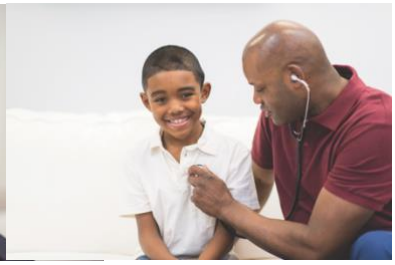
Boston Medical Center
Center for the Urban Child and Healthy Family



CENTER FOR THE URBAN CHILD AND HEALTHY FAMILY

Bi-Annual Progress Report

JUNE 1, 2020

BOSTON MEDICAL CENTER DEPARTMENT OF PEDIATRICS

Boston Medical Center
Center for the Urban Child and Healthy Family

Contents

1. Center Strategic Vision

1.1. Vision

Health equity—that *all* children have an equal opportunity to be healthy and to achieve their full potential.

1.2. Mission

Redesigning the pediatric care model to achieve dramatic improvements in outcomes for children and families facing adversity.

1.3. Center Pillars: What Makes Us Different?

1. Commitment to fundamental systems-level change;
2. Commitment to rigorous data collection and analyses to determine if initiatives are working and for whom; and
3. Changes to the care model are driven by voices of families

1.4. Approach

To build the Practice of the Future through developing, testing and scaling an innovative model of pediatric health care delivery, working in concert with families, communities, and other child- and family- serving sectors.

1.5. Audacious Goal

By 2028, all children cared for by BMC Pediatrics are healthy and ready to learn, with adequate supports to thrive, by age 5. The rationale for focusing on this age group includes that it enables emphasis on bi-generational wellness, necessitates connection with other child serving agencies, and is a formational time for life course health. Additionally, there is national momentum within Medicaid around creating quality metrics focused on early childhood and school readiness.

1.6. Pediatric Practice of the Future

The Center co-developed a new model of pediatric primary care with families and pediatric providers. This model supports **holistic family development**, providing care in a systematic, equitable way that promotes wellness throughout the life course. The Center is pilot testing the new model with families with infants, and will be collecting data to understand its impact. Ultimately, a financially sustainable model will be scaled to the larger primary care practice. In addition, the Center is partnering with BMC HealthNetPlan, BMC's health insurance program, to test alternative payment models to ultimately redefine value in pediatric care.

2. Pediatric Practice of the Future

The Center's first major initiative has been to design, test, iteratively improve, and scale the Pediatric Practice of the Future, a new model of pediatric primary care that systematically addresses the unmet needs of low-income families and puts each child–-regardless of his or her socioeconomic background, race, or gender–-on a path to a healthy life.

2.1. Pediatric Practice of the Future Model

One of the pillars of our work is the belief that fundamental care redesign will only be successful if families co-create solutions. As such, our approach to designing the Pediatric Practice of the Future included the use of human-centered design (HCD) to drive the process of system redesign and ensure sustainable system-level improvements will be desirable, usable, and accessible to pediatric primary care staff and the families they serve.

The Pediatric Practice of the Future (POF) was co-developed with families, providers, and hospital administrators. Foundational to the model are specific system-focused elements including designing with scale in mind, data-driven rapid improvement and iteration and building an equitable system of care. The emerging framework for the Practice of the Future focuses on supporting whole family development including bi-generational physical and emotional/spiritual health, dyadic attachment and economic well-being, with attention to delivering care in a systematic, equitable way to promote wellness throughout the life course.

2.1.1. Core Systems

System-focused elements are foundational to the success of the core model (Appendix 1); these elements include designing with sustainability in mind, ensuring equitable care, and considering scalability at the outset of the design process. Within each of these elements, we have identified strategies to hold ourselves accountable.

To ensure **sustainable innovation,** we have developed a data-driven framework for iterative quality improvement, identified outcome measures to understand long-term impact on family health trajectories, health care use, and patient satisfaction, and are testing alternative payment models, in partnership with the BMC Health Plan.

To promote an **equitable system of care,** we are continuing to ensure that family voice drives the model development. This includes continuing to incorporate HCD methods in the iterative development of model components.

Lastly, we are **re-envisioning workforce development and teaming.** To begin this process, the POF innovation team (composed of a pediatrician, nurse, community wellness advocate and infant and dyadic mental health social worker) participated in a 12-hour training focused on racial justice, structural oppression and its impact on health, and trauma informed care. We will continue to engage in "teaming" work to ensure that we create a health care team that models our values of inclusion, respect for diverse voices and accountability as part of a larger goal of creating an equitable system of care.

2.1.2. Core Model

The core Practice of the Future model itself, similar to the core systems, consists of elements that were identified based on the priorities of families. Within each element, the Center identified specific strategies to test. These interventions are being measured in real time in order to assess how they are working, and to iteratively improve on the model itself. Elements of the POF model include to bi-

generational well-being, supporting parental self-efficacy and autonomy and embedding financial mobility. See Table 1 (and Appendix 2) for strategies being implemented and tested.

Table 1. Core Model Elements and Strategies

Element	Strategies
Bi-generational Wellbeing	• Parents' health care coordinated with child's care • Support during the prenatal to postpartum transition • Integrated social worker trained to support parental mental health and dyadic attachment • Parents provided guidance specific to promoting positive development for *their* child • Parents offered connections with other parents to decrease social isolation
Support Parental Self-Efficacy and Autonomy	Family-Driven Goal Setting • Parents supported to set tangible, measurable goals with support to track progress, barriers, and achievement Families Design their own Well Child Care • Pre-visit planning with menu of services empowering families to set priorities and agenda for healthcare visits • Family-driven eco-mapping to comprehensively understand family based strengths, resources, and needs • Systematic offering of additional BMC programs and of community based services in partnership with relevant community-based organizations
Embedded Economic Mobility	Financial Coaching • Individualized financial coaching during or after visits • Financial goal setting with community wellness advocate and financial coach Child Savings Accounts • Support to set up 529 college savings accounts during first year of child's life Employment Opportunities • Access to BMC job training programs with pathways to employment within the hospital

2.2. Practice of the Future Pilot

The Center has supported an innovation team to pilot the new model in the BMC pediatrics primary care clinic. Goals of the pilot include: 1) testing a model to address Whole Family Development; 2) collecting data, iterate, and refine components; 3) exploring of alternative payment models in pediatrics; and 4) scaling elements that are working to the larger pediatric practice. Our team has capacity to deliver care in English, Spanish, and Haitian Creole.

In January and February 2020, 21 families with 36 children have been enrolled. Eligible families include those who have an infant (from pregnancy through 6 months), receive health insurance through the Boston Accountable Care Organization, will be seeking or are receiving pediatric primary care at BMC, and live in the 5 neighbors surrounding Boston Medical Center where many of our families of young children live (Dorchester, Roxbury, Mattapan, South End, and Hyde Park). This recruiting stopped in March 2020 due to the COVID-19 pandemic. We anticipate beginning recruitment again starting in June 2020, with the goal of enrolling 100 families this year.

Before the COVID-19 pandemic, the Pediatric Practice of the Future functioned as a standalone clinic within primary care on Wednesday afternoons. Additionally, our integrated behavioral health social worker and community wellness advocate provided support in the community or through telehealth according the preference of families.

Currently, in the midst of the COVID-19 pandemic, the team is learning how to deliver elements of the model remotely, as well as assessing other ways to leverage our multi-disciplinary team to support families based on new needs the COVID-19 pandemic has created. Specifically, we are developing work flows for each core element of the model, developing EPIC templates and relevant documents, and beginning small tests of change. In addition, we are considering which elements need to be adapted, either in content or in delivery. For example, for the bigenerational health component rather than focusing on same day connection for contraceptive services which is not possible during COVID, we are considering assessment of parents' connection with their own primary care providers and provision of mental health support.

2.3. Measurement

The Center is taking a three-pronged approach to measurement so that decisions and assertions made about the effectiveness and impact of the POF model are data-driven: 1. outcomes; 2. quality improvement; and 3. cost.

2.3.1. Outcome Measures

The Center will collect outcome measures to understand long term impact of program components on family health outcomes. The Center has been approved through the IRB to conduct an evaluation of the experience and health outcomes of the clinical program and comparison children and their families. Total study enrollment will be 150, with 50 families in the POF clinical program, and 100 comparison families. Comparison families will be identified based on criteria which mirror POF clinical program inclusion criteria. The impact of the POF clinical program will be assessed for POF and comparison families through Electronic Medical Record data of parent and child, surveys, and claims data at study enrollment, after 6 months, 12 months, and 24 months. The outcomes that will be assessed include: physical and developmental health outcomes of child; parental well-being; dyadic relationship/parenting; healthcare use of the family; and parental trust and satisfaction with healthcare.

2.3.2. Quality Improvement Measures

Quality Improvement (QI) measures are being collected, displayed as a dashboard, and analyzed to make decisions about which elements of the POF model are working, and for who, and will be used in real time to refine, iterate, and make decisions about the model's effectiveness. The evaluation team has created a model component tracker to understand fidelity of the implementation and adoption of elements by POF families. There are also benchmarks that can be collected through the EMR such as appointment show rates and closing gaps in ACO metrics. These data are routinely monitored by the Research and Evaluation Coordinator, and brought to the POF team to discuss. The Center is working with a QI Advisor who will support practice transformation including determining how to use the data that is being collected to make decisions about changes to the model.

2.3.3. Cost Measures

The Practice of the Future is designed to be a scalable model of pediatric primary care that supports whole family development. Traditionally, healthcare does not prioritize preventive services, child health, and promotion of wellness. Therefore, the Center is collecting cost data to make the case for quality metrics that promote prevention, wellness, and population health strategies. In partnership with the BMC Health Plan (BMCHP) the Center seeks to test alternative payment models (APM) in pediatrics that aim to drive upstream family health. Through piloting an APM in pediatrics we aim to support mechanisms for outcome-based payments that increases service flexibility and focuses accountability on results and prevention and to collect data to make the case for quality metrics that promote prevention, wellness, and population health strategies.

3. Integrated Evaluation Core

The Boston Accountable Care Organization (BACO) Research Team and the Center have partnered to build a comprehensive evaluation core that spans the Center and BACO that can support "soup to nuts" evaluation across Pediatrics and the hospital. We are working closely with clinical and programmatic teams to create the evaluation infrastructure to promote both quality improvement, and to answer key questions about the impact of these clinics and programs on patient outcomes. The strategic aims of the evaluation core are to:

- Create a culture of evaluation by building forward-thinking program evaluation into the design of new programs
- Facilitate understanding of how programs are working, and for whom
- Provide early focus on scalability and financial sustainability
- Drive evaluations that align with broader Health System priorities and goals.
- Support robust and innovative evaluation designs to facilitate increased publication opportunities.

Currently, the Center and ACO Research projects are being used as "learning labs" to assess evaluation needs, understand data access operations, and establish data governance processes. This will lay the foundation for optimal data systems and capacity that are necessary to launch a full-service evaluation core.

3.1. Progress on Evaluation of Existing Programs

As part of the evaluation core, the Center provides oversight for the evaluations of innovative clinical programs within the Pediatrics Department (with a focus on the programs that were first funded by the

Center). Over this year, we have made significant progress in our evaluation efforts. We are currently providing programmatic and evaluation support to the SOFAR program, EASE program, and evaluation support to the CATALYST program. Below we have detailed progress on each.

3.1.1. Supporting Our Families through Addiction and Recovery (SOFAR) Program

Launched through seed funding from the Center, the Supporting Our Families through Addiction and Recovery (SOFAR) program is a trauma informed, non-stigmatizing medical home for substance exposed families in pediatric primary care to promote safe, stable, and nurturing relationships. The program is led by Medical Director Eileen Costello, MD and pediatrician Sara Stulac, MD, MPH. To date, the program has served over 171 children.

With the retrospective data we extracted and analyzed, we published the paper *Children and Families of the Opioid Epidemic: Under the Radar Issue* in the Journal of Current Problems in Pediatric and Adolescent Health Care. Additionally three abstracts were submitted and approved for presentations at AAP, the American Academy of Child and Adolescent Psychiatry, and PAS 2020 (see section 6.2 Presentations for details). Lastly, the team has launched a standardized visit for in the electronic medical record to enhance uniform data collection across the SOFAR patient population. We have approval to extract medical record data prospectively but currently, consenting patients to enroll is on hold until the COVID-19 pandemic passes.

3.1.2. Engagement and Access to Special Education (EASE) Program

Launched through seed funding from the Center, the Engagement and Access to Special Education (EASE) program aims to provide education and guidance to address the current gaps in the resources for patients and families with special education needs. Primary Care Providers refer children to the program if there are concerns about educational progress. Providers from the EASE program work closely with the family, school and primary care provider to support children's learning needs. The program is led by pediatrician Soukaina Adolphe, MD and Manager of Family Navigation, Ivys Fernandez-Pastrana, JD, and has served over 215 patients. Over the course of this year, the Center has been working with the EASE clinic team to understand the implementation of the clinic. In particular, we have been looking at monthly data on visit show rates and descriptive demographics of new patients. Currently, the Center is abstracting information from the Electronic Medical Record for our annual analysis of longer term health impact of the clinic. This data will be analyzed over the summer and a report of findings will be generated.

3.1.3. CATALYST Program

The Center for Addiction Treatment for AdoLescents / Young adults who use SubsTances (CATALYST) is a substance use treatment program based in both the BMC Adolescent Clinic and General Internal Medicine. CATALYST utilizes an Office-Based Addiction Treatment (OBAT) model that is developmentally-appropriate for youth patients. Patients are adolescents and young adults who use substances, including opioids, marijuana, and alcohol. The CATALYST clinical team is interdisciplinary and includes a nurse care manager, physicians, social workers, recovery coaches, and patient navigators. Depending on the patient, treatment plans may include current evidence-based medications for addiction and co-occurring psychiatric disorders, psychotherapy, Hepatitis C treatment, pre-exposure prophylaxis for HIV, contingency management, and assistance with recovery needs such as transitional assistance, food security, and employment and residential programs.

Overarching goals are to reduce or eliminate substance use, reduce harm from substance use, improve health and well-being, and maximize engagement and retention in care. The Center and the BACO Research team are working collaboratively to evaluate the CATALYST program. Since the publication of our last report, the retrospective chart review has been completed. The team is currently working on submitting a paper describing the implementation of the clinic in the first 2.5 years along with patient demographics and descriptive information about substance use, mental health diagnoses, treatment and retention patters within this cohort.

3.1.4. Mobile Vaccine Project

Spearheaded by Dr. Eileen Costello and nursing director Tami Chase, a mobile vaccine van intervention was launched in the Department of Pediatrics in April 2020 to address the immediate healthcare needs of families with young children during the COVID-19 pandemic. The intervention involves a clinical team of two to three providers (pediatricians and nurses) taking a van into communities where BMC families live and holding well-child appointments out of the van. This allows families with young children who require height and weight checks and immunizations to stay up to date on routine well-child care without exposing the family to the increased risk of exposure to COVID- 19 associated with travel to and entry into the hospital.

The Center has submitted a proposal to the IRB to evaluate the feasibility and cost effectiveness of this intervention to address family's needs beyond the COVID-19 pandemic.

4. Urban Health and Innovation Fellowship

The Center is committed to providing continuous learning opportunities to advance the development of providers, improve the systems they are working in and ultimately provide better care. Currently we are achieving this aim through the development of the Urban Health Innovation Fellowship.

The overarching goal of this two-year Fellowship program is to develop a cadre of pediatric innovators capable of creating large-scale change for families' health. We expect that program graduates will seek a variety of career opportunities in government, public health, for profit and non-profit sectors, and academia. Once launched, we anticipate bringing on one to two fellows per year for a two-year fellowship.

To achieve this goal, the Center worked with a Curriculum and Evaluation Consultant from the Boston University School of Public Health to design the fellowship curriculum with a focus on preparing future leaders in pediatric healthcare transformation. The fellowship will be a two-year program in which the first year is focused on applied learning within the three core competencies (Design and Evaluation of Program and Policy, and Leadership and Management, Systems Innovation). Year two is focused on the fellowship project, likely in partnership with a community agency that the fellow identifies.

Planning next steps for launching the fellowship are currently underway.

5. Other Initiatives

5.1. Pediatric Family Advisory Board

The Pediatric Family Advisory Board (FAB) was launched by the Center for the Urban Child and Healthy Family in 2017 with the goal of fostering parent, child and professional partnerships to better meet the

needs of families receiving care at Boston Medical Center. Regular engagement with the FAB ensures that families are at the center of planning and development of innovative new models of care and is aligned with the adage “nothing about us without us.”

Through monthly meetings, the FAB works closely with the Center to provide advice on the design of the Pediatric Practice of the Future. Over the last year, the FAB has seen prodigious growth achieving a membership of 13 parents. In addition to active participation in monthly meetings, the FAB has also contributed to the planning of and participated in community events including the BMC Wellness Day, and the Peace of Mind Family Festival, and the BMC Annual Flu Clinic and Wellness Day. We have also expanded our language capacity in this year and can now recruit families who are English and Spanish speaking. The FAB set a target of recruiting 5-6 new members by 2020 and achieved that goal.

5.2. The Joel and Barbara Alpert Endowment for Children of the City

Through the Joel and Barbara Alpert Endowment, the Center supports pediatric residents from the Boston Combined Residency Program to implement and evaluate projects that innovate and transform pediatric health care delivery and improve child health outcomes. Pediatrics fellows are also invited to submit more traditional small research grants. We have now released three Requests for Proposals in fall 2018 and spring 2019, and fall 2019. Through this grant, we have funded a total of five projects. Those funded in the 2019 cycle are described below.

5.2.1. Assessing the association between household material hardship and ED reliance in pediatric patients with sickle cell disease

Poor health outcomes related to sickle cell disease can be reduced by completion of evidence-based preventive care services, often delivered in the outpatient setting. Reliance on the emergency department (ED) in place of these outpatient hematology appointments reduces opportunities to provide preventive services and is associated with high healthcare costs. Poverty in children with sickle cell disease, is associated with high ED utilization, but it is unknown if other social factors contribute to this association. This project aims to understand if there is a relationship between ED reliance and socioeconomic needs in children with sickle cell disease.

5.2.2. Diapers to Diplomas: Clinic-based Approach to Empowering Low-Income Families to Build Assets

Diapers to Diplomas serves to expand educational options, increase financial assets, and improve the wellbeing of BMC families. It will optimize enrollment into the Baby Steps initiative in which all children born or adopted on or after January 1, 2020 in Massachusetts will be eligible to receive a $50 deposit from the state if their parents open a 529 college savings account (CSA). Utilizing a patient-centered, financial empowerment approach, Diapers to Diplomas will provide each participating family with a week’s supply of diapers monthly over the 1-year project duration. This diaper supply reduces families’ financial burdens while taking advantage of a low-cost hospital resource1 and liberates cash to place into the college savings account. Diapers to Diplomas makes it easier for parents to save for their children’s futures while still taking care of the present. We aim to demonstrate a scalable innovation in creating investment opportunities for low-income families.

5.2.3. The Boston Eviction Study

Housing concerns are particularly relevant to Boston, which ranks as one of the most inaccessible rental markets in the nation.2 An individual earning minimum wage must work 115 hours per week to afford

the median rental cost of a one-bedroom apartment. The Boston Eviction Study is looking at the impact of eviction on child health outcomes within the city of Boston, as part of a larger initiative at Boston Medical Center and Children's HealthWatch to address access to affordable housing. The central aim of the study is to characterize history of evictions as an important potential driver of health disparities among children. Individuals with low income are consistently more likely to be burdened by housing costs and are at greater risk for eviction, which in turn is associated with negative health outcomes.

6. Dissemination

The Center distributes a **quarterly newsletter** that is disseminated internally to the BMC community and externally to our donors, stakeholders, and community collaborators. Stories published in any of our newsletters can be found on our website.

6.1. Publications

Children and Families of the Opioid Epidemic: Under the Radar Issue
Journal of Current Problems in Pediatric and Adolescent Health Care
Authors: Sara Stulac, MD, MPH, Megan Bair-Merritt, MD, MSCE, Elisha M. Wachman, MD, Marilyn Augustyn, MD, Carey Howard, MPH, Namrata Madoor, BA, Eileen Costello, MD

6.2. Presentations

Supporting Our Families through Addiction and Recovery: The SOFAR experience at Boston Medical Center
2019 AAP National Conference & Exhibition
Poster Presenter Author: Sara Stulac, MD, MPH
Co-Authors: Eileen Costello, MD; Megan Bair Merritt, MD, MSCE; Marilyn Augustyn, MD; Carey Howard, MPH; Namrata Madoor, BA
October 2019

Building the Pediatric Practice of the Future: Care Innovation for Families Facing Adversity
2019 AAP National Conference & Exhibition
Poster Presenting Author: Carey Howard
Co-Authors: Megan Bair-Merritt, MD, MSCE; Melissa Gillooly, MPP, Robert Vinci, MD
October 2019

A Dyad Model of Care for Mothers and Children of the Opioid Epidemic
American Academy of Child and Adolescent Psychiatry Chicago, IL
Presenter: Eileen Costello, MD
October 2019

Pilot Data on Growth Trajectories of Infants with Prenatal Opioid Exposure
Pediatric Academic Societies (PAS) 2020 Meeting
Session Presenter: Sara Stulac, MD
Co-Authors: Emmanuel Aryee, MD; Marilyn Augustyn, MD; Carey Howard, MPH; Myrna Lyncee; Eileen Costello, MD
**due to COVID-19 PAS 2020 was cancelled and the team was not able to present this abstract*

7. Grant Highlights

7.1. Advancing Integrated Models (AIM)

With support from the Robert Wood Johnson Foundation, the Center for Health Care Strategies (CHCS) launched the initiative, Advancing Integrated Models (AIM), to further health care system efforts to integrate person-centered approaches to care for people with complex health and social needs. The Center was selected alongside six other organizations to participate in a 24-month pilot demonstration to align integration strategies. This award provided the Center with support to launch the Practice of the Future pilot. Over the course of the two-year initiative, the Center will engage in learning collaborative activities, and receive targeted technical assistance and evaluation support. Lessons from the AIM initiative will be shared broadly through a robust dissemination strategy. Lastly, as a requirement of this grant, we have partnered with BMC Health Plan, the hospitals payer. Through this partnership we are now exploring and planning to test alternative payment models in the context of pediatric innovation. This partnership is integral to the sustainability of the POF model.

In October, the partner organizations will convene in-person in Boston to share progress and lessons. The Center will host a session of this convening at BMC to specifically present our work.

7.2. The JPB Foundation

In partnership with Children's Health Watch, the Center was awarded grant titled Early "Identification of Rising Risk Families and Parent-Guided Team-Based Care to Prevent and Mitigate Toxic Stress." Through this grant, Children's HealthWatch and the Center for the Urban Child and Healthy Family will catalyze Boston Medical Center Health System's 2030 vision by collectively implementing a multi-pronged, coordinated approach to promoting family and child well-being. This project represents a three-pronged approach to support families' ability to thrive, including research, practice innovation and translation of this work into a public communications narrative in partnership with families with lived experience.

This grant provides the Center an opportunity to accelerate the pilot testing of the Pediatric Practice of the Future, codifying and expanding the elements of the model to the BMC Pediatrics primary care practice. The Center also will prototype and test a family-driven technology platform that facilitates cross-system (e.g., healthcare, education, social services) communication, goal setting and care planning (to the degree we are able to move this forward related to performance-driven variable funds). Finally, designing a model that can be scaled beyond BMC has been an essential consideration throughout our process. Over the course of this grant, we will prepare for scale through the creation of at least one learning community with: (1) affiliated community-based sites in MA that serve families facing adversity; and/or (2) safety net academic hospitals in the United States.

7.3. Pincus Family Foundation

Over the course of the last year, a unique and innovative multi-institutional partnership has formed that between the Pincus Family Foundation and four of its grant-funded institutions including the Center, Children's Hospital of Philadelphia Global Health Center, Temple University Center for Urban Bioethics, and Tulane University. Together with these partners, we are working toward a common mission of positively impacting children's health. In June, this partnership will host our first annual symposium "Toward a Better Future: Promoting Child Well-Being and Health Equity Through Strategic Partnership."

This virtual event will run as a series of active, participatory workshops. Partners will take turns running 1-hour sessions. Through a collective vision, partners situate themselves as experts in their fields and work toward incrementally supporting norm change for a larger shared goal.