMass Memorial Medical Center's Initiative

ADDICTION PSYCHIATRIST	**Location: UMass University Medical Center campus** **Key activities: Conducted patient assesment, consultation, initiation and maintenance of MAT**
PEER RECOVERY COACH	**Location: UMass Memorial Medical Center campus** **Key activities: Engaged patients in the program; Facilitated telemedicine sessions; Followed up with patients post-discharge**
ADDICTION SOCIAL WORKER	**Location: UMass Memorial Medical Center campus** **Key activities: Engaged patients in treatment; Conducted brief counseling interventions; Coordinated post-discharge care**

KEY LESSONS FROM IMPLEMENTATION

REFERRAL AND ENROLLMENT

The initiative initially received referrals from staff in the ED and on inpatient floors, but as the initiative progressed, more referrals came from an electronic health record algorithm that constructed a daily list of all patient admissions in the past 24 hours with a history of an SUD diagnosis, regardless of chief complaint on admission. Key lessons included:

» **Having multiple referral sources bolstered enrollment:** Staff reported that having multiple sources of referrals helped ensure that they reached patients in need. For hospital staff, manual referrals were a way to connect their patients with the services they needed. At the same time, the computer algorithm ensured that oversights and selection bias did not affect which patients were approached to participate in the initiative.

» **Repeated outreach increased the likelihood of engagement:** Peer coaches approached patients for enrollment in the initiative during their inpatient stays. If patients were not willing to engage initially, the coaches returned to try again or the social workers intervened to offer additional points of contact and support in getting patients enrolled.

FACILITATING TELEMEDICINE IN A HOSPITAL SETTING

During their hospital stays, patients worked with on-site peer recovery coaches and social workers, and as needed, connected with an addiction psychiatrist via telemedicine. When a telemedicine consult was warranted, the peer recovery coach facilitated the telemedicine session, bringing a tablet to the patient's bedside and connecting the patient and psychiatrist. Key lessons included:

» **The patient's hospital stay created a unique opportunity to intervene to treat the patient's SUD:** Initiative staff reported that the hospital stay provided ample down time to meet with team members, discuss options, and begin treatment. The combination of face-to-face contact and telemedicine services helped the team build relationships with patients while providing specialized care to treat both their SUD and the initial cause of their admission.

» **Telemedicine allowed inpatient staff to facilitate connections to outpatient care:** To improve continuity of care beyond the hospital, the team began using the telemedicine technology to connect patients with outpatient treatment following their hospitalizations. The social worker or peer recovery coach worked with patients to complete

intake visits with an outpatient rehab provider, eliminating the need for those patients to travel for a long appointment to begin outpatient treatment after discharge.

» **The hospital setting presented challenges for maintaining privacy and a distraction-free space for the telemedicine consult:** While the clinician took care to demonstrate to the patient that no one else was in the room on his side of the call, patients were not staying in individual rooms which made it challenging to maintain privacy. In addition, visitors, television noise, medical equipment noise, and visits from clinical staff could sometimes interrupt the session.

» **Peer recovery coaches played a critical role in facilitating the telemedicine session:** Peer recovery coaches introduced the patient to the telemedicine technology and spent time explaining it before the session to increase the patient's comfort with receiving treatment in this new modality. A peer recovery coach noted, "I come in with the telemed cart [and] give them a little lowdown on the equipment [...] I usually like to utilize a little bit of humor. I'll say something like, 'Hey it's like Star Trek up in here. See the doctor on the screen?'" The peer recovery coach was present during the telemedicine consult to help mitigate distractions and troubleshoot any technology issues that arose.

STAFFING AND PARTNERSHIP

The composition of the initiative team – including a mix of on-site and remote staff with diverse professional experience – was central to the care model. In addition, UMass Memorial engaged in primarily informal partnerships with outpatient rehabilitation and SUD treatment facilities. These connections allowed the UMass Memorial team to link patients to outpatient treatment and helped the team follow patients post-discharge. Key lessons included:

» **The new peer recovery coach role required policy and workflow changes:** Recognizing the valuable perspective of peer recovery coaches, hospital leaders modified practices (e.g., changing the criteria for background checks conducted during the hiring process) to accommodate this new role. Other policy changes enabled peer recovery coaches to assume unique and distinct responsibilities. For example, to facilitate patient engagement outside of the hospital, coaches were allowed to drive patients and to purchase coffee for meetings in the community.

» **Despite connections with outpatient facilities, following patients after discharge was time consuming and challenging:** UMass established workflows to get information releases with community-based partner organizations so they could share information about patient care and treatment. However, staying in contact with patients after discharge was difficult, which limited the team's ability to collect follow-up data on patients' adherence to their treatment plans.

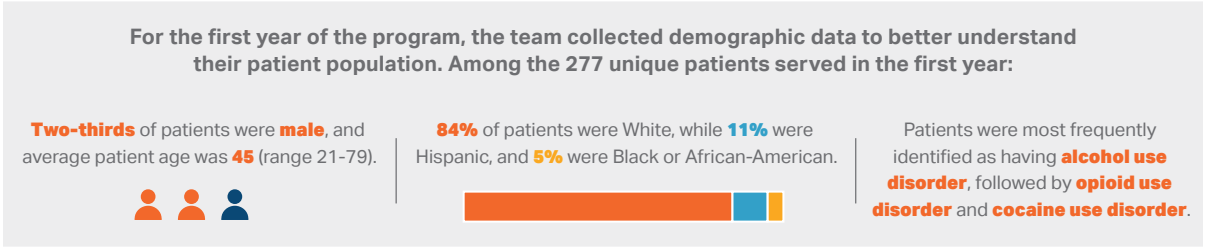
» **Systemic barriers outside of the initiative's control hindered post-discharge components of the initiative:** A statewide shortage of inpatient SUD treatment beds meant SUD treatment facilities were often full and could not accept referrals. For patients that couldn't be discharged home, coordinating ongoing SUD care proved challenging and at times, impossible. One outpatient MAT provider originally agreed to provide MAT treatment to patients in skilled nursing facilities but discovered they could not bill for these services and terminated the initiative.

IMPACT

Throughout the initiative, staff collected data to assess their progress towards engaging patients in evidence-based treatment for SUD. While the team originally intended to measure readmissions, methodological challenges and a lack of baseline data made it challenging to determine impact. Data collection and analysis was supported by a research coordinator, who helped extract and analyze data from the electronic health record.

» **The UMass Memorial initiative expanded access to SUD treatment for hospitalized patients:** During the 18-month implementation period, the initiative engaged with 444 unique patients over 479 hospitalizations (See **Exhibit 9**).

Exhibit 9: UMass Memorial Demographics



Note: Demographic data only available for first 12 months of program implementation (excludes NCE).

- **Patients' engagement with the team reflected the tiered nature of the initiative:** Over 80% of patients met with a peer recovery coach and approximately half met with the social worker. About 25% of patients had a consult with the addiction psychiatrist.[xxiii] While not every patient required a telemedicine session, the ability to connect with the psychiatrist anchored this initiative and ensured that patients and providers had access to appropriate expertise. Over the course of the initiative, 155 telemedicine sessions were conducted.
- **The initiative expanded access to evidence based treatments, including medication for addiction treatment (MAT):** Bringing addiction psychiatry services to the UMass Memorial campus enabled the initiative to offer patients evidence-based treatments during their hospital stays. While MAT was not appropriate for all patients, the team initiated or maintained MAT for patients during 188 hospitalizations.[xxiv] Connecting with patients post-discharge was challenging, but the team was able to confirm at least two-weeks of continued engagement in MAT following 113 hospitalizations.[xxv] Despite these successes, in approximately half of the hospitalizations (243 hospitalizations), patients left without a follow-up appointment, underscoring the challenge of engaging patients in SUD treatment.[xxvi]
- **A small sample of surveyed patients reported high levels of satisfaction:** The initiative distributed a survey to patients who received a telemedicine session, and while only a small number of patients (n=38) responded, they reported high levels of satisfaction with the telemedicine encounter overall. They found the technology and the care they received acceptable and did not express major concerns about privacy.
- **The UMass team felt the initiative improved the care that the hospital was able to offer to patients with SUD:** The psychiatrist said, it is "a rewarding experience to be able to meet people who otherwise are not going to be able to be seen by a specialist. I have a lot of [...] case examples of people that I think their lives were saved by being put on medication assisted treatment and being connected to a Suboxone clinic while they were in the hospital because of a service like ours."
- **Staff reported that the presence of the initiative changed hospital staff's attitudes and reduced frustrations:** The initiative team felt the services helped decrease stigma and provide hospital staff with new resources. One of the recovery coaches shared, "Through my interactions with hospital staff and patient's families, I believe I help reduce the stigma associated with substance use by showing that real recovery is possible." A hospitalist at Memorial said this initiative "helped with provider burnout as before the project, hospitalists were managing this challenging patient population without much specialty support."

SUSTAINABILITY

The initiative team paid careful attention to sustainability throughout the implementation period. They intentionally aligned their initiative with the Medical Center's strategic goals, positioning this initiative as a solution to meet clearly defined needs and as a way to support key hospital quality improvement targets. Multiple presentations to hospital leaders and frontline staff helped establish the benefits of the initiative, highlighting patient and staff experience and the potential for reductions in length of stay and readmission.

Following the implementation period, the team pursued several strategies to cover costs, including billing for eligible services, applying for additional grant opportunities, and exploring an off-site contract to provide similar psychiatric consultation to a regional hospital. Most importantly, the team worked to demonstrate the value of this program to stakeholders across the organization. The team aligned the initiative with the hospital's 30-day readmission rate reduction efforts and demonstrated that the readmission rate for patients who were served by the program was comparable to the hospital's overall 30-day readmission rate, a success given the high-risk patient population served by this initiative. In addition, the team aligned with the clinical

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xxiii This data was only available for the first year of implementation. It does not include the NCE.

xxiv This includes patients who were initiated on MAT during their hospital stay as well as patients who were on MAT prior to their admission but received MAT management during their hospitalization.

xxv The team was not always able to get in contact with patients two-weeks post-discharge, and therefore this total is likely an undercount of the number of patients who continued engagement two-weeks post-discharge.

xxvi Prior to the telemedicine initiative, the University campus had been operating a similar initiative with an on-site addiction psychiatrist. During the same time period as the Pilot Program at the Memorial campus, in approximately 40% of the hospitalizations, patients left without a follow-up appointment. While an imperfect comparison group, this high rate at both sites underscores the challenges of connecting patients to treatment following their hospital stay.

system's Medicare ACO strategy, as patients who were designated as dually insured by Medicare and Medicaid had a fourfold higher relative probability of receiving a consultation from the team as compared to other patients. With the support of these stakeholders and the Medical Center's hospitalist program leadership, the initiative secured support from UMass University Medical Center to sustain the initiative at 50% capacity, stratifying referrals by priority to reach the patients with greatest need for the initiative. In addition, participating in the Telemedicine Pilot Investment Program aligned hospital staff and leadership around the goal of expanding high-quality SUD treatment at the hospital, which laid the foundation for UMass Memorial's participation in the HPC's SHIFT-Care Investment Program.

PART THREE:

INSIGHTS FROM THE PILOT PROGRAM AND ONGOING CONSIDERATIONS FOR TELEHEALTH

INSIGHTS FROM THE PILOT PROGRAM

Given the variation among the Telemedicine Pilot Investment Program initiatives, each awardee experienced distinct successes and challenges in implementing its initiative. They also confronted common obstacles and opportunities. All are instructive for any entity considering implementing a telemedicine initiative or learning more about what characterizes a well-executed and effective telemedicine program.

SETTING

Setting—the physical location in which a patient receives telemedicine services—has a meaningful impact on the delivery of a telemedicine program. The awardees navigated the unique features of their specific care settings to create a care delivery experience that was comfortable for both patients and care teams. While each of the four telemedicine initiatives operated in a different setting – a provider's office, a patient's home, a school, and a hospital inpatient unit — they all took advantage of meeting the patient in a location that was familiar, convenient, or, in the case of the hospital inpatient unit, a setting in which the patient may be more open to treatment.

Across all four types of settings, awardees identified the need to anticipate the potential constraints and opportunities of a given setting for telemedicine and take steps to address those issues prior to initiative launch. Specific insights that emerged included the following:

- **Strong technological capabilities are necessary for a successful initiative.** In the case of the school, doctor's office, and inpatient setting, upgrades to Wi-Fi infrastructure and bandwidth were required to accommodate the telemedicine initiative. In the school setting, there were certain times of day when high usage of the network compromised network speed and reliability, making it challenging to offer teleBH sessions. In the home setting, wide variability in patients' internet service was often a barrier, and team members sometimes had to use hotspots or resort to phone sessions when the internet was not functioning properly.
- **The privacy afforded to patients varied in different settings.** In the home, patients had ample privacy as the telemedicine facilitator would leave the room or the house based on the patients' preferences. The doctor's office and school each designated private rooms for telehealth sessions. In the inpatient setting, shared rooms and the frequent presence of other medical staff made maintaining patient privacy challenging and occasionally created distractions during sessions.
- **Comfort with the setting and the convenience of the setting helped patients access care more easily.** Given the stigma that often surrounds BH services, moving care outside of a BH care center or BH provider's office often removed a barrier that impeded patients from pursuing treatment. The additional comfort of a familiar setting helped some patients to more readily accept the telemedicine intervention. Providing care at a point where patients accessed other services, such as primary care, inpatient hospitalization, or at school also removed administrative, time, and transportation barriers that can often stand in the way of BH care.

STAFFING

While telemedicine may create efficiencies for treating clinicians, it does not eliminate the need for support staff and may even require new or reconfigured roles. All four initiatives implemented new staff roles or adjusted existing ones to accommodate telemedicine. In many cases, these new and altered roles were critical to successful care model implementation. Specifically:

- **Several of the initiatives employed staff members who functioned in a facilitator role for telemedicine services.** Facilitators were responsible for explaining telemedicine to the patient, setting up the technology, and remaining nearby during the session to answer questions or resolve problems. Facilitators provided technical assistance and ensured a warm handoff to the telemedicine provider at the distant site, increasing patient comfort and continuity of care.
- **Awardees experimented with different approaches to integrating facilitator duties into other roles.** While awardees recognized the importance of the facilitator, they also realized that facilitation alone did not constitute a full-time, standalone role. Both for operational efficiency and initiative continuity, they experimented with different ways to add telemedicine facilitation to other responsibilities on the care team. For example, in the hospital setting, the peer recovery coach facilitated bedside telemedicine consultations while also supporting patients in treatment and providing guidance and follow-up care. At the schools, the same school-based care coordinator who facilitated teleBH consults also connected students and families with community resources. In both cases, this combination of duties helped create a sense of fulfillment for the staff members in the facilitator role and allowed them to use their full capabilities to support patients in the initiative. It also created the expectation that telemedicine (and telemedicine staff) was part of the care plan—not a separate, independent transaction.
- **The telemedicine initiatives did not eliminate the need for administrative support services and required workflow adjustments.** As in traditional in-person referrals, teleBH referrals required administrative support staff to manage scheduling, collect consent forms, and ensure closed-loop communication between the telemedicine provider and the referring provider or staff member. Most initiatives were able to accommodate these needs by expanding the duties of existing office staff or including these administrative tasks in the duties of the telemedicine facilitator role.
- **At the time of the program, limited supply of BH providers comfortable practicing via telemedicine constrained initiatives' abilities to scale.** Telemedicine technology is an enabler of provider-patient interactions, so without BH providers who are willing and able to see patients in this modality, the technology is irrelevant. One awardee in particular, encountered barriers when trying to add another tele-BH provider, which limited the initiative's capacity. Staff subsequently learned that few behavioral health training programs address telehealth practice and, through their advocacy work, promoted education and training as key means of increasing the supply of tele-BH providers.
  Recent experience with the rapid uptake of telemedicine in response to the COVID-19 pandemic suggests that providers were able to adopt telemedicine practices quickly when needed, but the need for training to increase comfort and skill when using telemedicine technologies remains relevant (see **Sidebar: The Impact of COVID-19**).

COLLABORATING WITHIN AND ACROSS SYSTEMS

Telemedicine offers the promise of seamlessly connecting patients, providers, and other relevant stakeholders through the use of technology, but the presence of technology alone does not eliminate regulatory barriers and/or address the changes to organizational norms required to effectively integrate clinical and BH care. In the context of the four initiatives, teams that introduced teleBH within existing clinical relationships or with known and trusted partners found data sharing and communication relatively straightforward (in some cases, aided by the presence of a common electronic health record). In contrast, initiatives that used telemedicine to introduce new, external BH providers or to connect a novel stakeholder (e.g., a school) faced more challenges in communication and data sharing. Across both scenarios, some lessons emerged:

- **Clear expectations about referral requirements and data sharing benefitted both parties to the telemedicine collaboration.** Several initiatives worked through mismatched expectations about which patients could be appropriately served through telemedicine and what data could be shared by the BH provider. For example, schools had to adhere to FERPA privacy regulations when referring students for teleBH services, while the teleBH provider had to abide by HIPAA.[18,19] In addition, there were sometimes challenges integrating BH care plans into primary care plans. In those cases, regular meetings including members of the referring teams, the teleBH clinician, and other members of the initiative staff helped maintain open lines of communication to establish expectations and work through any challenges.

» **A reliable means of data-sharing among partners was necessary for appropriate care of the patient.** Providers and team-members on both sides of the telemedicine interaction required adequate information to facilitate the telemedicine care partnership. In some cases, legal and technological barriers made information sharing difficult or impossible. Partners in each initiative had to find appropriate methods to share the information in a secure fashion and ensure that each was providing the appropriate data. Initiatives that had a pre-existing means for simple provider-to-provider communication – often because they worked within the same health care system – had a clear advantage in this regard.

» **An attitude of flexibility and responsiveness to data was critical to adaptations while the Pilot Program was underway.** Challenges inevitably arose during implementation of all initiatives. Several initiatives used their team meeting time to share data and discuss potential changes to their processes to improve enrollment or the experience of patients and providers in the initiative. Approaching the initiative as a work-in-progress with room for improvement was helpful for teams in encouraging open-minded thinking about how the initiative was progressing and how it could be enhanced. Through clear expectations and communication, as well as regular meetings, teams could design and implement changes and use data to inform necessary alterations and improvements.

PATIENT EXPERIENCE

The Telemedicine Pilot Investment Program presented an opportunity to understand how patients experienced the telemedicine modality. While patient experience was often collected informally, all four initiatives reported positive patient experiences with telemedicine:

» **Patients had a positive experience overall with the Pilot Program.** They reported high levels of satisfaction with the care experience and were generally accepting of the telemedicine modality and the associated technology. Patient discomfort with the technology itself was a concern of many of the initiatives prior to implementation, but this did not end up being a major issue. Programs did note that due to the time-limited nature of the Pilot Program, many patients expressed disappointment or frustration when the initiatives ended, highlighting the need for care transition and sustainability planning.

» **Problems with the functioning of the technology were a source of dissatisfaction.** Patients did react negatively to technological issues that interfered with their ability to connect with the teleBH provider and complete their sessions. In these instances, the facilitator played a critical role by troubleshooting technological issues or helping transition the meeting to a different format (i.e., telephone call). It also highlighted for several initiatives the need to have reliable internet connectivity with high bandwidth to avoid disruptions.

STAFF EXPERIENCE

The experiences of both the referrer and the receiving teleBH provider are important to the efficacy of a telemedicine program. Referring staff, who may be clinical or non-clinical, must accept telemedicine as a legitimate means to meet their patients' needs and feel confident in the care provided. TeleBH providers must feel comfortable that they can be effective while practicing in the modality.

» **Referring staff and teleBH providers felt positively about the telemedicine initiatives.** A few initiatives collected referring staff feedback, which was overwhelmingly positive. Some referring staff admitted to being initially skeptical of telemedicine but were very satisfied with the results. Similarly, when interviewed, teleBH providers said that they were able to deliver high-quality care.

» **The telemedicine initiatives augmented the care that originating sites could provide.** Prior to the Pilot Program, the lack of adequate BH care presented a real challenge to meeting patients', students,' or clients' needs at the originating site. The ability to use teleBH addressed a significant concern of referring staff. Some reported that because they felt more confident in their ability to competently support patients in collaboration with the teleBH provider, their perceptions of the patients' capacity to experience some success in treatment and relief of symptoms increased as well.

» **Staff reported that the nature of the telemedicine encounter improved patient experience in some cases.** Some teleBH providers and telemedicine facilitators observed that patients seemed more willing to open up in the telemedicine encounter and seemed more comfortable receiving care in a more familiar setting, such as their home or school.

SUSTAINING TELEMEDICINE INITIATIVES

Most of the awardees found ways to sustain their initiatives in whole or in part. Each awardee took different approaches to finding the funding and support necessary to sustain the initiatives after the end of the award implementation period. However, there were common factors for success in sustaining initiative services:

- **Early consideration of sustainability was important.** Teams that focused attention on identifying success factors necessary to sustain their initiatives early in the implementation period – and built their initiatives to reflect those factors – were more likely to have success in sustaining the initiatives after the award period.
- **The need for reimbursement for telemedicine and associated services was emphasized by many initiatives.** While one program was able to sustain their initiative through standard fee-for-service reimbursement for the teleBH sessions, several initiatives pursued other sources of funding for telemedicine sessions and other initiative services or found ways to sustain parts of their initiative within other services they were already providing. There was agreement among several initiatives that coverage and appropriate payment for telemedicine services across payers would help ensure their ability to generate sufficient revenue to fund the initiatives and continue them at the same scope and scale.
- **Leadership support and buy-in was critical for the success of sustainability efforts.** Keeping leadership engaged in and informed about implementation and performance was a focus for several initiatives. In the absence of payment models for telemedicine, leadership support was gained by assessments of initiative value that focused on other outcomes, e.g., reduction in provider burden, improved patient access and patient care, and mission alignment.

ONGOING CONSIDERATIONS AND CONCLUSION

The Telemedicine Pilot Investment Program demonstrated that telemedicine is an effective modality for expanding access to high-quality BH care for populations with high needs across a variety of settings. Across different settings, the initiatives all succeeded in expanding access to timely BH care for priority target populations, improving the quality of care, and ensuring needed services despite access challenges. The initiatives also provided insight into how different organizations can partner together to implement telemedicine services and highlighted the operational considerations that must be addressed as organizations develop new workflows.

In total, 786 patients participated in the Telemedicine Pilot Investment Program and over 1,600 telemedicine sessions were conducted. Patients gained access to convenient BH services that most likely would otherwise not have been available. Heywood Hospital's initiative brought BH services into the school setting, connecting students with new resources and reducing the need to miss school to travel to office-based visits. PPOC substantially reduced the wait time for psychiatric consults as compared to in-person visits by offering remote consults in the local pediatrician's office. Riverside Community Care, Inc. addressed unmet BH needs by providing home-based teleBH for elders who are homebound, have limited mobility, and/or lack transportation. UMass Memorial Medical Center introduced new substance use disorder (SUD) treatment, including medication for addiction treatment (MAT), to its hospital campus.

Looking ahead, further changes in policy will be required to enable telemedicine programs to sustain and scale to meet the needs of patients in the Commonwealth. In recent years, the HPC has advocated for expanded access to BH care through telemedicine, calling for advancements in infrastructure and payment and regulatory policies needed to facilitate telehealth.[20-22, xxvii] Several awardees noted the importance of expanded coverage and appropriate payment policies to create a financially sustainable telemedicine model. Awardees also noted the need for ongoing workforce development and training among BH providers to ensure their comfort and facility with practicing via telemedicine.

Since the Telemedicine Pilot Investment Program, policy changes have altered the payment and reimbursement landscape. Most significantly, in January of 2019, MassHealth permitted reimbursement for synchronous telemedicine visits for behavioral health care, provided the sessions were conducted by approved provider sites and staff received training prior to practicing via telemedicine.[23] The COVID-19 pandemic created rapid changes in telemedicine policy and utilization, though the full impact of these changes is not yet known (see **Sidebar: The Impact of COVID-19**). Although the payment and policy landscape has shifted since the Telemedicine Pilot Investment Program, the practical lessons identified by the awardees during their initiatives remain relevant today.

xxvii Policy recommendations related to telehealth can be found in the 2019 Cost Trends Report (Policy Recommendation 1), the 2018 Cost Trends Report (Policy Recommendation 10a) and the 2017 Cost Trends Report, (Policy Recommendation 8b).

The Telemedicine Pilot Investment Program demonstrated that telemedicine can expand access to care and bring critical services to patients where and when they need them. In particular, the Telemedicine Pilot Investment Program demonstrated how telemedicine – complemented with on-site staffing and support – can improve the BH care experience for both providers and patients. Furthermore, the awardees' experiences implementing telemedicine in a variety of settings provides valuable insight for organizations considering implementing or expanding telemedicine services. The HPC continues to support policies and programs to expand the scope and reach of telemedicine in the Commonwealth to improve patients' lives and care.

SIDEBAR: THE IMPACT OF COVID-19

The COVID-19 global pandemic created a rapid expansion of the use of telemedicine in the Commonwealth. In an attempt to halt the spread of the virus, many health systems increased the availability of telemedicine to meet patients' existing health care needs and assess potential cases of COVID-19 while minimizing face-to-face encounters. Changes in policy at the state and federal levels enabled this expansion, generally allowing covered, medically necessary and clinically appropriate services to be performed via telehealth by in-network providers with full coverage and payment parity during the public health emergency.[24-28] The months following these policy changes saw enormous increases in the use of telemedicine.[29, 30] While patients utilized telemedicine at higher rates than prior to the pandemic, the volume of visits via telemedicine did not fully replace the average visits per week of any specialty pre-pandemic.[31] However, psychiatry and other behavioral health services were among the services with the highest telemedicine utilization.[31]

While the COVID-19 pandemic began after the Telemedicine Pilot Investment Program ended, several awardees have since noted that the infrastructure and expertise developed during the pilot period helped their organizations pivot their services to be delivered virtually. For example, Heywood Hospital's initiative was able to continue to provide students with tele-BH sessions once they had moved to remote learning. Riverside Community Care, Inc. pivoted the majority of their outpatient services to telehealth during the pandemic, including intake appointments and therapy sessions.

Whether these policy or utilization changes will be permanent or accelerate existing trends towards greater utilization, coverage, and reimbursement of telemedicine remains to be seen.[32] In any case, telemedicine played a critical role in health care delivery during the pandemic, further demonstrating its value as a means to expand access to care in the community.

APPENDIX A

TELEMEDICINE PILOT INVESTMENT PROGRAM EVALUATION METHODS

The primary goal of the Telemedicine Pilot Investment Program was to demonstrate the potential of telemedicine to address behavioral health access challenges in high-need populations. In addition, the Pilot Program was designed to demonstrate effectiveness of multi-stakeholder collaboration to serve high-need populations, and to inform care delivery and payment reform activities across the Commonwealth.[xxviii] To evaluate performance against these goals, the HPC adapted an evaluation framework described by Berry et al., (2013) which is often used by the Centers for Medicare and Medicaid Services to evaluate tests of innovative health care service delivery models.[33] Three broad categories—implementation, impact, and sustainability—assess the program across its lifespan.

The HPC used a mixed methods approach to assess performance across these three domains. HPC evaluation staff conducted 16 semi-structured interviews with initiative staff (2-5 interviews per initiative) including Program Managers, clinical staff, and non-clinical roles. The HPC also collected written reflections from the awardees each quarter, as well as an initial and final self-assessment report. Interview transcripts and written reflections were qualitatively coded using NVIVO software to identify key themes, successes, and challenges. In addition, awardees were 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 10**).

Using a mixed methods approach for the Telemedicine Pilot Program Investment was particularly important because these initiatives were not designed as controlled trials, so measured changes could have multiple causes. Furthermore, qualitative observation and input from the teams carrying out each initiative were essential for interpreting measured changes and for accurately representing the effectiveness of the initiative.

Qualitative and quantitative data were analyzed separately for each awardee. Analysis of staff interviews and written deliverables were used to answer questions about implementation, impact, and sustainability, while KPI data were primarily used to measure initiative impact. These findings are highlighted in Part Two of the report. Following awardee-specific analyses, the HPC compared findings across the four sites to identify important themes that emerged from the cohort, including key lessons that may be valuable for organizations interested in implementing a telemedicine program in their organization. As such, in Part Three, the HPC identified key lessons related to setting, staffing, collaboration within and across systems, patient experience, staff experience, and sustainability.

It is important to note the limitations of this evaluation report. First, the Pilot Program was not designed as a controlled trial and because all of the initiatives introduced net new services, many lacked baseline or comparison group data. Second, the initiatives offered services to a relatively small sample of patients at each site, which limits the ability to draw generalizable

xxviii See Health Policy Commission Telemedicine Pilot Request for Proposals (Funding Opportunity No. HPC-Telemedicine-001)

conclusions and statistical efficacy. Third, all patient experience data were collected by the awardees rather than an independent third-party and while all of the initiatives developed and deployed surveys to collect patient experience feedback, the initiatives did not use validated tools or conduct patient interview or focus groups. These limitations affect the validity and reliability of patient experience data in the report. Fourth, some initiatives encountered challenges, either methodological or operational, that prevented them from collecting all of the KPI measures initially proposed, requiring initiatives and the HPC to omit some original measures.

Exhibit 10: Select KPI measures from the Telemedicine Pilot Investment Program

HEYWOOD HOSPITAL

KPI	NOTES
Number of students served	The team distinguished between students who received telemedicine services and students who accessed other services provided by the school-based care coordinator.
Number of telemedicine sessions conducted	
Number of contacts with families by School-Based Care Coordinators	
Number of students receiving support from School-Based Care Coordinators	
Percentage of patients that indicate overall satisfaction with teleBH services	The initiative worked with the Northeast Telehealth Resource Center to develop their satisfaction survey tool.
Percentage of families that indicate overall satisfaction with teleBH services	The initiative worked with the Northeast Telehealth Resource Center to develop their satisfaction survey tool.
Estimated time saved from school visits	With travel and appointment time, it was estimated that approximately 3 hours of missed school time was avoided per appointment. Notably, in-school appointments were scheduled during non-academic time slots.

PEDIATRIC PHYSICIANS' ORGANIZATION AT CHILDREN'S HOSPITAL

KPI	NOTES
Number of patients served	
Number of initial telepsychiatry consults conducted	
Average number of days between identification of need and telepsychiatric consult	As a baseline comparison, PPOC compared the wait time between identification of need and telepsychiatric visit (n=176) to the wait time between identification of need and in-person visits prior to the initiative. In-person visit data was provided for 2015 and 2016 (n=55).
Average change in symptoms on the Clinical Global Impression scale	Data on the Clinical Global Impressions Scale was reported to the HPC for 239 patients receiving telemedicine services from July 2017 through April 2019. Although the HPC initiative ended in December 2018, PPOC continued to offer the same telepsychiatry services through April 2019.
Average change in symptoms on the Children's Global Assessment scale	Data on the Children's Global Assessment Scale was reported to the HPC for 239 patients receiving telemedicine services from July 2017 through April 2019. Although the HPC initiative ended in December 2018, PPOC continued to offer the same telepsychiatry services through April 2019.
Percentage of families that indicate satisfaction with the telepsychiatry services	Surveys were administered by the primary care practices.
Percentage of referring providers that would recommend telepsychiatry consultation	Surveys were administered through an online survey tool.

RIVERSIDE COMMUNITY CARE, INC.

KPI	NOTES
Number of patients enrolled	
Number of telemedicine sessions conducted	
Reason for determination of "homebound status" for enrolled patients	Data collected by case managers.
Level of coaching required by patient to use teleBH technology	Coaching provided by case managers.
Number of patients who drop teleBH service after enrollment due to technical/comfort issues	Data collected by case managers and/or through patient survey question "Why did you stop participating in the Tele-Behavioral health services?"
Percentage of patients who report increased comfort with teleBH	Data collected through enrollment and post-discharge patient surveys.
Percentage of patients with reduced symptoms of depression at discharge as measured by PHQ-9	The program administered the PHQ-9 surveys at enrollment and discharge. Initial and final scores were compared for patients who had screened positive for depression at intake.
Percentage of patients who were satisfied with the telemedicine program	The program administered written enrollment and post-discharge surveys.

UMASS MEMORIAL MEDICAL CENTER

KPI	NOTES
Number of patients served	
Patient demographics, including age, gender, race, and type of substance use	Demographic data were only available for the first 12 months of the pilot.
Number of hospitalizations served by the program	
Number of hospitalizations that included a telemedicine visit	
Number of hospitalizations that included contact with the recovery coach, social worker, and psychiatrist	
Number of hospitalizations in which the program initiated or maintained medication for addiction treatment (MAT)	This measure captures both 1) initiation of MAT or referrals for patients who were not currently using MAT and 2) maintenance of MAT for patients who were already using MAT prior to their hospitalization. All types of MAT are included.
Number of hospitalizations in which the program initiated or maintained medication assisted treatment (MAT) and confirmed patient continuation two weeks post-discharge	The program team noted challenges with connecting with all patients two weeks post-discharge, which means that this metric may undercount the number of patients still engaged two weeks post-discharge.
Percentage of patient discharges without a follow up appointment	
Patient satisfaction with telemedicine encounter	Patient surveys were administered via a tablet while in the hospital.

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