

The Children's Medical Center Corporation
DoN Application No. BCH-20171411-HE
Attachments

**Substantial Capital Expenditure
Ambulatory Surgery Center &
DoN Required Equipment
Boston Children's Hospital**

July 15, 2021

Submitted By
The Children's Medical Center Corporation
300 Longwood Avenue
Boston, MA 02115

The Children's Medical Center Corporation
DoN Application No. BCH-20171411-HE

TABLE OF CONTENTS

1. Introduction
2. Project Description
3. Narrative Responses
 - a. Factor 1 – Patient Panel Need, Public Health Values, and Operational Objectives
 - b. Factor 2 – Health Priorities
 - c. Factor 5 – Relative Merit
4. Bailit Report
5. Factor 4 – Capital Costs Chart and Independent CPA Analysis
6. Factor 6 – Community Health Initiative Supplemental Information
 - a. 2020 Community Health Needs Assessments (990 Schedule H CHNA/CHIP)
 - b. CHNA/CHIP Self-Assessment Form Cover Page
 - c. Community Health Initiative Narrative
 - d. Community Engagement Plan
7. Notice of Intent
8. Articles of Organization
9. Affidavit of Truthfulness and Compliance
10. Filing Fee
11. HPC ACO Certification Approval Letter
12. Affiliated Parties
13. Change In Service

Attachment 1

Introduction

Introduction

The Children's Medical Center Corporation (the "Applicant") is the sole corporate member of The Children's Hospital Corporation, doing business as Boston Children's Hospital (the "Hospital" and, together with the Applicant and its affiliates, "Boston Children's"). The Hospital is the only freestanding pediatric acute care hospital in Massachusetts and the nation's premier pediatric medical center. Boston Children's provides one of the most comprehensive networks of pediatric subspecialists in New England, including primary care services through Children's Hospital Primary Care Center and the Pediatric Physician's Organization at Children's ("PPOC"). Boston Children's mission is to provide the highest quality of health care, to lead the way in research and discovery, to educate the next generation of leaders in health care, and to enhance the health and well-being of the children and families in our local community. The Hospital is a Massachusetts nonprofit corporation, a public charity, and qualifies under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended.

Boston Children's is dedicated to empowering and supporting all patients, families, clinicians, researchers, staff, and communities, and is committed to enhancing access to the best health care, cultivating a diverse workforce, instilling a welcoming environment for all, bolstering respect for cultural differences in the delivery of care, reducing differences in health outcomes among different racial and ethnic groups, advancing our community outreach, and developing further student and residency outreach. Boston Children's is committed to supporting health equity and promoting anti-racist practices, and the Hospital serves all Massachusetts patients and families regardless of their ability to pay or insurance status. The Hospital and its clinicians work to enhance access to care and to instill a welcoming environment for all patients, with a strong emphasis on respect for cultural differences in the delivery of care.

Pediatric hospital care is evolving in ways similar to hospital care more generally, with the most complex care being provided at the urban quaternary center and most other care being delivered in outpatient settings, ideally in the community. For example, in 2019, 48.1% of Boston Children's care was provided in outpatient settings. While Boston Children's provides a full spectrum of pediatric care, the focus of the Proposed Project (as defined herein) is to increase access to highly specialized, complex pediatric care for all Massachusetts residents. Traveling to the Longwood medical area ("Longwood Medical Area") presents a challenge for, if not an outright barrier to, families seeking ambulatory procedures. This application seeks a determination of need for several projects that will allow the Hospital to deliver specialized pediatric care to patients in more accessible locations. In doing so, the Applicant seeks to provide care to patients and offer services, such as pediatric imaging specialists and subspecialists, not generally available from providers that typically treat adults, including in freestanding ambulatory surgery centers or general hospital surgical centers. Patient panel data and patient and referring provider feedback make clear that making pediatric ambulatory care available as proposed reduces barriers to access across multiple dimensions for patients and their families—reducing financial barriers such as parking and transportation costs, which can be material barriers to obtaining care downtown; reducing time away from work and school; and providing improved physical access and more easily navigated spaces. As the COVID-19 pandemic

demonstrated that capacity constraints continue to challenge pediatric care in Massachusetts, Boston Children's looks to expand access to patients who currently cannot access needed services in a timely fashion.

Unlike other Massachusetts academic medical centers that provide some pediatric services as part of their continuum of care, Boston Children's provides a full continuum of pediatric care across all disease types. The Hospital provides highly specialized pediatric care to patients with conditions that often could not have been prevented. Timely intervention and ongoing supportive care help children become the healthiest adults they can be. The Hospital has pioneered treatment techniques that reduce the amount and intensity of care required—*e.g.*, utilizing pediatric regional anesthesia that allows surgery to proceed without a general anesthetic and utilizing pain management techniques such as disposable indwelling catheters that allow children to return home the day of surgery, avoiding an inpatient hospital stay—and that seek to promote lifelong health—*e.g.*, implementing radiology protocols and specialized pediatric MRI capabilities to avoid the need for children to receive ionizing radiation from X-ray. In short, Boston Children's believes that the right care, at the right place can lead to healthier kids who grow into healthier adults.

* * *

Attachment 2

Project Description

Project Description

The Applicant has filed the Determination of Need Application (this "Application") in connection with the following projects (collectively, the "Proposed Project"):

- Renovation and equipping of approximately 78,395 gross square feet of space within the Hospital's existing facility at 9 Hope Avenue, Waltham, MA 02453 (the "Waltham Facility") and the expansion of clinical areas, including existing infusion, sleep disorders, radiology, and behavioral health services, including the establishment of a medical-psychiatric ("med-psych") partial hospitalization program;
- Land acquisition, construction, fit-out, and equipping of an approximately 224,000 gross square foot facility zoned for pediatric medical use at 380 First Avenue in Needham, MA 02492 (the "Needham Facility"), to include eight operating rooms ("ORs") dedicated to ambulatory surgery services, as well as hospital outpatient space to include phlebotomy, physical and occupational therapy, ophthalmology, and diagnostic radiology, including one magnetic resonance imaging system (an "MRI");¹ and
- Leasing, construction, fit-out, and equipping of approximately 33,862 gross square feet within a building located at 200 Libbey Parkway in Weymouth, MA 02188 (the "Weymouth Facility") to accommodate diagnostic and therapeutic hospital services including audiology, speech therapy, vision function testing, phlebotomy, echocardiography and radiology, including one MRI.²

The renovation of the Waltham facility and the development of the Needham Facility are part of a coordinated strategy to consolidate ambulatory clinical capacity in a cost-effective manner, and each such component of the Proposed Project as set forth above is not separable and depends on the approval of each other component. *See* Factor 5. The proposed project will also be designed using sustainability and energy conservation principles, with a target of LEED silver at a minimum. The maximum capital expenditure for the Proposed Project is estimated to be \$434,691,000.

* * *

¹ The Needham Facility does not fall within the service area of any community hospital as per 105 CMR 100.715(B)(2)(b).

² Such diagnostic and therapeutic hospital services will be co-located with physician office space that will house offices relocated from 541 Main Street in Weymouth, the lease for which space is expiring in 2024.

Attachment 3

Narrative Responses to Factors 1, 2 and 5

Factor 1: Applicant Patient Panel Need, Public Health Values and Operational Objectives

F1.a.i Patient Panel:

Describe your existing Patient Panel, including incidence or prevalence of disease or behavioral risk factors, acuity mix, noted health disparities, geographic breakdown expressed in zip codes or other appropriate measures, demographics including age, gender and sexual identity, race, ethnicity, socioeconomic status and other priority populations relevant to the Applicant's existing patient panel and payer mix.

General Description of Statewide Patient Panel

As the Commonwealth's only dedicated pediatric care delivery system, the Applicant has a consistently diverse, statewide Patient Panel.³ *See* Table 1, below. The Patient Panel grew by 13,153 between 2017 and 2019, a 6.1% increase.⁴ Visits by Massachusetts patients increased by 38,856, or 7.1%, during the same period. *See* Table 2, below. Reflecting the Hospital's commitment to health equity and access to care, the Medicaid payor mix has increased from 36% in 2017 to 38.2% in 2019.⁵ *See* Table 3, below.

Geographic Breakdown of Patient Panel by Health Service Area ("HSA")

Just over 80% of Massachusetts patients reside outside of the HSA 6 (Boston), with a third of the patients residing in HSA 4 (Metro West).⁶ *See* Table 1, below. This has remained consistent over time. Accordingly, growth in patient visits mostly is attributed to patients residing outside of the Boston HSA, with much of the growth attributable to the Metro West HSA (12.4%), Central HSA (12.5%), and Western HSA (19.8%). *See* Table 2.

Disease Burden and Risk Factors

The demographic characteristics, behavioral risk factors, health disparities of the Applicant's patient panel are those of the Commonwealth's families. As reported by the American Academy of Pediatrics, 21.1% of children in the Commonwealth have special health care needs.⁷ The Proposed Project is expected to provide space for hospital services that ultimately support increased community access to pediatric sub-specialty care, including gastroenterology, ophthalmology, orthopedics, and psychiatry, for which care can be safely and effectively provided closer to where patients reside. Visits by Boston Children's physicians in these

³ Capitalized terms not otherwise defined have the meanings ascribed to them in 105 CMR 100 (the "Regulations"). While the Hospital serves a national and international patient base, the Patient Panel data presented data includes only Massachusetts residents to best demonstrate need by a locally derived Patient Panel with respect to the Proposed Project.

⁴ Reference is made to years 2017–2019, as data for 2020 are substantially skewed by the effect of the COVID-19 pandemic. While COVID-19 has resulted in a short-term reduction in utilization, and while the impact on the Commonwealth's children is not yet known, the Hospital expects utilization will return to pre-pandemic levels.

⁵ Unless otherwise noted, the Hospital's records are the source of financial, utilization, and patient panel data in this Application.

⁶ *See* Massachusetts Executive Office of Health and Human Services Regions, https://matracking.ehs.state.ma.us/eohhs_regions/eohhs_regions.html

⁷ *See* Pediatric Subspecialty Shortages Fact Sheets, American Academy of Pediatrics, https://downloads.aap.org/AAP/PDF/Advocacy/Massachusetts_SubspecialtyFactSheet.pdf

specialties accounted for approximately a third of visits in 2019. *See* Table 4. While there is limited data on the disease burden among Massachusetts pediatric patients, this data is reflective of the prevalence of disease. Further, patients residing in HSA 4, where the Proposed Project is located, accounted for a third of visits in 2019 for ambulatory surgery and MRIs. *See* Table 3. The Proposed Project will make such advanced pediatric specialty care more accessible to medically complex pediatric patients and their families, who would otherwise need to travel to the Longwood Medical Area for ambulatory services.

Boston Children's Massachusetts Patient Panel

Table 1. Demographics and Patient Origin

	FY17		FY18		FY19		FY20	
	Count	%	Count	%	Count	%	Count	%
Total (unique pts)	216,189		219,857		229,342		209,610	
Gender								
Female	107,754	49.8%	109,409	49.8%	114,297	49.8%	105,119	50.1%
Male	108,413	50.1%	110,426	50.2%	115,025	50.2%	104,456	49.8%
Unknown	22	0.0%	22	0.0%	20	0.0%	35	0.0%
Age								
0-2 years	41,126	19.0%	41,792	19.0%	43,311	18.9%	39,599	18.9%
3-5 years	28,796	13.3%	29,300	13.3%	30,606	13.3%	27,543	13.1%
6-10 years	45,770	21.2%	45,583	20.7%	47,605	20.8%	42,386	20.2%
11-15 years	48,420	22.4%	49,285	22.4%	51,807	22.6%	46,884	22.4%
16-18 years	25,317	11.7%	26,090	11.9%	27,457	12.0%	26,020	12.4%
19+ years	26,760	12.4%	27,807	12.6%	28,556	12.5%	27,178	13.0%
Race/Ethnicity*								
Asian, non-Hispanic	7,042	4.2%	7,113	4.2%	7,049	4.2%	6,200	4.1%
Black, non-Hispanic	17,564	10.5%	17,322	10.3%	17,343	10.2%	15,040	10.0%
Hispanic	26,188	15.6%	26,576	15.9%	27,469	16.2%	24,531	16.3%
White, non-Hispanic	102,492	61.1%	101,566	60.7%	102,572	60.4%	91,079	60.5%
Other, non-Hispanic	12,087	7.2%	12,450	7.4%	12,734	7.5%	11,561	7.7%
Multiracial, non-Hispanic	2,381	1.4%	2,352	1.4%	2,644	1.6%	2,173	1.4%
Patient Origin								
HSA_1: Western MA	3,646	1.7%	3,834	1.7%	4,153	1.8%	3,794	1.8%
HSA_2: Central MA	12,896	6.0%	13,073	5.9%	14,123	6.2%	12,784	6.1%
HSA_3: Northeast	39,537	18.3%	40,184	18.3%	41,660	18.2%	38,262	18.3%
HSA_4: Metro West	73,594	34.0%	74,532	33.9%	76,312	33.3%	69,264	33.0%
HSA_5: Southeast	28,677	13.3%	29,870	13.6%	32,111	14.0%	30,213	14.4%
HSA_6: Boston	42,562	19.7%	43,052	19.6%	44,850	19.6%	40,469	19.3%
Unknown	15,277	7.1%	15,312	7.0%	16,133	7.0%	14,824	7.1%

*Race/Ethnicity excludes unique patients listed as "Unknown" and therefore has a different denominator than the total count listed above.

Table 2. Annual Utilization Statistics*

	FY17		FY18		FY19	
	Count	%	Count	%	Count	%
Total Ambulatory Visits	545,252		555,374		584,108	
HSA_1: Western MA	9,632	1.8%	10,507	1.9%	11,541	2.0%
HSA_2: Central MA	33,573	6.2%	34,161	6.2%	37,785	6.5%
HSA_3: Northeast	96,147	17.6%	96,601	17.4%	100,217	17.2%
HSA_4: Metro West	168,062	30.8%	174,660	31.4%	177,837	30.4%
HSA_5: Southeast	70,250	12.9%	73,550	13.2%	78,936	13.5%
HSA_6: Boston	137,123	25.1%	134,112	24.1%	144,035	24.7%
Unknown	30,465	5.6%	31,783	5.7%	33,757	5.8%
Ambulatory Surgeries	17,118		17,705		18,275	
HSA_1: Western MA	397	2.3%	418	2.4%	496	2.7%
HSA_2: Central MA	1,573	9.2%	1,662	9.4%	1,686	9.2%
HSA_3: Northeast	3,362	19.6%	3,513	19.8%	3,584	19.6%
HSA_4: Metro West	5,670	33.1%	5,815	32.8%	5,924	32.4%
HSA_5: Southeast	2,926	17.1%	2,937	16.6%	3,248	17.8%
HSA_6: Boston	2,055	12.0%	2,191	12.4%	2,144	11.7%
Unknown	1,135	6.6%	1,169	6.6%	1,193	6.5%
MRI Encounters	14,789		14,845		15,239	
HSA_1: Western MA	443	3.0%	482	3.2%	525	3.4%
HSA_2: Central MA	1,250	8.5%	1,230	8.3%	1,376	9.0%
HSA_3: Northeast	2,820	19.1%	2,817	19.0%	2,824	18.5%
HSA_4: Metro West	5,433	36.7%	5,431	36.6%	5,403	35.5%
HSA_5: Southeast	2,081	14.1%	2,112	14.2%	2,300	15.1%
HSA_6: Boston	1,856	12.5%	1,846	12.4%	1,859	12.2%
Unknown	906	6.1%	927	6.2%	952	6.2%

* Includes Boston Children's faculty physician office visits in non-licensed space.

Table 3. Payor Mix*

	FY17	FY18	FY19	FY20
Medicaid	36.0%	37.7%	38.2%	39.8%
All Other	64.0%	62.3%	61.8%	60.2%

Payor mix based on percentage of total charges.

Table 4. Visits by Specialty*

	FY17		FY18		FY19	
	Count	%	Count	%	Count	%
Total Visits	545,252		555,374		584,108	
Gastroenterology	31,791	5.8%	32,156	5.8%	31,845	5.5%
Ophthalmology	35,771	6.6%	36,584	6.6%	39,992	6.8%
Orthopedics	85,944	15.8%	88,513	15.9%	93,148	15.9%
Psychiatry	21,121	3.9%	23,071	4.2%	27,663	4.7%
All Other	370,625	68.0%	375,050	67.5%	391,460	67.0%

* Includes Boston Children's faculty physician office visits in non-licensed space.

F1.a.ii Need by Patient Panel:

Provide supporting data to demonstrate the need for the Proposed Project. Such Data should demonstrate the disease burden, behavioral risk factors, acuity mix, health disparities, or other objective Patient Panel measures as noted in your response to Question F1.a.i that demonstrates the need that the Proposed Project is attempting to address. If an inequity or disparity is not identified as relating to the Proposed Project, provide information justifying the need. In your description of Need, consider the principles underlying Public Health Value (see instructions) and ensure that Need is addressed in that context as well.

Improving Access Beyond Boston

Boston Children’s views the Waltham Facility, Needham Facility, and Weymouth Facility as “gateways to access” that allow patients to receive needed pediatric specialty care without traveling to the Longwood Medical Area. In 2019, a third of the Applicant’s patients resided in HSA 4 where the Proposed Project will be located. *See* Table 1. Through regular interactions with patients and referring physicians, including focus groups held in the community, the Hospital knows that providing care at access points outside Boston can meaningfully reduce barriers to care—from the time and expense of transportation into the city, to easier physical access to space with wider and smoother parking lots and sidewalks, to smaller, less congested, and more easily navigated hospital spaces. These barriers may be more acute in the pediatric context, where treatment necessarily involves family members as well.

This is reflected in the Patient Panel Data as well. Table 5 shows the number of visits by pediatric population (*i.e.*, visits per 1,000 pediatric population) by HSA. While there is no reason to expect that the disease burden or need for the specialized pediatric care provided by the Hospital varies across HSAs, the data reflect that patients outside of Boston face increased burdens accessing care from Boston Children’s due to geographic barriers.

Table 5. Ambulatory Visits Per 1,000 Pediatric Population*

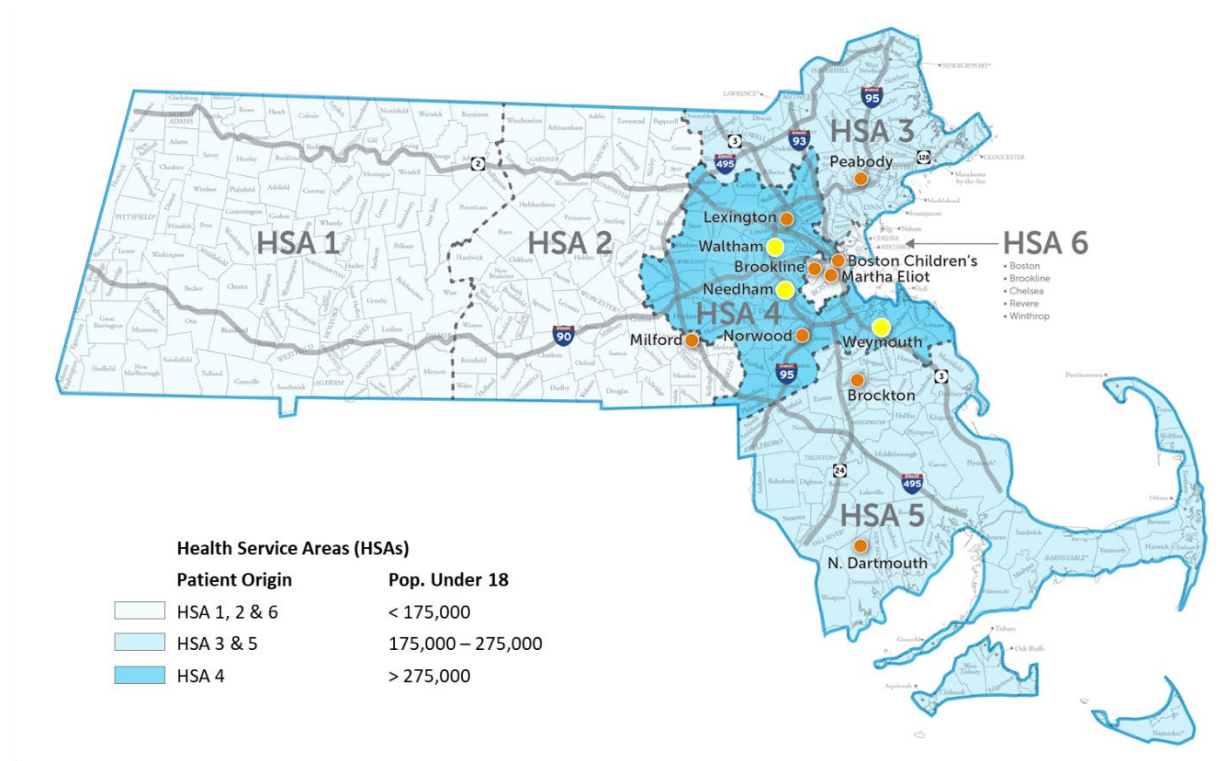
	FY17	FY18	FY19
Total Visits	420.1	441.3	461.1
HSA 1: Western MA	63.3	73.3	81.4
HSA 2: Central MA	178.2	196.8	217.7
HSA 3: Northeast	348.0	354.7	360.3
HSA 4: Metro West	542.9	572.0	580.1
HSA 5: Southeast	313.6	347.6	373.9
HSA 6: Boston	930.1	879.7	926.4

* Includes physician office encounters in non-hospital space.

Source: 2017-2019 Pediatric Population from Trueven/Market Report

The Applicant has positioned the Proposed Project as a “gateway to access,” with locations near major highway transportation routes, increasing accessibility to services for the Hospital’s patients residing in surrounding HSAs as well, as seen in the map below. Further, the Applicant has designed the Proposed Project with the accessibility concerns of its patients and their families in mind. In response, the Applicant has selected locations that provide ample parking accessible to children with mobility impairments and has addressed space needs through new construction and renovation of facilities. Furthermore, the Proposed Project will co-locate multi-

disciplinary services, allowing patients the ability to receive a continuum of care in one accessible location.



In siting the Proposed Project along major transportation routes, the Applicant intends to increase accessibility particularly to nearby underserved communities, including Brockton, Framingham, Quincy and Randolph. As shown in Table 6, pediatric patients in these communities made up 4.7% of Boston Children’s visits in 2019. However, only 23% of ambulatory care for these pediatric patients was delivered at a satellite location easily accessible to the residents of these communities in 2019. See Table 7. The Proposed Project locations will make Boston Children’s highly specialized pediatric care more accessible to the pediatric population in these underserved communities.

Table 6. Visits by Community*

	FY17	FY18	FY19
Total Community Visits (as % of Boston Children’s Total Visits)	25,327 (4.6%)	25,314 (4.6%)	27,224 (4.7%)
Brockton	7,567	7,921	8,581
Framingham	5,620	5,359	6,075
Quincy	7,893	7,638	8,317
Randolph	4,247	4,396	4,251

* Includes physician office encounters in non-hospital space.
Source: Boston Children’s internal data.

Table 7. 2019 Visits Delivered at a Local Satellite*

	Visits	% of Total Visits
Total	5,515	23%
Brockton	1,351	18%
Framingham	2,358	41%
Quincy	1,422	19%
Randolph	384	10%

* Includes physician office encounters in non-hospital space. Local Satellites for Brockton, Quincy, and Randolph are Good Samaritan Medical Center and the Applicant's Weymouth facility, while Local Satellites for Framingham are the Applicant's Lexington and Waltham facilities.

Source: Boston Children's internal data.

The Proposed Project is relocating existing capacity rather than simply adding capacity. For example, the Hospital intends to consolidate day surgery volume at the Waltham Facility and Needham Facility and reduce day surgeries at its Lexington location, resulting in a net increase of two ORs.⁸ More generally, the Applicant seeks to transition less acute pediatric specialty care and day surgery from the capacity-constrained Longwood campus to community locations that are less costly to operate and more accessible to patients.

Need for Expanded Pediatric Behavioral Health Capacity in the Community

The Commonwealth is facing a well-known crisis in pediatric behavioral health, significantly exacerbated by the COVID-19 pandemic. The COVID-19 pandemic has resulted in greater need for access to inpatient adolescent and pediatric psychiatric services due to quarantine orders, remote learning and destabilization of families.⁹ Compared with 2019, the proportion of mental health-related visits for children aged 5-11 and 12-17 years increased approximately 24% and 31%, respectively.¹⁰

To meet this need, the Hospital currently operates clinically integrated programs in multiple locations and across the continuum of care, from inpatient psychiatric and psychiatric emergency care, to community-based acute treatment ("CBAT"), outpatient programs, and school-based programs and supports. At the Waltham Facility, the Hospital currently operates outpatient behavioral health programs, a CBAT program, and will be adding a 12-bed inpatient adolescent and pediatric psychiatric unit.¹¹ To further meet the needs of patients and families, the Proposed Project will allow the Hospital to add a med-psych partial hospitalization program at the Waltham Facility. The program will provide pediatric patients with intensive behavioral health

⁸ The four ORs in Lexington are operated jointly with Beth Israel Deaconess Medical Center under an existing arrangement approved by the Department of Public Health.

⁹ See Karen Dineen Wagner, MD, PhD, New Findings About Children's Mental Health During COVID-19, *Psychiatric Times* (October 7, 2020), <https://www.psychiatrictimes.com/view/newfindings-children-mental-health-covid-19>.

¹⁰ See Leeb RT, Bitsko RH, Radhakrishnan L, Martinez P, Njai R, Holland KM. Mental Health- Related Emergency Department Visits Among Children Aged < 18 Years During the COVID-19 Pandemic - United States, January 1-October 17, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1675-1680. DOI: [http://dx.doi.org/10.15585/mmwr.mm6945a3external icon](http://dx.doi.org/10.15585/mmwr.mm6945a3external%20icon).

¹¹ See Determination of Need Approval Related to COVID-19 Letter from Lara Szent-Gyorgyi to Donna Casey dated January 15, 2021.

services during the day and allow patients to return home in the evening, enhancing the Applicant's continuum of care for behavioral health.

The Applicant also engaged Bailit Health to perform an evidence-based assessment of its Patient Panel need (the "Bailit Report"). Among other findings, Bailit Health noted that the Proposed Project, together with the 12-bed inpatient adolescent and pediatric psychiatric unit added to the Waltham location, address a current emergency department boarding census that "consistently approaches 60 patients," and will support additional pediatric specialty med-psych services for children with comorbid behavioral health conditions, present in 13.2% of pediatric hospitalizations. For additional information on our community-oriented behavioral health initiatives, see Factor 6 response included as Attachment 6.

Need for Enhanced Access to Medical Specialties with Integrated Habilitative Behavioral Health Supports

Many of the children and families referred to Boston Children's are living with multiple chronic conditions. Managing that medical complexity through specialized and interdisciplinary pediatric care teams is vital to maintaining and improving health outcomes and quality of life.¹² This is particularly true in gastroenterology, where the Hospital's cares for approximately 18,000 unique patients annually, approximately 8% of whom suffer from inflammatory bowel disease ("IBD") and are at high risk for depression.¹³ The Proposed Project will provide space to support an integrated and cross-disciplinary approach to care, incorporating behavioral health supports, physical therapy, and occupational therapy as an integral part of the ambulatory care pathway. It will also address capacity needs, as the Bailit Report notes that pediatric gastroenterology services are currently in limited supply in Massachusetts, resulting in long wait times for pediatric patients. In addition, the planned med-psych partial hospitalization program is envisioned to treat conditions such as somatic symptom and related disorders, eating disorders, and chronic medical illnesses (diabetes, seizures, etc.) complicated by psychiatric conditions like depression, anxiety, or non-adherence (commonly experienced by youth ages 12-17 years).

Day Surgery Services

The day surgery programs planned for the Waltham Facility and the Needham Facility are part of a single coordinated plan to better address the unique surgical needs of pediatric patients. In 2019, approximately 88% of day surgery visits were by patients residing outside of Boston, with patients residing in the Metro West HSA accounting for nearly a third of the visits. *See* Table 2, above. The Waltham Facility and the Needham Facility will thus increase accessibility for Metro West HSA patients, but also for patients residing in the surrounding HSA regions given the locations along major transportation corridors. As described above, these settings will reduce barriers for patients and their families and improve access to the Applicant's specialized pediatric services.

¹² Comorbid behavioral health conditions are present in 13.2% of pediatric hospitalizations.

¹³ For example, for patients with inflammatory bowel disease ("IBD"), a chronic inflammatory disorder of the digestive tract, depression rates as high as 25% have been reported in adolescent patients.

Pediatric surgical care is different from adult care in meaningful ways, *i.e.* differences in body size and shape, mental and behavioral abilities, and dependence on family and caregivers. This is particularly true with respect to pediatric anesthesia. For example, the Hospital is a pioneer in pediatric regional anesthesia—*i.e.*, selective “blocking” or numbing of extremities, whole body parts or body zones—that allows surgery to proceed without a general anesthetic, reduces opiate exposure, and increases surgical efficiency. In cases when general anesthesia is necessary, care is delivered by specifically trained pediatric anesthesiologists. In addition, the Hospital's pediatric specialists utilize pain management techniques such as sending patients home with indwelling regional catheters that continually infuse local anesthetic drugs, converting two- to three-day inpatient stays into day surgeries that can be performed in the community. Continued innovation is expected to allow more surgical cases to be handled as day surgeries.

Imaging Services

Pediatric-focused MRI has become a central tool in diagnosis, surgical management, and treatment efficacy assessment for a large number of conditions across much of the pediatric disease spectrum. Over the last several years, the Applicant has made a concerted effort to transition pediatric scanning away from modalities that use ionizing radiation (*e.g.* computerized tomography (“CT”) scans) towards those that do not (*e.g.* MRIs). For example, clinical indications that have shifted towards MRI include imaging of children with new onset of seizures, newborns in need of neuroimaging, imaging of children with IBD, and imaging of children with appendicitis. For children in particular, this shift reduces their lifetime dose of ionizing radiation. Further, the Proposed Project will add two 3T MRI units, which allow for faster scans and higher image resolution than more commonly used machines in the community.

The MRI needs of pediatric patients are unique: MRI coils designed to fit smaller bodies and bodies of different body shapes and locations across a range of patients from infants to adult-sized adolescents; customized motion-correction software that compensates for pediatric patients unable to stay still; availability of behavioral health staff able to manage the needs of children with behavioral health challenges. Through this specialized equipment and pediatric tailored protocols, the Hospital can reduce the need for anesthesia and avoid the need for repeat studies. For example, in an internal review of repeat imaging studies, the Hospital found that 84% of pediatric patients who received an MRI for epilepsy in the community needed to have a repeat MRI prior to assessment and treatment at the Hospital due to the outside exam providing insufficient detail to assess for a potentially surgically treatable lesion. Given the significant variation in conditions, including congenital conditions, present for pediatric patients as compared to adult patients, and the unique challenges to interpreting MRI scans for pediatric patients, higher resolution imaging and specialized radiology training are necessary.

There are limited dedicated pediatric MRI options in the community outside of those at existing Hospital satellite locations, and the Applicant is the primary source of pediatric imaging specialists and subspecialists in the Commonwealth. Thus, pediatric patients in need of MRI have to choose whether to undergo imaging at adult-focused facilities which may be closer and more accessible to them, or traveling for an exam at an existing Hospital location. The Proposed Project will add two MRI units in HSA 4, which accounted for a third of the Applicant's MRI encounters in 2019. *See* Table 2. Thus, siting the proposed MRI units at the Weymouth Facility

and the Needham Facility will enhance access to pediatric-focused MRIs in the community and satisfy existing and future Patient Panel needs.

Need for Other Pediatric Specialty Care

The Applicant has also observed a need for enhanced community access to certain other pediatric specialties as well, with the Proposed Project siting such services in a community setting rather than at the Longwood Medical Area. For example, the Bailit Report found that the Proposed Project's planned expansion of ophthalmology care in the community will improve health equity for children in low-income and minority communities, for which services are limited. Lowering barriers and improving access to pediatric ophthalmology is expected to reduce preventable vision loss in the pediatric population—which also facilitates school performance for children who are better able to see whiteboards and blackboards. The Hospital's Ophthalmology Department's retrospective review of referrals between January 2016 and March 2020 for children with non-traumatic ophthalmic emergencies found that 16.7% of referrals had a lag time greater than seven days between appointment request and clinic date in children less than 8 years old. The Proposed Project will expand ophthalmology services with the Needham Facility, and seek to address these lag times. Additionally, the Proposed Project will facilitate expansion of pediatric sleep services for the only pediatric sleep program in New England, addressing the need for a child in the Commonwealth to drive as far as 94 miles for sleep medicine care as reported by the American Academy of Pediatrics.¹⁴ As the Bailit Report notes that up to 50 percent of children have a sleep disorder, the Proposed Project will provide greater access pediatric sleep services to communities that typically have limited access to such care. The Applicant anticipates that providing these services in the community setting will improve access for its patients requiring specialized pediatric care.

F1.a.iii Competition:

Provide evidence that the Proposed Project will compete on the basis of price, total medical expenses, provider costs and other recognized measures of health care spending. When responding to this question, please consider Factor 4. Financial Feasibility and Reasonableness of Costs.

The Applicant believes that the Proposed Project will be competitive in the market given the specialized nature of the pediatric services it provides. The Hospital's contracted third party rate increase has not exceeded the cost growth benchmark in any year since the adoption of Chapter 224, consistent with the conditions set forth in the Applicant's DoN Project #4-3C47 approval letter dated October 27, 2016. The Applicant provides highly specialized pediatric services that are qualitatively different from adult services offered by other health systems or community hospitals. Furthermore, these capabilities are not widely available in the community, as a recent JAMA Pediatrics article noted that, with the exception of four outlier academic medical centers, most hospitals in the Commonwealth were able to provide care for less than 40% of all pediatric patients that presented in their emergency departments.¹⁵ Additionally, the Applicant received approximately 500 transfers in 2019 from academic medical centers in the Commonwealth for

¹⁴ See Pediatric Subspecialty Shortages Fact Sheets, American Academy of Pediatrics, https://downloads.aap.org/AAP/PDF/Advocacy/Massachusetts_SubspecialtyFactSheet.pdf

¹⁵ See "Availability of Definitive Hospital Care for Children," JAMA Pediatrics (published online July 10, 2017).

care that such centers were otherwise unable to provide. Thus, the Applicant has worked to improve access in the community through staffing other community hospitals, as well as other initiatives such as making available orthopedics consultations to reduce unnecessary emergency department visits.

The Applicant's MassHealth accountable care organization ("ACO"), the Boston Children's ACO ("BCH ACO"), serves approximately 20% of all pediatric MassHealth ACO enrollees, the highest percentage among MassHealth ACOs. It is the only statewide ACO dedicated to serving children and adolescents. As of June 30, 2020, BCH ACO membership had grown to 111,328 members. In general, BCH ACO takes on 75% of the risk for the plan. Thus, the Applicant is increasingly aligned with the Commonwealth's cost containment goals.

The Proposed Project is intended to preserve and enhance existing access to the Applicant's services in the community. For example, the Weymouth Facility is in part a relocation of services currently being provided in Weymouth by the Applicant's physicians. The consolidation of day surgery services at the Waltham Facility and the Needham Facility, as noted above, will achieve economies of scale. The Proposed Project will also support the provision of more timely, accessible, and cost-effective care for lower-acuity patients not requiring treatment at the Hospital's main campus. For the most commonly used procedures in the operating rooms and the MRI, the Hospital is competitively priced with regard to community hospitals. In addition, the Hospital's rate for MRIs is twenty percent (20%) lower than Boston rates. Furthermore, the Hospital's utilization of specialized techniques for pediatric anesthesia may lower cost of care as new regional anesthesia and catheter insertions allow children to return home immediately following invasive procedures and surgery, thus eliminating the costs of a two-day inpatient stay. The Proposed Project will expand and/or enhance access to pediatric specialty services at the Applicant's existing locations and address existing demand for pediatric-specific services, which may result in offsetting the need for other and/or additional services that would be required if clinically appropriate care were delayed.

F1.b.i Public Health Value/Evidence Based

Provide information on the evidence-base for the Proposed Project. That is, how does the Proposed Project address the Need that Applicant has identified.

As noted above in F1.a.i and F1.a.ii, the Proposed Project is intended to provide space and capacity in order to improve access for patients and their families to pediatric specialty care that can be safely and effectively provided in community settings—including, among others, pediatric behavioral health, gastroenterology, orthopedics, ophthalmology, and sleep medicine. These services by definition address both time-sensitive acute needs (like gastroenterology) and the ongoing, lifetime care need of children with chronic or congenital conditions. Among major academic medical centers ("AMCs") in Boston, Boston Children's treated 73% of the pediatric patients with cases in the top two categories of severity in 2017 and 2018 combined. Such interventions may offer a lifetime of health benefits.

The Proposed Project will add much-needed capacity closer to where more of the Applicant's patients live, as seen in Table 1 and Table 2 above, by siting locations near major transportation routes to provide "gateways to access" as mentioned above. The Applicant is currently in the

process of adding inpatient psychiatric beds at its Waltham location, and the Proposed Project will fill in the continuum of care offerings with its med-psych partial hospitalization program. The Proposed Project will address gastroenterology capabilities at the Needham Facility, which will be staffed with interdisciplinary care teams and supported by other co-located services, including behavioral health. The Needham Facility will provide a more accessible and less costly location for certain procedures currently performed in the Longwood Medical Area and will consolidate day surgery to achieve economies of scale. The Proposed Project will provide specialized pediatric MRI capabilities with the addition of two 3T MRI units that will support a more sophisticated approach to imaging, the benefits of which are more fully described above in Factor F1.a.ii. In addition, it will provide increased accessibility to other pediatric specialty services, such as sleep, ophthalmology, and physical and occupational therapy, lowering barriers to care presented by obtaining care at the Longwood Medical Area or in less optimal adult settings.

F1.b.ii Public Health Value/Outcome Oriented:

Describe the impact of the Proposed Project and how the Applicant will assess such impact. Provide projections demonstrating how the Proposed Project will improve health outcomes, quality of life, or health equity. Only measures that can be tracked and reported over time should be utilized.

The Applicant anticipates that the Proposed Project will provide its patients with improved health outcomes, quality of life and access to pediatric specialty services as more fully discussed in Factor F1.a.ii. To assess the impact of the Proposed Project, the Applicant will track the following metrics:

1. The proportion (per 1,000 patients) of children and families in non-Boston HSAs that are able to obtain the Applicant's pediatric specialty care.
2. The number of patients each year who obtain the following services in the community:
 - a. outpatient behavioral health services, including partial hospitalization;
 - b. gastroenterology services; and
 - c. specialized pediatric MRIs.
3. The number of pediatric depression screenings performed for children with gastrointestinal disorders.
4. The number of emergency department visits and hospitalizations at Boston Children's due to asthma as stratified by race.
5. The number of patients who obtain day surgery at the Waltham Facility and Needham Facility.

F1.b.iii Public Health Value/Health Equity Focused:

For Proposed Projects addressing health inequities identified within the Applicant's description of the Proposed Project's need-base, please justify how the Proposed Project will reduce the health inequity, including the operational components (e.g. culturally competent staffing). For Proposed Projects not specifically addressing a health disparity or inequity, please provide information about specific actions the Applicant is and will take to ensure equal access to the health benefits created by the Proposed Project and how these actions will promote health equity.

The Hospital anticipates that the Proposed Project will reduce health inequity and health disparity by reducing barriers children and their families outside of Boston face in obtaining world-class pediatric care. According to Boston Children's BCH ACO Briefing Book, approximately 40% of children and young adults in the Commonwealth are covered by MassHealth. The Proposed Project will provide needed services to MassHealth patients. As noted in Factor F1.a.i above, 38.2% of the Hospital's patients in 2019 received insurance coverage through MassHealth. The Applicant continues to develop and track health disparity metrics, particularly with regard to its BCH ACO. The Applicant is in the process of collecting and analyzing data regarding health disparities and access to care by race, ethnicity and language, including as it relates to population health priorities such as obesity and asthma. For example, preliminary analysis of MRI missed care opportunities by the Hospital's Office of Health Equity and Inclusion demonstrated that Black and Latino children were over 50% more likely to have missed an MRI when compared to white children, and those who live in areas of high social vulnerability were 30% more likely to have missed an MRI. With this analysis, the Hospital began a study to determine if transportation barriers present the primary problem. The Proposed Project's addition of two MRI units is an intervention targeted at reducing missed MRIs by making them more accessible in the community.

At the Proposed Project locations, and consistent with all of the Applicant's facilities, the Applicant will make available interpreters in more than 35 languages to assist patients and families through Interpreter Services. In 2020, the BCH ACO launched an interpreter services pilot program that is currently spreading to all primary care practices, providing culturally and linguistically appropriate services. The Hospital continues to examine barriers to access faced by patients and their families, particularly with regard to transportation to appointments and language access as solicited through community engagement forums.

In addition, the Applicant continues its efforts to promote health equity by making training and work experience available to underrepresented groups, engaging in local hiring and workforce development that reflects the surrounding community. Studies have shown that clinical care outcomes for underrepresented minorities may benefit from patient-physician concordance.¹⁶ The Hospital's "Building Careers in Health and STEM" program is a career pipeline program for high school students with the goal of increasing the number of underrepresented minority and/or first-generation prospective college students in health-related careers, including nursing. The Hospital's COACH (Community, Opportunities, and Advancement at Children's Hospital)

¹⁶ See Physician-patient racial concordance and disparities in birthing mortality for newborns, Brad N. Greenwood, Rachel R. Hardeman, Laura Huang, Aaron Sojourner, Proceedings of the National Academy of Sciences Sep 2020, 117 (35) 21194-21200; DOI: 10.1073/pnas.1913405117

Internship Program also places Boston-area high school students in positions in clinical and administrative areas across the Hospital and provides professional development workshops. Furthermore, the Hospital administers a program that employs undergraduate pre-medical students from backgrounds underrepresented in medicine as medical scribes with faculty mentorship. As part of Boston Children's, the Proposed Project facilities will further support these initiatives to promote health equity.

In 2020, the Hospital's leaders released a Declaration on Equity, Diversity, and Inclusivity, establishing six goals that prioritize health equity, which will apply to the Proposed Project. Among the stated goals, the Hospital committed to an inclusive environment, a diverse workforce, eliminating structural racism, advancing culturally effective pediatric care delivery, eliminating child health disparities, and developing and tracking metrics for equity, diversity, and inclusion. Furthermore, the Hospital takes part in national collaborations to advance health equity and close health care disparities, including with the Pediatric Health Equity Collaborative and Solutions for Patient Safety.

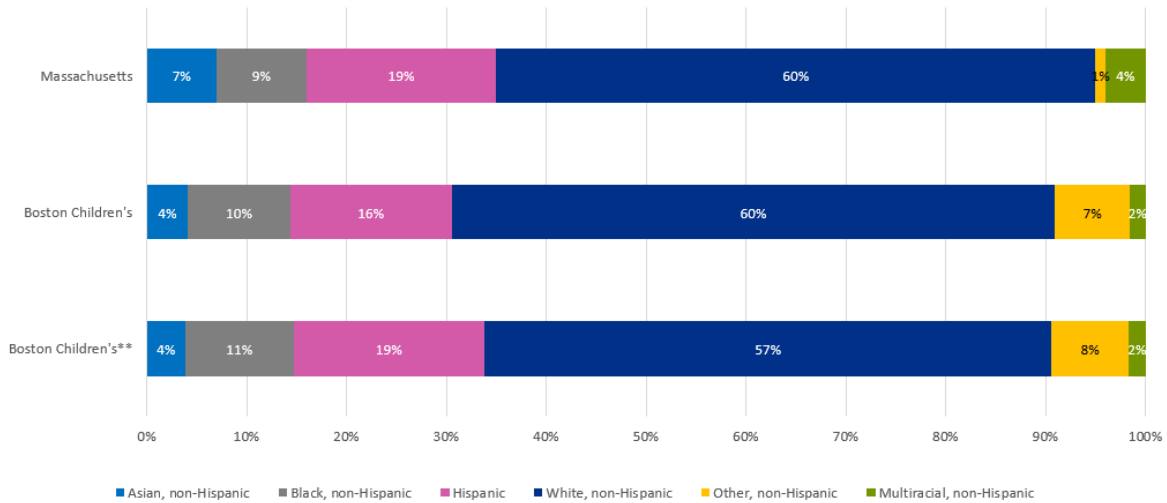
F1.b.iv Public Health Value/Health Equity Focused:

Provide additional information to demonstrate that the Proposed Project will result in improved health outcomes and quality of life of the Applicant's existing Patient Panel, while providing reasonable assurances of health equity.

The Proposed Project aims to expand timely access to certain pediatric specialty services, including behavioral health, ambulatory surgery, and radiology. By co-locating its multi-disciplinary services in the community, the Proposed Project will further coordination of care efforts at locations that may be more accessible to patients and their families. The Applicant anticipates that enhanced access to these services will allow for timely treatment, which may result in fewer complications and thus improved health and quality of life outcomes. For example, the Applicant's Growth & Nutrition Program at the Needham Facility will expand access to lower income families of diverse backgrounds without the barrier of traveling to the Longwood Medical Area.

The Applicant will continue to promote health equity and access to its specialized pediatric services, consistent with its ongoing efforts. The Applicant's Patient Panel is that of the Commonwealth, including with respect to race and socioeconomic status as demonstrated in the charts below. This is true across the Applicant's locations, and the Applicant expects it to be true at the facilities involved in the Proposed Project. Increasing the accessibility of pediatric specialty care, including at community settings that are easy to travel to, navigate, and park at, should serve to reduce health disparities and improve health equity.

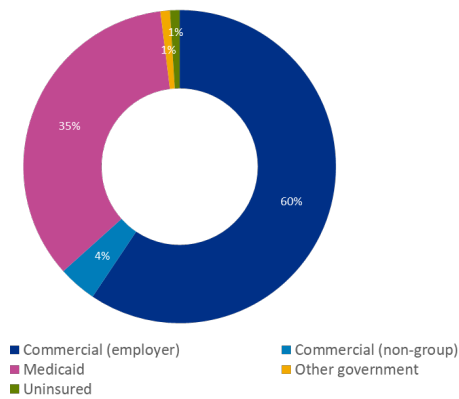
Race/ethnicity data for Massachusetts children (2019) and Boston Children's Massachusetts patients (FY19)



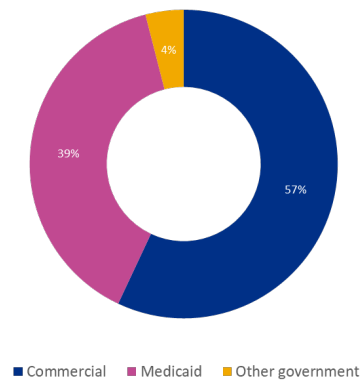
Sources: 2020 KIDS COUNT Data Book, Annie E. Casey Foundation; Boston Children's internal data
 Note: The first two bars (Massachusetts and Boston Children's) represent census/unique patient data.
 **This Boston Children's bar represents patient encounter data.

Health insurance coverage for Massachusetts children overall and Boston Children’s patients

Payor mix for Massachusetts children age 0-18 (2019)



Payor mix for Boston Children's Massachusetts patients (FY19)



F1.c

Provide evidence that the Proposed Project will operate efficiently and effectively by furthering and improving continuity and coordination of care for the Applicant’s Patient Panel, including, how the Proposed Project will create or ensure appropriate linkages to patients’ primary care services.

The Proposed Project will enhance community access to the Applicant’s integrated pediatric delivery system comprising pediatric inpatient medical and surgical care, intensive care and neonatal intensive care, emergency services, and more than 150 ambulatory programs and services. The Applicant provides primary care services directly, through the primary care

alliance, and through BCH ACO. Primary care is provided directly at its primary care center, Childrens Hospital Primary Care Center, and through the PPOC, a network of more than 400 licensed health care professionals devoted exclusively to pediatric primary care in collaboration with Hospital specialists. The BCH ACO, with over 500 primary care providers at over 100 locations across the Commonwealth, provides primary care services for nearly 20% of all children and young adults enrolled in ACOs.

The Applicant engages with various community health partners and network affiliates, as seen below, in order to provide its specialized pediatric services to patients and their families.

Boston Children’s Satellite & Physician Office locations	Primary Care/Specialty Network Affiliations	Community Health Center Partners	Community Hospital Staffing Partnerships	Alliances & Specialty Services Arrangements
Main Campus in Boston’s Longwood Medical District	PPOC—Pediatric Physicians’ Organization at Children’s	Bowdoin Street Community Health Center	Beth Israel Lahey Health (Beverly, Winchester)	Catholic Medical (NH) Connecticut Children’s (CT)
Martha Eliot Community Health Center	Atrius Health	Brookside Community Health Center	Cape Cod (eff. 7/2021) (*)	Dana-Farber Cancer Institute (Joint Program)
Boston Children’s at Lexington	Lahey Clinical Performance Network (LCPN)	Charles River Community Health Center	Milford Regional	Baystate Medical Center
Boston Children’s at North Dartmouth	Mt Auburn/Cambridge IPA (MACIPA)	Dimock Center	Southcoast Health (Fall River, New Bedford, Wareham)	Beth Israel Deaconess Med Center
Boston Children’s at Peabody		East Boston Community Health Center	South Shore (Weymouth)	Boston Medical Center
Boston Children’s at Waltham	South Shore Medical Center	Mattapan Community Health Center		Brigham and Women’s
Boston Children’s Physicians Brockton	South Shore PHO	South Cove Community Health Center		Dartmouth-Hitchcock (NH)
Boston Children’s Physicians Milford		South End Community Health Center		Elliot Hospital (NH)
Boston Children’s Physicians Norwood		Southern Jamaica Plain Community Health Center		Franciscan Children’s
Boston Children’s Physicians Weymouth		Upham’s Corner Community Health Center		Hasbro Children’s/Lifespan (RI)
		Whittier Street Community Health Center		Maine Medical Center (ME)
				Mass Eye & Ear Institute
				Massachusetts General Hospital
				UMass Memorial Medical Center
				University of Vermont Med Center (VT)

(*) Pending Health Policy Commission approval.

Through the Proposed Project, the Hospital will continue to implement its coordinated and integrated care models. It will co-locate multi-disciplinary services, including through integration of behavioral health services throughout departments. It is also intended to increase the availability of same-day coordinated care in the community, and improve the ability of families to schedule multiple appointments with care team members on the same day at the same location (also helping to reduce missed school days).

F1.d

Provide evidence of consultation, both prior to and after the Filing Date, with all Government Agencies with relevant licensure, certification, or other regulatory oversight of the Applicant or the Proposed Project.

Throughout the planning and development of the Proposed Project, the Hospital has sought, and continues to seek, discussions with individuals at various regulatory agencies within the Commonwealth. The following individuals are some of those with whom the Applicant has consulted regarding the Proposed Project:

- Executive Office of Health and Human Services: Marylou Sudders and Lauren Peters, Esq.
- Department of Public Health and Office of Health Equity: Lynn Conover, Lucy Clarke, Nazmim Bhuiya, Lara Szent-Georgi, Ben Wood, Jennica Allen, and Rebecca Rodman, Esq.

- Health Policy Commission: David Seltz, Stuart Altman, Lois Johnson, Esq., Kate Mills, Esq.
- Massachusetts Attorney General's Office: Maura Healey, Esq., Mary Freeley, Esq., Eric Gold, Esq., Gabrielle Viator, Esq., Caitlin Cosman, Jacob Kemp and Sandra Wolitzky, Esq.
- MassHealth: Amanda Cassel-Kraft
- Department of Mental Health: Brook Doyle

F1.e.i Process for Determining Need/Evidence of Community Engagement

For assistance in responding to this portion of the Application, Applicant is encouraged to review Community Engagement Standards for Community Health Planning Guideline. With respect to the existing Patient Panel, please describe the process through which Applicant determined the need for the Proposed Project.

The Hospital, through its Board of Directors, engaged in a multi-year planning process in connection with the Proposed Project. As a part of that process, Boston Children's has consulted with senior physician leaders, state and local agencies and officials, including local health departments, other providers and provider organizations, community groups, specialty disease and advocacy groups, and patient groups. In conducting local outreach, the Hospital, with assistance from Bailit Health, utilized Census data to identify target communities for community engagement. Specifically, the cities and towns surrounding Needham and Weymouth were identified as having a high percentage of families with persons under 18, of persons in poverty and/or persons who identify as Black, Asian or Hispanic/Latino.

F1.e.ii

Please provide evidence of sound Community Engagement and consultation through the development of the Proposed Project. A successful Applicant will, at a minimum, describe the process whereby the "Public Health Value" of the Proposed Project was considered, and will describe the Community Engagement Process as it occurred and is occurring currently in, at least, the following contexts: Identification of Patient Panel Need; Design/Selection of DoN Project in response to "Patient Panel" need; and Linking the Proposed Project to "Public Health Value".

This Application is the result of a lengthy and ongoing planning and community engagement process centered on Boston Children's mission of providing the highest quality health care, being a leader in research and discovery, educating the next generation of leaders in health care, and enhancing the health and well-being of the children and families in the local community. For the Applicant, the process of establishing public health value is inextricably linked to pursuit of the foregoing mission. Throughout the development of the Proposed Project, the Applicant, guided by its Board of Directors, has been continuously evaluating projects that best further this mission and, as discussed further in F5.a.i below, considered a number of alternatives.

The Hospital has presented its Proposed Project and solicited feedback at existing internal venues for patient engagement within the Hospital. In particular, it has engaged with the

Hospital's Family Advisory Council and the BCH ACO Patient Family Advisory Committee. Additionally, the Applicant has consulted patient advocacy groups organized around particular conditions, including Children's Mental Health Campaign partners such as the Massachusetts Association for Mental Health and the Massachusetts Society for the Prevention of Cruelty to Children, to hear about their constituencies' concerns with access to pediatric specialty care in Massachusetts.

The Hospital has also performed outreach to the health departments in communities in which the Proposed Project sites are located, as well as to surrounding municipalities identified by Bailit as having a high percentage of families with persons under 18 years, of persons in poverty and/or persons who identify as Black, Asian or Hispanic/Latino. Outreach and follow-up to these health departments is ongoing, as local public health departments continue to focus efforts on response to the COVID-19 pandemic in their communities. Consistent with discussions with the Department of Public Health, the Applicant has focused its outreach in the Brockton, Randolph, Quincy, and Framingham communities, recognizing the siting of the Proposed Project along major transportation access points for patients in these communities. In addition, the Applicant has reached out to primary care provider entities with referring relationships to the Hospital, including the PPOC with its statewide reach and Atrius Health, to understand their perspectives on patient access and identify opportunities to be responsive to issues voiced.

The following includes some of the outreach initiatives Boston Children's has taken to date or plans to take throughout the development of the Proposed Project:

- Municipality outreach directed toward local health departments with staff welcomed to include other local leaders with relevant perspectives on children's health, such as representatives from the school system. The Applicant has met with representatives from Waltham, Needham, Weymouth, Framingham, Brockton, Randolph, Quincy, and Milton.
- Presentation and discussion at the BCH ACO Patient and Family Advisory Council meeting on December 30, 2020, as well as a plan to follow up at the April meeting.
- Presentation and discussion with the Hospital's Family Advisory Council on March 16, 2021.
- Presentation and discussion with the Applicant's Board Committee on Community Health on March 6, 2020, September 18, 2020, and June 11, 2021.
- Provider community outreach to the Boston Children's primary care providers (PPOC), Atrius Health, Massachusetts League of Community Health Centers and individual members, Beth Israel Lahey Health, Beth Israel – Needham, South Shore Hospital, and Shields MRI, as well as the Massachusetts Hospital Association.
- Patient advocacy outreach to Children's Mental Health Campaign partners and the Crohn's and Colitis Foundation.
- Numerous Community/Human Service Organizations in target communities (*e.g.*, Boys and Girls Clubs, YMCA/YWCA, CAP Agencies, interfaith organizations, and multicultural organizations).

Following the filing of this Application, Boston Children's plans to continue its outreach efforts regarding the Proposed Project.

Factor 2: Health Priorities

Addresses the impact of the Proposed Project on health more broadly (that is, beyond the Patient Panel) requiring the Applicant demonstrate that the Proposed Project will meaningfully contribute to Commonwealth's goals for cost containment, improved public health outcomes, and delivery system transformation.

F2.a. Cost Containment:

Using objective data, please describe for each new or expanded service, how the Proposed Project will meaningfully contribute to the Commonwealth's goals for cost containment.

As with health outcomes, Boston Children's takes a long-term view of promoting the Commonwealth's goals for cost containment, improved health outcomes, and delivery system transformation. Providing access to specialized pediatric care, to treatment plans that include the whole family, and to better and more consistent care of chronic or complex medical conditions are all investments in avoiding or containing total medical expenses for decades to come. By providing timely and appropriate ambulatory care to complex medical populations, Boston Children's reduces the need for other more difficult and expensive downstream care that may result from clinically appropriate care that is delayed. In addition, Boston Children's anticipates that improving access to its services in the community and closer to patients and their families will provide cost savings for patients and payors. For example, by shifting certain procedures from the Longwood Medical Area to the Needham Facility, the Applicant expects to reduce traffic and parking cost for patients, and also reduce costs for third-party payors and MassHealth. It will allow the Hospital to move care from the more expensive tertiary and quaternary setting to a more efficient, cost-effective site. Certain services, such as endoscopy, performed in an ambulatory facility rather than a full-service hospital can be done more efficiently and at lower cost. Additionally, as described in Factor F1.a.ii, increased access to pediatric-tailored imaging protocols with the addition of two MRI units in the community may reduce the need for repeat imaging.

Furthermore, as shown in Table 3 above, in 2019 MassHealth reflected 38.2% of the payor mix. The BCH ACO serves approximately 20% of all pediatric enrollees in ACOs, and as it takes on 75% of the risk of the plan, the Applicant is at risk for increases in total medical spending. In addition, the Hospital's contracted third party rate increase has not exceeded the cost growth benchmark in any year since the adoption of Chapter 224. The Applicant anticipates that the Proposed Project will have no material adverse impact on the Commonwealth's objective to meet its cost containment goals.

F2.b. Public Health Outcomes:

Describe, as relevant, for each new or expanded service, how the Proposed Project will improve public health outcomes.

As with cost containment, Boston Children's takes a long-term view of public health outcomes, providing specialized services responsive to the needs of children with conditions that often could not have been prevented. However, such services, through timely intervention and ongoing supportive care, can mitigate the impact of such conditions and help children become the healthiest adults they can be. The Proposed Project addresses a clear and demonstrated need in the Commonwealth for expanded pediatric specialty care in the community. It will improve public health outcomes by providing accessible locations and facilities in the community for patients and their families to receive specialized pediatric services. The creation of a med-psych partial hospitalization program will address the gap in services for a vulnerable population of patients with comorbid medical and psychiatric conditions. The Proposed Project will support a cross-disciplinary approach to care, incorporating behavioral health supports throughout services, including gastroenterology. In addition, access to ambulatory surgery care by trained pediatric specialists may result in improved outcomes for children, as further described in Factor F1.a.ii. The Proposed Project's addition of two MRI units will improve timely access to imaging services specifically attuned to pediatric needs and which may reduce a patient's lifetime dose of ionizing radiation. The Proposed Project will also make certain other pediatric specialty services, such as sleep and ophthalmology services, available in a community care setting, thus making them more accessible and thereby improving public health outcomes as discussed earlier.

F2.c. Delivery System Transformation

Because the integration of social services and community based expertise is central to goal of delivery system transformation, discuss how the needs of their patient panel have been assessed and linkages to social services organizations have been created and how the social determinants of health have been incorporated into care planning.

Boston Children's has an established community health mission and invests heavily in establishing linkages with community partners and social services organizations, as well as developing programs targeted at addressing health care social determinants of health. Through the BCH ACO, which, as of June 30, 2020, had a membership of over 110,000 members, Boston Children's supports initiatives to promote health equity by reducing social barriers to optimal health and well-being, including in primary focus areas of population management, behavioral health, asthma management, response to social needs, complex care, and regional support. For example, the PPOC has embedded its Health Needs Assessment into its electronic medical record to facilitate screening for health-related social needs, steadily increasing screening rates across PPOC practices and informing BCH ACO of the prevalence of identified needs so that resources could be referred. The Proposed Project will further BCH ACO efforts in these primary focus areas, particularly behavioral health and complex care, and will provide a level of coordinated care through the co-location of multi-specialty services with diagnostic and therapeutic services that will provide greater integration of behavioral health services. The Proposed Project will allow the Hospital to broaden its engagement with community organizations outside of Boston, provide greater accessibility to its services and improve patient outreach.

In addition, through its Flexible Services Program, BCH ACO launched one Nutrition Support program and two Housing Support programs in 2020, and developed a second Nutrition Support

program that will launch in 2021. These programs respond to patients’ health related social needs, including food insecurity and/or housing instability, through links to community-based organizations that can help address such needs. The BCH ACO’s program with community partners coordinates children with certain qualifying levels of complexity, either medical or social, with community-based organizations that can provide additional case management. As part of Boston Children’s, the Proposed Project will be included in its efforts to link patients to social services organizations and community based expertise.

Every three years, the Applicant conducts a comprehensive community health needs assessment. The Applicant’s most recent assessment was performed in 2019. The key themes of the assessment include how poverty impacts child and community health, access to stable and affordable housing, concerns about food access and insecurity, and the importance of prevention and focus on early childhood. The Applicant’s 2019 assessment indicates that families continue to be concerned with health issues around asthma, obesity, and mental/behavioral health. The assessment’s findings have informed the Applicant’s Strategic Implementation Plan, which outlines how resources will be used and how it will partner with others to improve community health. The chart included below sets forth the goals and objectives of the Hospital’s Community Health Strategic Implementation Plan of December 2019.

GOAL 1: Promote mental health and emotional wellness by nurturing resilient communities and building equitable, accessible, and supportive systems of care
OBJECTIVE 1.1: By 2022, increase the number of diverse, culturally/linguistically competent licensed clinical behavioral health workers and community-based behavioral health caregivers
OBJECTIVE 1.2: By 2022, increase the number of non-traditional places/settings for children and families to access behavioral services and resources
OBJECTIVE 1.3: By 2022, identify resources and supports to increase mental health and trauma services and supports where children live and learn in BCH priority communities (Dorchester, Jamaica Plain, Roxbury, Mission Hill/ Fenway, Mattapan)
GOAL 2: Support safe, stable, healthy, equitable, affordable housing for children and families
OBJECTIVE 2.1: By 2022, work toward policy and systems changes that would decrease the number of low/moderate-income families with children who are homeless or housing insecure.
OBJECTIVE 2.2: By 2022, increase pathways to mobility for low-income families through approaches that build assets and facilitate homeownership.
GOAL 3: Support youth-centered and engaged programming to drive improvements in career planning and youth workforce services
OBJECTIVE 3.1: By 2022, increase the engagement and participation of youth in youth-development programs in BCH priority neighborhoods
OBJECTIVE 3.2: By 2022, increase over identified baseline, the number of youth who engage in advocacy activities that can influence decisions made by City/State/Federal government that contribute to their wellness and the health of their community
GOAL 4: Improve health and quality of life outcomes for children with asthma
OBJECTIVE 4.1: By 2022, reduce the racial disparity in emergency department visits and hospitalizations due to asthma in children
GOAL 5: Provide culturally relevant supports to children and families that encourage them to have healthy weight and increase access to affordable and nutritious food
OBJECTIVE 5.1: By 2022, increase collaboration and alignment of existing Boston Children’s healthy weight and nutrition programs and initiatives
GOAL 6: Set a high trajectory for success in school and life among children birth to 5-years old
OBJECTIVE 6.1: By 2022, expand training and quality improvement supports for early education and care (EEC) community-based providers
OBJECTIVE 6.2: By 2022, enhance engagement and skill building for parents and families with children birth to 5-years old through community programming
OBJECTIVE 6.3: By 2022, advocate and collaborate to increase the amount of flexible, affordable, high quality child care for children birth to 5-years old

Factor 5: Relative Merit**F5.a.i**

Describe the process of analysis and the conclusion that the Proposed Project, on balance, is superior to alternative and substitutive methods for meeting the existing Patient Panel needs as those have been identified by the Applicant pursuant to 105 CMR 100.210(A)(1). When conducting this evaluation and articulating the relative merit determination, Applicant shall take into account, at a minimum, the quality, efficiency, and capital and operating costs of the Proposed Project relative to potential alternatives or substitutes, including alternative evidence-based strategies and public health interventions.

The Applicant has an existing ambulatory footprint in the community that it has consciously developed in recent decades to provide comprehensive care designed to meet the needs of children. As discussed in F1.a.ii, there is a demonstrated need in the Commonwealth for enhanced pediatric services, including behavioral health, gastroenterology and behavioral health, day surgery, imaging, and other specialties. In regard to the Waltham Facility and the Needham Facility, the Applicant has evaluated a plethora of different options over the past five years to meet the evolving needs of its Patient Panel. The Waltham Facility and the Weymouth Facility were selected for the addition of the MRI units as they provide the best access to the most patients residing in the community, particularly in the Metro West communities from which a third of the Applicant's MRI volume resides. With the Proposed Project, the Applicant will provide pediatric focused diagnostic and therapeutic services that currently do not exist in the proposed Weymouth service area.

With respect to the aspects of the Proposed Project relating to the Waltham Facility and the Needham Facility, the Hospital conducted a detailed evaluation of two alternatives (summarized in the table below). The Hospital considered an eight-story addition to the Waltham Facility's campus, although that alternative would have cost \$460 million alone. Another possible addition design was considered as well, costing approximately \$600 million. Both alternative proposals would have resulted in a less operationally efficient design and faced significant challenges in obtaining requisite local approvals. Further, as the needs of its Patient Panel grew beyond initial projections, the Hospital recognized that expansion on the Waltham Facility campus alone would not adequately accommodate those needs. The Applicant then evaluated a series of other real estate options in the general metro west area based on accessibility to major transportation routes, space costs, and size of facility and determined that the Needham Facility coupled with the renovation of the Waltham Facility would best meet the needs of its patients, and that the financial feasibility of the Proposed Project depends on completion of both the Waltham Facility and the Needham Facility.

Waltham Facility and Needham Facility

	Proposed Project	Alternative #1	Alternative #2
Description	78,395 GSF of renovation within existing Waltham facility and construction of 224,000 GSF Needham Facility.*	Addition of eight-story building to Waltham campus.	Renovation of existing Waltham facility and leasing and renovation of a building in Needham
Quality	Comparable	Comparable	Comparable
Efficiency	Most operationally efficient	Less Operationally Efficient Design (and significant challenges expected in obtaining local approvals)	N/A (deemed infeasible due to height limitations)
Costs	Lowest Capital Cost Most Operationally Efficient	Higher Capital Cost (approximately \$460 million)	Highest Capital Cost (approximately \$597 million)

* See Attachment 2 for complete project description.

With respect to the Weymouth Facility, the Applicant considered alternative sites when examining clinical, financial, and safety needs (see table below). In 2019, the Applicant considered two alternative locations in Weymouth. These locations were not pursued due to concerns regarding landlord expansion execution and structural parking requirements.

Weymouth Facility

	Proposed Project	Alternative #1	Alternative #2
Description	Leasing and fit-out of approximately 38,362 GSF at 200 Libbey Parkway, Weymouth, MA*	Leasing and fit-out of alternate site.	Leasing and fit-out of alternate site.
Quality	Comparable	Comparable	Comparable
Efficiency	Comparable	Less desirable due to concerns regarding landlord expansion execution	Less desirable due to structural parking requirements
Costs	Approximately \$38 million	Approximately \$34.6 million plus parking garage costs	Approximately \$35.1 million plus parking garage costs

* See Attachment 2 for complete project description.

The Proposed Project seeks to meet patient demands for more accessible, lower-cost services in the community. The Proposed Project continues the Hospital's commitment to being a worldwide leader in the advancement of children's health and its mission to improve the health and well-being of children in the community. Through its multi-year process, the Applicant considered a number of alternative approaches to meeting the patient panel needs before its Board of Directors selected the Proposed Project. Relative to the Proposed Project, the alternatives were less operationally efficient, more costly, or infeasible in light of local zoning or other restrictions.

Attachment 4

The Bailit Report

TO: Kate Lewandowski, Joshua Greenberg and Donna Casey
FROM: Deepti Kanneganti and Beth Waldman
DATE: March 22, 2021
RE: Recommendations for Boston Children's Hospital's 2021 DON Application

I. Introduction

Boston Children's Hospital (Boston Children's) contracted with Bailit Health Purchasing, LLC (Bailit Health) to support its Determination of Need (DON) application in 2021. It specifically requested Bailit Health to assist with three primary tasks:

- demonstrate to the extent possible the existence of an external evidence supporting the need for enhanced access to pediatric specialty care, particularly in the specialties that constitute the core program components of Boston Children's 2021 DON application;
- acknowledge areas where external research/data on pediatric care is lacking and where, as a result, Boston Children's should reasonably be considered a credible expert on the needs of the population it serves; and
- highlight areas of Boston Children's 2021 DON application are aligned with state policy and guidelines (including but limited to consideration of the state's public health priorities and the fidelity of Boston Children's outreach process to the community engagement guidelines).

This memo summarizes Bailit Health's process for conducting these three tasks as well as its major findings.

II. Overall Findings from Bailit Health's Environmental Scan

Bailit Health conducted an environmental scan to identify whether there is evidence supporting the need for enhanced access to pediatric specialty care overall. As part of this scan, Bailit Health determined that there is a significant body of research on the ways in which the care of pediatric patients differs from that of adult patients, as well as the ways in which children and their health needs differ from adults at the population level. This research supports the need for specialized pediatric health care services to be available and accessible to all children. Further, children's hospitals are uniquely capable of providing the widest range of pediatric services, including care for children with medical complexity and children with rare conditions.¹⁷

In addition, literature suggests that pediatric specialty care is decreasing in availability in community hospitals, a trend that has not applied to academic medical centers.^{18,19} This

¹⁷ Berry, J.G., Hall, M., Neff, J., Goodman, D., Cohen, E., ... Feudtner, C. (2014). Children with Medical Complexity and Medicaid: Spending and Cost Savings. *Health Affairs*, 32(12). <https://doi.org/10.1377/hlthaff.2014.0828>.

¹⁸ Franca, U.L. and McManus, M.L. (2017). "Availability of Definitive Hospital Care for Children." *JAMA Pediatr.*, 171(9). <https://doi.org/10.1001/jamapediatrics.2017.1096>.

phenomenon is true not only of highly subspecialized pediatric services, but general pediatrics inpatient beds as well. This is because procedures that may previously have required a hospital admission are shifting to outpatient or physician office settings.^{20,21} In addition, it is difficult for an acute care hospital serving both adults and children to justify offering low-volume specialized pediatric services from a business perspective.²² From a clinical perspective, it is important to sustain a certain level of volume to ensure clinicians can maintain their skills and expertise; falling to a low volume of pediatric care may have negative effects on clinical quality.

Further, Boston Children's plays a unique role in the delivery of pediatric care in Massachusetts. In addition to its own care offerings, Boston Children's staffs six community hospitals in the Commonwealth, which accounts for 70,000 ED visits, 11,500 deliveries, 3,650 inpatient/observation discharges and 1,200 NICU discharges. It also has relationships with numerous primary care networks.²³ These affiliations extend Boston Children's geographic coverage and allows it to support existing care offerings.

These findings support the argument that to expand access to pediatric specialty services, it is incumbent upon academic medical centers, such as Boston Children's, to develop that expanded capacity. There unfortunately is a dearth of publicly available hard data through sources such as the Center for Health Information and Analysis (CHIA), the Health Policy Commission (HPC) and the Massachusetts Health & Hospital Association (MHA) about the pediatric capabilities of hospitals and health systems in Massachusetts specifically to support this research.²⁴

III. Bailit Health's Feedback to Boston Children's Proposed Plan for its 2021 DON Application

Bailit Health then sought to identify whether there is evidence supporting the need for pediatric care within specific specialty areas Boston Children's is considering for its DON application. This includes pediatric behavioral health, gastroenterology, orthopedics/sports medicine, ophthalmology, pediatric-focused operating rooms and related services and sleep. Within each of these specialty areas, it is evident that children cannot be treated in any care setting due to differing physical structures and growth patterns, challenges in voicing their medical concerns and the need for specialized equipment and medication dosage. As a result, Boston Children's – a dedicated pediatric-focused organization – should reasonably be considered a credible expert on the needs of the population it serves.

¹⁹ Franca, U.L. and McManus, M.L. (2018). "Trends in Regionalization of Hospital Care for Common Pediatric Conditions." *Pediatrics*, 141(1). <https://doi.org/10.1542/peds.2017-1940>.

²⁰ Liptak, G.S., Burns, C.M. and Davidson, P.W. (1998). "Effects of Providing Comprehensive Ambulatory Services to Children with Chronic Conditions." *Archives of Pediatrics and Adolescent Medicine*, 152(10):1003-1008. <https://doi.org/10.1001/archpedi.152.10.1003>.

²¹ Glied, S. and Cuellar, A.E. (2003). "Trends and Issues in Child and Adolescent Mental Health." *Health Affairs*, 22(5). <https://doi.org/10.1377/hlthaff.22.5.39>.

²² Franca and McManus (2018), *op cit*.

²³ Boston Children's Hospital Community of Care Analysis, FY 2019.

²⁴ Of note, the HPC is in the beginning phases of a previously delayed report on children with children with medical complexity, and it may shed light on useful areas of future research and data collection by the Commonwealth.

A. Behavioral Health

Boston Children's has proposed a plan that would increase capacity at multiple points across the continuum of care, targeting support for children with outpatient behavioral health management and care for children with complex medical and behavioral comorbidities. The express purpose of this plan is to move the overall health system closer to the triple aim of the right care in the right setting at the right time, relieving pressure on the part of the behavioral health system (i.e., inpatient beds) that is currently under the most strain. As a result, its behavioral health focus addressed in its DON application is only a small portion of the work it conducts in other care settings, consistent with the Department of Public Health (DPH)'s express direction that applicants address upstream factors and include preventive services where possible in their applications.

It is well-known that the demand for behavioral health services currently outstrips supply in Massachusetts across the continuum of care. This is particularly true for pediatric behavioral health. The Children's Mental Health Campaign, in which Boston Children's participates, has long been advocating for expansion of pediatric behavioral health services. According to the American Psychological Association, one in five children have a diagnosable mental health disorder.²⁵ Children show different symptoms of mental health disorders as they grow – impacting how they play, learn, act, speak and handle their emotions. Children's needs are distinct from adults as they are not only impacted by the state of a child's development, but also influenced by family, social and educational environments.²⁶

With an average of 15-20 patients boarding each day prior to the pandemic and a current boarding census that consistently approaches 60 patients, the need for increased intensive psychiatry service capacity in Massachusetts (e.g., general psychiatry and neurodevelopment/autism spectrum disorder inpatient units) is undeniable.²⁷ Boston Children's has committed to addressing this need in a variety of ways. Boston Children's has filed an application under the COVID-19 State of Emergency to add 12 pediatric inpatient psychiatric beds in at the request of the State. The application was approved within 24 hours and planning for construction in Waltham, MA is already underway. The creation of a med-psych partial hospitalization program proposed in Boston Children's DON application will additionally help support reducing the need for children to remain in the ED and will provide step-down options for children requiring an intensive level of ongoing care upon discharge.²⁸

In addition to primary psychiatric diagnoses, comorbid behavioral health conditions are present in 13.2% of pediatric hospitalizations, and account for increased lengths of stays. Supporting children's behavioral health needs when they are experiencing physical health

²⁵ American Psychological Association, [Promoting Awareness of Children's Mental Health Issues \(apa.org\)](https://www.apa.org)

²⁶ Tyler et al, Behavioral Health Integration in Pediatric Primary Care: Considerations and Opportunities, for Policymakers, Payers and Providers, Millbank Memorial Fund, March 2017, [MMF BHI REPORT FINAL.pdf \(milbank.org\)](https://www.milbank.org)

²⁷ Department Chief Notes – Psychiatry, November 2020

²⁸ Department Chief Notes – Psychiatry, November 2020

conditions is essential for their ongoing wellness and growth, as well as addressing high costs of care.²⁹ Children's is the only facility in MA to provide inpatient psychiatric care for children and adolescents with severe co-occurring medical and psychiatric disorders.

Boston Children's ongoing commitment to improving access to pediatric health care is evident both within this DON expansion for a med-psych program, as well as its ongoing commitment to expand inpatient and outpatient behavioral health services. We anticipate that Boston Children's will receive considerable input on community-level behavioral health access needs as it conducts its community outreach and needs assessment planning, as described further in Section IV below. We additionally expect continued state policymaking through the State's recently released behavioral health roadmap.

B. Gastroenterology

The gastroenterology care model is changing across the country to accommodate a shortage of these pediatric subspecialists. Children can wait nearly five weeks for gastrointestinal appointments, which has encouraged pediatric hospitals, such as Texas Children's Hospital, to add ambulatory facilities in which they can offer routine diagnostic endoscopies and consults.^{30,31} Shifting care to these settings can reduce costs for patients and payers.³²

In addition, ambulatory-focused pediatric care could offer children cost-effective treatment options that enable them to function better daily. Behavioral treatment for children, for example, does not require use of gastrostomy tubes, which can result in a cost-effective ratio of roughly \$95,000 to \$170,00 in five years, and is not associated with the increased stress, impaired social functioning and social and psychosocial harms of the tubes.³³ Further, patients are often denied coverage if infusions for gastroenterological conditions, like inflammatory bowel disease, are delivered anywhere other than a hospital. Experts, however, argue that patients can receive infusions in non-hospital settings, including free-standing centers and patient homes, without compromising quality of care or patient safety, if care teams follow recommendations for how to deliver effective care.^{34,35}

²⁹ Douppnik et al., *Mental Health Conditions and Medical and Surgical Hospital Utilization*, Pediatrics, Volume 138. Issue 6. December 2016.

³⁰ Children's Hospital Association. (2012). *Pediatric Specialists in Children's Hospitals*. (2012).

³¹ Texas Children's Hospital. (2016). "A New Model of GI Care." Retrieved from <https://www.texaschildrens.org/blog/2016/06/new-model-gi-care>.

³² Sachin, K., Sana, C., Arora, M., Hutzenbuhler, M., Saini, A., Sachdeva, N.K. (2019). "Safety, Feasibility and Cost-Effectiveness of Pediatric Gastrointestinal Procedures at an Outpatient Endoscopy Center." *The American Journal of Gastroenterology*, 114: S645. <https://doi.org/10.14309/01.ajg.0000594128.17059.40>.

³³ Dempster, R., Burdo-Hartman, W., Halpin, E., Williams, C. (2015). "Estimated Cost-Effectiveness of Intensive Interdisciplinary Behavioral Treatment for Increasing Oral Intake in Children with Feeding Difficulties." *Journal of Pediatric Psychology*, 41(8): 857-866. <https://doi.org/10.1093/jpepsy/jsv112>.

³⁴ Barfield, E., Sockolow, R., Hoffenberg, E., Saeed, S., Kim, S., Siebold, L., Picoraro, J., Moses, J., Dykes, D., Grossman, A., Wahbeh, G., Park, K.T. (2019). "Assuring Quality for Non-Hospital Based Biologic Infusions in Pediatric Inflammatory Bowel Disease: A Clinical Report from the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition." *Journal of Pediatric Gastroenterology and Nutrition*, 66(4): 680-686. <https://doi.org/10.1097/MPG.0000000000001890>.

³⁵ Gupta, S.R., Crandall, W.V., Donegan, A., Johnson, M., Drobnic, B., Oates, M., Boyle, B., Maltz, R.M., Dotson, J.L. (2019). "A Quality Improvement Approach to External Infliximab Infusions in Pediatric

Pediatric gastroenterology services in the greater Boston area primarily limited to facilities operated by Boston Children's, Mass General Hospital for Children, Boston Medical Center, Tufts Medical Center and UMass Memorial Hospital and their satellite locations (e.g., Foxborough, Salem, Waltham, Weymouth and Wilmington). The current portfolio of services is currently not meeting the needs of the pediatric population, as demonstrated through long wait times. Therefore, Boston Children's proposed expansion of pediatric gastroenterology services in Needham can increase the availability of specialty services that are often hard to access due to a limited supply of services, especially for communities that have high percentages of non-White people and persons in poverty (e.g., Brockton, Randolph, Waltham). This proposed expansion will also allow Boston Children's to supplement, rather than duplicate, the current services that are sought and provided in other regional facilities and tertiary care centers with pediatric facilities. Further, Boston Children's partners with community pediatricians and pediatric gastroenterologists throughout New England to provide tertiary and quaternary care for the sickest patients. This relationship will allow Boston Children's to continue to provide targeted care for the most complex patients because of the volume of patients it treats.

C. Orthopedics/Sports Medicine

There is an overall shift of performing certain pediatric orthopedic/sports medicine procedures in ambulatory-based settings rather than inpatient settings. For example, use of outpatient surgical facilities for pediatric fractures increased threefold from 2996 to 2006.³⁶ CMS' reimbursement for orthopedic conditions is increasingly driving providers to deliver such care in ambulatory and outpatient settings.³⁷ Importantly, shifting pediatric orthopedic care from the main campuses of academic medical centers to satellite locations can improve efficiency without compromising patient safety.³⁸ Finally, while pediatric orthopedic surgery has large upfront costs, research demonstrates that it does yield significant benefits over time through increased health-related quality of life.³⁹ Effective, pediatric-focused post-surgical care can also help improve long-term outcomes for children, especially as it relates to opioids and substance abuse.⁴⁰

Boston Children's proposed expansion of orthopedic/sports medicine services in Needham can improve the availability of high-quality, pediatric-focused specialty care that is hard to find in ambulatory settings. Pediatric orthopedic care is currently limited to a few facilities

Inflammatory Bowel Disease." *Journal of Pediatric Gastroenterology and Nutrition*, 69(5): 544-550.

<https://doi.org/10.1097/MPG.0000000000002422>.

³⁶ Bernstein, D.T., Chen, C., Zhang, W., McKay, S.D. (2015). "National Trends in Operative Treatment of Pediatric Fractures in the Ambulatory Setting." *Orthopedics*, 28(10): e869-e873.

<https://doi.org/10.3928/01477447-20151002-52>.

³⁷ Beste, C. (2020). "Proposed CMS Medicare Rule Signals New Era of Orthopedics." *Becker's ASC Review*. Retrieved from <https://www.beckersasc.com/asc-news/proposed-cms-medicare-rule-signals-new-era-of-orthopedics.html>.

³⁸ Waters, P.M., Yang, B.W., White, D., Barth, E., Chiang, V., Mizrahi-Arnaud, A., Sparks, W. (2018). "A Dedicated Satellite Trauma Orthopaedic Program Operating Room Safely Increases Capacity." *Journal of Bone and Joint Surgery*, 100(10): e70. <https://doi.org/10.2106/JBJS.17.01368>.

³⁹ Mininder, K. (2015). "Value of Pediatric Orthopaedic Surgery." *Journal of Pediatric Orthopaedics*, 35: S9-13. <https://doi.org/10.1097/BPO.0000000000000536>.

⁴⁰ Kelley-Quon, L.I., Kirkpatrick, M.G., Ricca, R.L., et al. (2020). "Guidelines for Opioid Prescribing in Children and Adolescents After Surgery." *JAMA Surg*. <https://doi.org/10.1001/jamasurg.2020.5045>.

in Massachusetts, such as Boston Children's, Boston Medical Center, Mass General Hospital for Children and Tufts Children's Hospital. Availability of pediatric orthopedic care, however, is challenging to find in community settings, other than the satellite locations of Boston Children's and Mass General Hospital. Further, while pediatric patients may seek care for orthopedic/sports medicine needs in alternate, easier-to-access, non-pediatric settings (e.g., adult-focused facilities), this care is not of the highest quality children can receive because the facilities are most often do not have the staff or equipment needed to provide safe and effective pediatric-focused care. Rather than seeking care in settings that can lead to unintended consequences, these pediatric patients would likely prefer accessing the right care in a location that is more convenient for them.

D. Ophthalmology

There is limited availability of pediatric ophthalmologists in the country, but a high number of pediatric eye care needs. There are 1,000 pediatric ophthalmologists in the U.S., but more than 12.1 million school-age children have a vision problem and only one-third of children receive eye care before the age of six.^{41,42} Despite the importance of early identification of vision problems in establishing an effective treatment plan, screening for young children in Massachusetts is low, especially among non-White pediatric patients that are socioeconomically disadvantaged. 72 percent of children in Massachusetts in households with incomes 400 percent of the federal poverty level (FPL) or greater received vision screening, compared to 56 percent of children in households with incomes between 0 to 99 percent of the FPL.⁴³ 74 percent of White, non-Hispanic children received vision screening, compared to 56 percent of Hispanic children, 59 percent of Black, non-Hispanic children and 63 percent of Asian, non-Hispanic children.⁴⁴

Boston Children's proposed expansion of ophthalmology services can begin to address the need for more comprehensive vision screens in the Commonwealth. Increasing availability of services in Needham is helpful because there is a limited availability of ophthalmologic care in community hospitals and Needham is closer to several communities with high percentages of non-White people and persons in poverty (e.g., Brockton, Randolph, Waltham) compared to Boston. New ambulatory services can supplement the current care offerings that are limited to a few facilities in Massachusetts, including Boston Children's, Mass Eye and Ear and UMass Memorial Hospital. In addition, Boston Children's has relationships with many of these facilities. For example, it helped UMass build its pediatric ophthalmology residency program, collaborates with Tufts Medical Center to run a training

⁴¹ American Academy of Ophthalmology (AAO) and American Association for Pediatric Ophthalmology and Strabismus (AAPOS). (2020). "Pandemic will Leave Children with Less Access to Eye Care, New Survey Shows." Retrieved from https://www.newswise.com/coronavirus/pandemic-will-leave-children-with-less-access-to-eye-care-new-survey-shows/?article_id=737258.

⁴² National Center for Children's Vision and Eye Health. "Health Education Resources." Retrieved from: <https://nationalcenter.preventblindness.org/policy-issues/>.

⁴³ Data Resource Center for Child & Adolescent Health. "Receipt of Vision Screening by Household Income Level: Children Age 0-17 Years, Massachusetts." Retrieved from <https://www.childhealthdata.org/browse/survey/results?q=7737&r=23&g=803>.

⁴⁴ Data Resource Center for Child & Adolescent Health. "Receipt of Vision Screening by Race/Ethnicity: Children Age 0-17 Years, Massachusetts." Retrieved from <https://www.childhealthdata.org/browse/survey/results?q=7737&r=23&g=795>.

program for orthoptists and plays a major role in staffing Mass Eye and Ear Infirmiry's Children's Hospital Ophthalmology Foundation's clinics.^{45,46}

E. Operating Rooms and Related Services

Pediatric patients require special operating rooms with the right equipment and personnel to ensure safety and quality. The American Society of Anesthesiologists and Society of Pediatric Anesthesia issued separate statements that highlight the importance of proper categorization of pediatric surgical procedures, an annual minimum case volume for pediatric anesthesiologists to maintain clinical competence, specialized policies for pediatric pain treatment, pediatric surgical equipment and drugs and the availability of pediatric-specific operating rooms, post-anesthesia care units and intensive care units.^{47,48}

The complexity of running and staffing pediatric operating rooms is significant. Children's is unique in the Massachusetts and New England market in terms of the depth and breadth of its pediatric surgical offerings across multiple subspecialties. Boston Children's is also unique in the significant integration between its surgical program and its ongoing care for children with more complex medical conditions (e.g., spina bifida, gastrointestinal/motility, cardiovascular care, etc.) It can be challenging to expect adult-focused facilities to be able to effectively run both adult and pediatric operating rooms, especially given the importance of having a minimum volume of procedures for surgeons and anesthesiologists to maintain their expertise. Having dedicated pediatric operating rooms has the potential to reduce crowding in adult operating rooms, expand pediatric surgical services and improve margins.⁴⁹

Further, the expansion of operating capacity in ambulatory surgical centers offers a cost-effective way to increase access to services in a setting that patients prefer.⁵⁰ Children do not always need to visit a Level I surgical center to receive the services they need, especially given that these facilities are harder for families and their support networks to access. The American College of Surgeons' highlights the importance of ambulatory surgical centers in providing an accessible, appropriate outpatient treatment option for children in its "Optimal Resources for Children's Surgical Care" document.⁵¹ In addition, pediatric-focused ambulatory surgical centers associated with more intensive hospital-based programs have

⁴⁵ Boston Children's Hospital. (2020). Chief Notes for the Ophthalmology Department.

⁴⁶ Massachusetts Eye and Ear. "Pediatric Ophthalmology." Retrieved from <https://www.masseyeandear.org/specialties/pediatric-eye>.

⁴⁷ American Society of Anesthesiologists. (2016). "Statement on Practice Recommendations for Pediatric Anesthesia." Retrieved from <https://www.asahq.org/standards-and-guidelines/statement-on-practice-recommendations-for-pediatric-anesthesia>.

⁴⁸ Society for Pediatric Anesthesia. "Policy Statement on Provision of Pediatric Anesthesia Care." Retrieved from <https://pedsanesthesia.org/about/provision-of-pediatric-anesthesia-care/>.

⁴⁹ Gantner, J., Lee, Y.H., Barone, J.G. (2019). "How Adding Pediatric ORs Changed A Children's Hospital." *Children's Hospital Association*. Retrieved from <https://www.childrenshospitals.org/Newsroom/Childrens-Hospitals-Today/Articles/2019/06/How-Adding-Pediatric-ORs-Changed-a-Childrens-Hospital>.

⁵⁰ Nordin, A.B., Shah, S.R., Kenney, B.D. (2018). "Ambulatory Pediatric Surgery." *Seminars in Pediatric Surgery*, 27(2): 75-78. <https://doi.org/10.1053/j.sempedsurg.2018.02.003>.

⁵¹ American College of Surgeons. (2015). "Optimal Resources for Children's Surgical Care." Retrieved from https://www.facs.org/-/media/files/quality-programs/csv/acs-csv_standardsmanual.ashx.

been an important contributor to expanded access at a lower cost than similar services accessed at university-based hospital facilities.⁵² Expanding the availability of pediatric operating rooms within a children's facility, like Boston Children's, therefore is a valuable, cost-effective way to improve access to surgical care.

F. Sleep

Up to 50 percent of children have a sleep disorder, which may require them to seek care that is tailored to identifying the cause of their condition in a manner that is child-friendly, equipped with specialized equipment and staffed with providers that understand how to apply techniques tailored to their developmental stage and interpret results based on their age.^{53,54} Polysomnograms, or sleep studies, are frequently ordered for pediatric patients, and are grouped into three main categories based on age-specific behavior patterns: birth to age two, age two to five and age five to 18. There are unique medical conditions that appear in each category, which requires providers and sleep technologists to have a deep understanding of not only the clinical field, but the required polysomnography techniques to detect and diagnose.⁵⁵

Polysomnograms have been trusted techniques to diagnose conditions like sleep apnea and provide greater insight into sleep disturbance associated with conditions like COPD and asthma.⁵⁶ Further, polysomnograms and other diagnostic techniques can be effective tools to diagnose and treat conditions early on, reducing the need for more costly procedures. For example, infants diagnosed with obstructive sleep apnea and eustachian tube dysfunction using polysomnography and myringotomy, respectively, received a ventilation tube placement concurrent with treatment for sleep apnea. This significantly reduced the need for future surgical interventions.⁵⁷

Within the Greater Boston area, pediatric sleep specialists are available through Boston Children's Hospital (Boston, Lexington, Peabody, Waltham), Boston Medical Center (Boston), Mass General Hospital for Children (Boston), Tufts Children's Hospital (Boston) and UMass Memorial Hospital (Worcester). Boston Children's is unique in that it provides access to sleep services outside of Boston, which offers greater flexibility for families seeking

⁵² Fabricant, P.D., Seeley, M.A., Rozell, J.C., Fieldston, E. (2018). "Cost Savings from Utilization of a Pediatric Ambulatory Surgery Center for Orthopaedic Day Surgery." *Pediatrics*, 141(1) 616.

<https://doi.org/10.1542/peds.141.1.MeetingAbstract.616>.

⁵³ Beck, S.E., Marcus, C.L. (2009). "Pediatric Polysomnography." *Sleep Medicine Clinics*, 4(3) 393-406.

<https://doi.org/10.1016/j.jsmc.2009.04.007>.

⁵⁴ Brooks, R. (2017). "Pediatric Sleep Studies: A Sleep Tech's Guide." *American Association of Sleep Technologists*. <https://www.aastweb.org/blog/pediatric-sleep-studies-a-sleep-techs-guide>.

⁵⁵ RT Staff. (2009). "Polysomnography and the Pediatric Patient." *RT Magazine*. Retrieved from <https://rtmagazine.com/departments/department-management/clinical/polysomnography-and-the-pediatric-patient/>.

⁵⁶ Chesson, A.L., Ferber, R.A., Fry, J.M., Grigg-Damberger, M., Hartse, K.M., Hurwitz, T.D., Johnson, S., Kader, G.A., Littner, M., Rosen, G., Sangal, B., Schmidt-Nowara, W., Sher, A. (1997). "The Indications for Polysomnography and Related Procedures." *Sleep Research Society*, 20(6): 423-487.

<https://doi.org/10.1093/sleep/20.6.423>.

⁵⁷ Robison, J.G., Wilson, C., Otteson, T.D., Chakravorty, S.S., Mehta, D.K. (2012). "Increased Eustachian Tube Dysfunction in Infants with Obstructive Sleep Apnea." *Laryngoscope*, 122(5): 1170-1177.

<https://doi.org/10.1002/lary.22473>.

care. This is especially important for communities with high percentages of non-White people and persons in poverty in and near Waltham, where the proposed sleep expansion is to occur, that typically have limited access to care.

IV. Bailit Health's Feedback to Boston Children's Community Engagement Plan

Bailit Health also provided feedback on Boston Children's community engagement as it relates to Factors 1, 2 and 6 of the DON application to ensure Boston Children's was in alignment with the Department of Public Health's "Community Engagement Standards for Community Health Planning Guideline."⁵⁸ There were two main components of this work: (a) identify organizations and agencies for Boston Children's to consider engaging with prior to submitting the application and (b) provide input on Boston Children's ongoing community-based health initiative (CHI) work.

A. Community Engagement for the DON Application

Boston Children's is committed to engaging with the community as part of its process for submitting a DON application to ensure the services proposed are clinically appropriate and needed by the community. First, Bailit Health helped Boston Children's identify local and state government agencies, community and grassroots groups, specialty disease and advocacy groups, provider groups and patient groups that Boston Children's should contact while drafting its DON application. Bailit Health utilized Census data to identify which communities on which Boston Children's should consider meeting with. Specifically, it identified which cities and towns surrounding Needham and Weymouth, the two major locations in the application, had a high percentage of families with persons under 18, of persons in poverty and/or persons who identify as Black, Asian or Hispanic/Latino. It was challenging to identify disease, advocacy, provider and patient groups located in these communities that were relevant to Boston Children's initial plan, so Bailit Health aimed to identify appropriate state-level organizations to contact.

Then, Bailit Health developed separate interview guides/talking points to utilize with local government agencies, state government agencies, specialty disease groups and community and grassroots groups. The questions were developed to ensure they would align with Factor 1's focus on patient panel need, 2's focus on public health values and 6's focus on CHIs. Bailit Health also prioritized including questions that were challenging to find in its environmental scan (e.g., do the communities need better access to these specialized services outside of Boston?). Boston Children's is also engaging with existing provider and patient groups to ensure the proposed services are desired by the hospital's current patient panel.

Bailit Health confirms that Boston Children's planned level of engagement for this component of its DON application meets the "Consult" level, as outlined in the DPH guidelines.

⁵⁸ Massachusetts Department of Public Health. (2017). "Community Engagement Standards for Community Health Planning Guideline." Retrieved from <https://www.mass.gov/doc/community-engagement-guidelines-for-community-health-planning-pdf/download>.

B. Community Engagement for the Community-based Health Initiative

In addition to the work performed prior to its DON application submission, Boston Children's is committed to performing ongoing community engagement through its CHI. Boston Children's has historically demonstrated its intentional effort to engage underserved communities, as defined as municipalities with disproportionately large populations of children, low income individuals and/or people of color. As part of the 2016 DON approval, Boston Children's invested \$53.4 million to benefit children's health and well-being over ten years. It convened a Community Advisory Committee and engaged with more than 300 individuals to identify community health priorities, one of which was to "foster collaboration and cohesion in communities disproportionately impacted by racial/ethnic and socioeconomic inequities in health and the social determinants of health."⁵⁹

Bailit Health has been reviewing and providing input on Boston Children's plans for its CHI as part of its 2021 DON application. For example, Bailit Health has already offered some suggestions for how Boston Children's should leverage its community-based health initiative to obtain input on how to address the community- and individual-level behavioral health needs of its patient population. It is evident that Boston Children's continues to develop a strategy that is rooted in the guidelines set forth by DPH and that is committed to supporting underserved communities, which we believe will yield meaningful engagement. Based on this, Bailit Health believes that Boston Children's planned level of engagement for its CHI meets the "Collaborate" level, as outlined in the DPH guidelines.

V. Conclusion

Based on our literature review of pediatric care needs and our work to support the development of a community engagement plan, Bailit Health believes that Boston Children's proposed 2021 DON approach meets the state's DON submission requirements. Boston Children's proposed expansions are aimed at providing services that are uniquely tailored to pediatric patients and that are either currently limited in scope or not sufficiently provided in Massachusetts. Further, its community engagement, both conducted in preparation for its DON submission and planned for its CHI, is aligned with DPH's guidelines and intentionally focused on underserved communities.

⁵⁹ Boston Children's Hospital. (2018). "Boston Children's Hospital Determination of Need/Community Health Initiative Funding Strategy Report." Retrieved from [http://www.childrenshospital.org/-/media/About-Us/Boston-Childrens-Funding-Strategy-Report-2018-\(5\).ashx?la=en&hash=E17FD3C11166039BAC05DAFC071C626556E7C99A](http://www.childrenshospital.org/-/media/About-Us/Boston-Childrens-Funding-Strategy-Report-2018-(5).ashx?la=en&hash=E17FD3C11166039BAC05DAFC071C626556E7C99A).