

The Children's Medical Center Corporation  
DoN Application No. BCH-23090808-HS  
Attachments

Substantial Capital Expenditure  
Children's Hospital Corporation

September 26, 2023

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

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## 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 delivery of pediatric care continues to evolve as does most hospital care, in general. Emergency departments (ED) support accessible, emergency care for the acute illnesses, injuries, and mental health crises. ED's also serve as a safety net for vulnerable populations or when other components of the health system become overwhelmed. The importance of emergency care was accentuated during the recent Public Health Emergency.

Access to routine pediatric vaccines including COVID and influenza is often limited for certain pediatric populations. In particular, medically complex pediatric patients often see their specialists more often than their pediatrician. Most specialists do not stock childhood vaccines. It is not feasible for specialty providers to provide these vaccines given operational requirements to store, track and administer these vaccines for a small

patient population. Additionally, migrants and people experiencing homelessness present to the emergency room for multiple reasons. Access to state resources such as shelter placement, day care, and school enrollment are dependent on up-to-date immunization status. Access to routine childhood immunization prevents unnecessary morbidity and mortality, allows for access to needed resources, and is cost savings.

Pediatric ultrasound, also known as sonography, is a painless, non-invasive imaging technique. It uses high-frequency sound waves to create images of organs, muscles, soft tissues, blood vessels, and the musculoskeletal system without the use of radiation. Since it uses no ionizing radiation, it is typically the preferable screening imaging modality for pediatric populations.

The Applicant is committed to ensuring that children in Massachusetts and New England continue to have access to emergency care, preventive vaccine programs and less invasive imaging. In furtherance of that commitment, the Applicant is pleased to submit this Application for approval of the substantial capital expenditure project that includes:

- (1) Expansion of the emergency department.
- (2) Establish a nurse run vaccine program.
- (3) Expand the ultrasound service by two additional rooms.

## The Project

The Applicant has filed this Application in connection with the following proposed actions (collectively, the "Proposed Project"):

- Renovate and equip approximately 6,500 square feet in the current emergency department located at 300 Longwood Avenue, Boston, MA 02115 to include:
  - 1 additional triage rooms/open bays
  - 8 exam rooms
  - Support space including open nurse station, ADA accessible public and staff toilets, etc.

The increase capacity in the existing footprint will allow BCH to eliminate the use of multiple alternate care ("overflow") sites outside of the emergency department.

- Renovate and equip approximately 3,300 square feet of the current patient entertainment space located at 300 Longwood Avenue, Boston, MA 02115 to create a nurse run outpatient vaccine program.
- Renovate the current shell space within the Radiology suite at 300 Longwood Avenue, Boston, MA 02115 to include an additional two ultrasound rooms.

The proposed project will optimize the use of the current facilities and improve throughput across the campus, particularly the emergency department. The proposed project is designed with the goal to meet the health needs of BCH's patient population, including identified under resourced populations. BCH seeks to improve patient experience by reducing wait times. Furthermore, patients receiving specialty care will have same day access to a centrally located hospital based vaccine program in order to receive preventive vaccines. Last, wait times for access to ultrasound care are expected to decline with the expanded capacity. The proposed project aligns with the Commonwealth's goals for cost containment through the provision of timely care in an appropriate setting, which leads to reduced mortality and morbidity for certain vulnerable populations and translates

to better patient outcomes. The maximum capital expenditure for the Proposed Project is estimated to be \$34,020,000.

## Attachment 3

### Narrative Responses to Factor 1

**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.**

For the purposes of this application, the Patient Panel consists of the statewide Patient Panel of the health care facilities affiliated with CMCC, with a focus on the patients served by BCH (the "BCH Patient Panel"). As the Commonwealth's only dedicated pediatric care delivery system, the Applicant has a consistently diverse, statewide Patient Panel.<sup>1</sup> See Table 1, below. The number of patients utilizing the services of BCH has increased over the past five years, with 269,617 unique patients in its FY22 as compared to 219,857 unique patients in FY18, an increase of 49,760 unique patients, or a 5.2% annual compounded growth rate. See Table 1, below. BCH's patient mix consists of approximately 49% males and 51% females. See Table 1, below. Reflecting BCH's commitment to health equity and access to care, the portion of its revenue attributed to the treatment of patients enrolled in Medicaid has increased from 37.7% in 2018 to 42.2% in 2022. See Table 1 below.

BCH's Patient Panel reflects a diverse patient population. In FY22, 59.9% of BCH's statewide patient population (excluding those listed as unknown) identified as White, non-Hispanic; 16.4% identified as Hispanic; 9.5% identified as Black, non-Hispanic; 6.8% identified as Another Race, non-Hispanic; 5.6% identified as Asian, non-Hispanic; and 1.8% identified as Multiracial, non-Hispanic. See Table 1, below.

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<sup>1</sup> Capitalized terms not otherwise defined have the meanings ascribed to them in the Regulations. While providers in the CMCC system serve a national and international patient base, the Patient Panel data includes only Massachusetts residents treated at BCH to best demonstrate need by a locally derived Patient Panel with respect to the Proposed Project. Except as otherwise noted, the source of any financial, statistical, or numerical information included in this application is derived from the records of BCH or FC, as applicable.



While BCH provides care to patients from around the world, its statewide Patient Panel resides mainly in Eastern Massachusetts. Applying the Department of Public Health's Health Service Area ("HSA") categories to FY22 data, 34.2% of BCH's Massachusetts patients reside in HSA 4; 19.6% reside in HSA 6; 17.1% reside in HSA 3; 13.9% reside in HSA 5; 6.2% reside in HSA 2; 1.7% reside in HSA 1; and the origin of 7.3% is unknown. See Table 1, below. The demographic characteristics and health disparities of the BCH's Patient Panel are those of the Commonwealth's families.

#### Project Specific Patient Panel: Emergency Services

The Proposed Project will expand capacity in the Emergency Department which serves an under resourced patient population as evidenced by the diversity of the patient panel in terms of age, race/ethnicity and level of public funding. The number of unique patients treated in the BCH emergency department has grown by 3.3% from 2018 to 2022. Children under the age of 10 make up 67.3% of this patient panel. The majority of the patient panel in the Emergency Department identify as Asian, Black, or Multi-racial. The portion of revenue attributed to the treatment of patients enrolled in Medicaid and seeking care in the Emergency Department has increased from 45.1% in 2018 to 51.3% in 2022. See Table 2, below.

**Table 1. Demographics of Boston Children's Massachusetts Patient Panel<sup>2</sup>**

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<sup>2</sup> To ensure patient privacy, we have used the notation "<11" in any instance where a patient count for a demographic category included less than 11 individuals. Any related percentage-of-patient-count calculations have been removed where inclusion of such percentages could compromise patient privacy.

	FY18		FY19		FY20		FY21		FY22	
	Count	%	Count	%	Count	%	Count	%	Count	%
BCH MA Unique Patients	219,857		229,342		209,610		251,058		269,617	
BCH MA Unique Visits	555,374		584,108		515,872		606,157		639,208	
Gender										
Female	109,409	49.8%	114,297	49.8%	105,119	50.1%	129,336	51.5%	136,522	50.6%
Male	110,426	50.2%	115,025	50.2%	104,456	49.8%	121,616	48.4%	132,795	49.3%
Unknown	22	0.0%	20	0.0%	35	0.0%	106	0.0%	300	0.1%
Age										
0-2 years	41,792	19.0%	43,311	18.9%	39,599	18.9%	41,599	16.6%	47,037	17.4%
3-5 years	29,300	13.3%	30,606	13.3%	27,543	13.1%	29,205	11.6%	34,472	12.8%
6-10 years	45,583	20.7%	47,605	20.8%	42,386	20.2%	46,065	18.3%	52,790	19.6%
11-15 years	49,285	22.4%	51,807	22.6%	46,884	22.4%	52,799	21.0%	56,568	21.0%
16-18 years	26,090	11.9%	27,457	12.0%	26,020	12.4%	29,575	11.8%	32,158	11.9%
19+ years	27,807	12.6%	28,556	12.5%	27,178	13.0%	51,815	20.6%	46,592	17.3%
Race/Ethnicity*										
Asian, non-Hispanic	7,113	4.2%	7,049	4.2%	6,200	4.1%	8,808	4.9%	12,070	5.6%
Black, non-Hispanic	17,322	10.3%	17,343	10.2%	15,040	10.0%	17,485	9.7%	20,471	9.5%
Hispanic	26,576	15.9%	27,469	16.2%	24,531	16.3%	28,903	16.0%	35,534	16.4%
White, non-Hispanic	101,566	60.7%	102,572	60.4%	91,079	60.5%	109,606	60.7%	129,433	59.9%
Other, non-Hispanic	12,450	7.4%	12,734	7.5%	11,561	7.7%	12,704	7.0%	14,610	6.8%
Multiracial, non-Hispanic	2,352	1.4%	2,644	1.6%	2,173	1.4%	3,129	1.7%	4,065	1.9%
Patient Origin										
HSA_1: Western MA	3,834	1.7%	4,153	1.8%	3,794	1.8%	4,430	1.8%	4,465	1.7%
HSA_2: Central MA	13,073	5.9%	14,123	6.2%	12,784	6.1%	15,924	6.3%	16,687	6.2%
HSA_3: Northeast	40,184	18.3%	41,660	18.2%	38,262	18.3%	43,474	17.3%	46,020	17.1%
HSA_4: Metro West	74,532	33.9%	76,312	33.3%	69,264	33.0%	86,830	34.6%	92,343	34.2%
HSA_5: Southeast	29,870	13.6%	32,111	14.0%	30,213	14.4%	36,510	14.5%	37,397	13.9%
HSA_6: Boston	43,052	19.6%	44,850	19.6%	40,469	19.3%	51,004	20.3%	52,965	19.6%
Unknown	15,312	7.0%	16,133	7.0%	14,824	7.1%	12,886	5.1%	19,740	7.3%
Payor Mix	Medicaid	All Other	Medicaid	All Other	Medicaid	All Other	Medicaid	All Other	Medicaid	All Other
HSA_1: Western MA	53.4%	46.6%	57.7%	42.3%	56.3%	43.7%	59.5%	40.5%	57.8%	42.2%
HSA_2: Central MA	34.8%	65.2%	36.6%	63.4%	33.9%	66.1%	36.5%	63.5%	31.6%	68.4%
HSA_3: Northeast	36.5%	63.5%	37.4%	62.6%	41.1%	58.9%	40.3%	59.7%	42.9%	57.1%
HSA_4: Metro West	20.2%	79.8%	21.0%	79.0%	25.7%	74.3%	22.7%	77.3%	28.3%	71.7%
HSA_5: Southeast	41.6%	58.4%	40.9%	59.1%	38.9%	61.1%	45.1%	54.9%	44.6%	55.4%
HSA_6: Boston	61.3%	38.7%	61.4%	38.6%	60.0%	40.0%	62.0%	38.0%	64.0%	36.0%
Unknown	35.8%	64.2%	31.7%	68.3%	36.9%	63.1%	37.3%	62.7%	37.7%	62.3%

Total	37.7%	62.3%	38.2%	61.8%	39.8%	60.2%	40.4%	59.6%	42.2%	57.8%
*Race/Ethnicity excludes unique patients listed as "Unknown" and therefore has a different denominator than the total count listed above.										
*** Payor mix based on percentage of total charges										

**Table 2. Demographics of Boston Children's Massachusetts Patient Panel for Emergency Services**

- Age percentages may not add up to 100% due to patients having a different age at multiple visits during the year.
- Race/Ethnicity excludes unique patients listed as "Unknown" and therefore has a different denominator than the total count listed above.
- Payor mix based on percentage of total charges.

**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.**

National data indicates that children account for approximately 20% of all ED visits, which represents more than 27 million total ED visits in the United States.<sup>3</sup> Children are inherently a vulnerable population and the potential lifelong consequence of poor health is considerable. Therefore, access to optimal emergency care is important. High inpatient occupancy rates directly impact patient wait times and contribute to longer length of stays in emergency departments.<sup>4</sup> When inpatient units are unable to admit new patients from the ED, these patients must board in the ED until a bed is available, often resulting in overcrowding of emergency departments. Overcrowding and boarding of patients compromise clinical care, decrease patient satisfaction, strain access to emergency care and drive higher overall health care costs.

BCH's five average bed occupancy is 88.5%. This high occupancy has a downstream effect on patients in the emergency department waiting placement. Like most hospitals nationally, BCH witnessed decrease in utilization in 2020 related to the COVID-19 pandemic. Utilization of health care resources have returned to and exceed pre-pandemic levels. The number of patients receiving observation care in the emergency department increased 439% from 1,068 in 2018 to 4,688 in 2022. Both wait times and the percent of patients receiving care in hallways have continued to increase during this time period. This overcrowding, despite the

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<sup>3</sup> See Wier et al. *Overview of Children in the Emergency Department, 2010*. Agency for Healthcare Research and Quality, available at [Overview of Children in the Emergency Department, 2010 - Healthcare Cost and Utilization Project \(HCUP\) Statistical Briefs - NCBI Bookshelf \(nih.gov\)](#)

<sup>4</sup> See Forster et al., *The Effect of Hospital Occupancy on Emergency Department Length of Stay and Patient Disposition*. Academic Emergency Medicine 127 (2003), available at [The Effect of Hospital Occupancy on Emergency Department Length of Stay and Patient Disposition - Forster - 2003 - Academic Emergency Medicine - Wiley Online Library](#)

expansion of emergency department services to alternative sites of care on the campus, has contributed to the increase in the number of patients leaving without care being initiated. In 2018, 0.6% of the patients registered in the emergency department left without care being initiated. This percentage has grown to 2.4% by 2022. See, Table 3 below. Expansion of the emergency department will provide more appropriate care settings for patients and reduce the number of alternative care sites needed, thereby driving better patient experience and operational efficiencies.

Table 3: Operational Metrics for Emergency Department

	2018	2019	2020	2021	2022
Longwood Bed Occupancy	90.1%	90.7%	79.5%	88.6%	93.2%
Observation Patients in the ED	1,068	1,825	1,910	4,458	4,688
% of Patients Waiting > 2 hours	6.3%	8.9%	5.4%	22.1%	18.3%
% of Patients Leaving Before Care Initiated	0.6%	0.9%	0.5%	3.4%	2.4%
% of Patients seen in Hallways	2.3%	3.7%	2.9%	8.4%	13.1%
% of Patients seen in Alternative Care Sites	17.3%	19.6%	10.1%	25.6%	36.9%

Scientific advances have resulted in the availability of childhood vaccines for once fatal illnesses. It has been reported that routine childhood immunizations prevented over 17 million cases of disease and 31,000 deaths; 853,000 life years and 892,000 quality adjusted life years were gained. Societal disease related cost savings totaled \$63.6b, with the highest savings being cause by averted cases of diphtheria, measles and pneumococcal disease.<sup>5</sup> The COVID 19 pandemic and related stay at home orders impaired efforts to administer routine pediatric immunizations. During the 2020-2021 school year, the percentage of children who had received all required vaccines dropped from 95% to 94%.<sup>6</sup> Inequities experienced by communities of color exist. Among 24 month olds, vaccine rates for

<sup>5</sup>See, Carrico, et al, *Value of the Immunization Program for Children in the 2017 US Birth Cohort*. Pediatrics, (September 2022) available at [Value of the Immunization Program for Children in the 2017 US Birth Cohort - PubMed \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/39888888/)

<sup>6</sup> See, Seither, et al, *Vaccination Coverage with Selected Vaccines and Exemption Rates Among Children in Kindergarten*, MMWR (2022) available at [Vaccination Coverage with Selected Vaccines and Exemption Rates Among Children in Kindergarten — United States, 2021–22 School Year | MMWR \(cdc.gov\)](https://www.cdc.gov/mmwr/mmwr-reports.html)

the combined 7 vaccine series, influenza and rotavirus are lower for non-Hispanic Black and Hispanic toddlers compared to White toddlers.<sup>7</sup>

The proposed project aims to open a nurse run vaccine program that provides access to patients for routine and travel required childhood immunizations. In particular, the program targets medically complex children who often see their specialists more frequently than their pediatrician. Convenient access to these immunization for this vulnerable and often disabled population is designed to improve patient outcomes. Additionally, migrants and people experiencing homelessness present to the emergency room for multiple reasons. Access to state resources such as shelter placement, day care, and school enrollment are dependent on up-to-date immunization status. BCH's conveniently located project will provide access to state funded vaccines.

Last, BCH proposed expansion of the ultrasound imaging suite to accommodate pediatric patients who require low dose imaging is included in this application as the combined capital expenditures for FY24 exceed the minimum capital expenditure.

#### **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 Proposed Project will compete on the basis of price, total medical expenses ("TME"), provider costs, and other recognized measures of health care spending, and will meaningfully contribute to Massachusetts' goals for cost containment by ensuring timely and equitable access to emergency services and routine childhood immunizations. Overcrowding and boarding of patients in an emergency department has negative consequences on patient care and hospital operations. Patients are prevented from being treated in a timely manner which leads to

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<sup>7</sup> See, Hill et al, *Vaccination Coverage by Age 24 Months Among Children Born During 2018-2019 – National Immunization Survey Child*, MMWR (January 2023) available at [Vaccination Coverage by Age 24 Months Among Children Born During 2018–2019 — National Immunization Survey–Child, United States, 2019–2021 | MMWR \(cdc.gov\)](https://www.cdc.gov/mmwr/preview/mmwrhtml/ww0107a3.htm)



increased rates of patients leaving the ED prior to initiating care. See, Table 3. As noted in the Applicant's response to F1.a.ii, access to routine childhood immunizations improves mortality rates and lowers the lifetime cost of care for patients who receive these immunizations. The proposed project renovates BCH's current physical plant. BCH will be able to use existing resources to reduce the overall cost of the project. Moreover, the Proposed Project will allow the Applicant to expand upon efforts to address the social determinants of health, ultimately leading to cost reductions. Finally, the Proposed Project meets the Commonwealth's goals for cost containment through the provision of timely care in an appropriate setting, and translates to better patient clinical quality outcomes and reduced costs.

**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.**

The Proposed Project is designed to implement space modifications to the existing plant to meet the documented overcrowding of the emergency department, convenient access to childhood immunizations and ultrasound imaging. The care that will be provided in these spaces will positively impact hospital operations, increase patient satisfaction and health outcomes, and ensure timely access to pediatric care as previously described.

**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 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. % of Patients Waiting > 2 hours

2. % of Patients Treated in the Hallways
3. % of Patients Left Before Care was Initiated
4. Number of Immunizations administered

**F1.b.iii, Public Health Value/Health Equity-Focused (Reducing Health Inequity)**

**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 Proposed Project will provide the Applicant with the facilities to continue to promote health equity, including among the underserved, and will not restrict the accessibility of either services for vulnerable and/or Medicaid-eligible individuals. The Applicant does not discriminate based on ability to pay. Throughout the United States, Medicaid, together with the Children's Health Insurance Program, covers almost half of all children with special health care needs.<sup>8</sup> According to the Massachusetts Medicaid Policy Institute, approximately 41% of children and young adults in the Commonwealth are covered by MassHealth.<sup>9</sup>

The Proposed Project will provide needed services to MassHealth patients. As noted in Factor F1a.i above, 42.2% of the Hospital's patients in 2022 received insurance coverage through MassHealth. Within the emergency room services, 51.3% of the patients received insurance coverage through Mass Health. 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

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<sup>8</sup> See Elizabeth Williams and MaryBeth Musumeci, *Children with special health care needs: Coverage, affordability, and HCBS Access*, KFF (October 4, 2021), available at <https://www.kff.org/medicaid/issue-brief/children-with-special-health-care-needs-coverage-affordability-and-hcbs-access/>.

<sup>9</sup> See MASS. MEDICAID POL'Y INST., *MassHealth: The Basics, Facts and Trends* (October 2020), available at [https://www.bluecrossmafoundation.org/sites/g/files/csphws2101/files/2020-10/MassHealthBasics\\_Oct2020\\_Final.pdf](https://www.bluecrossmafoundation.org/sites/g/files/csphws2101/files/2020-10/MassHealthBasics_Oct2020_Final.pdf).

language, including as it relates to population health priorities such as obesity and asthma. The Applicant is tracking vaccine administered by race and ethnicity.

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.<sup>16</sup> 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) 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.

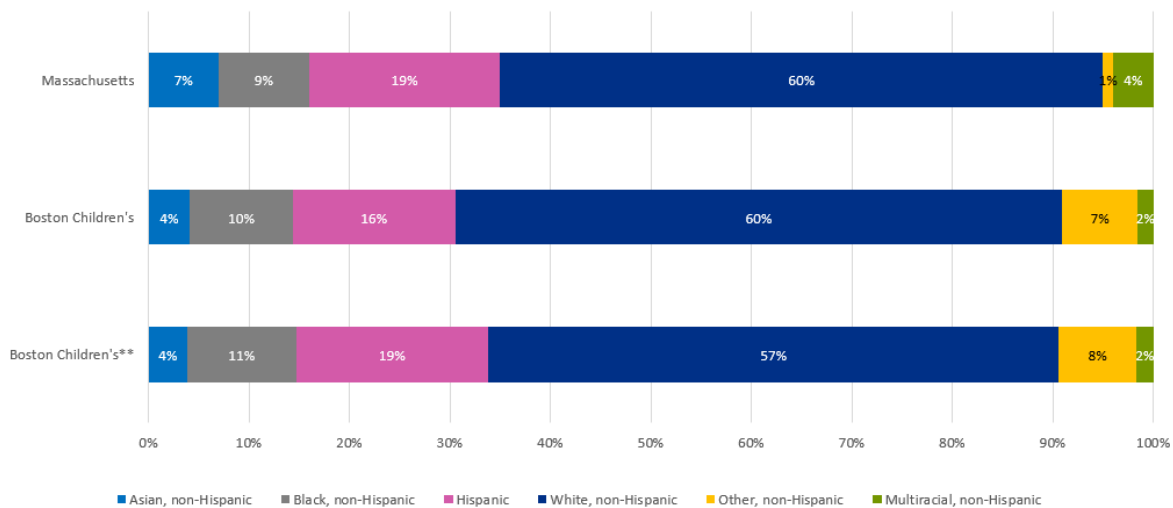
In 2020, the Hospital's leaders released a Declaration on Equity, Diversity, and Inclusivity, establishing six goals that prioritize health equity, which will apply to the Proposed Project. Among the stated goals, the Hospital committed to an inclusive environment, a diverse workforce, eliminating structural 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 (Additional Information)**

**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.**

BCH anticipates that enhanced access to these emergency services and childhood immunizations will allow for timely treatment, which may result in fewer complications and thus improved health and quality of life outcomes. BCH continues to promote health equity and access to all pediatric services. BCH's Patient Panel is that of the Commonwealth, including with respect to race and socioeconomic status as shown below:

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

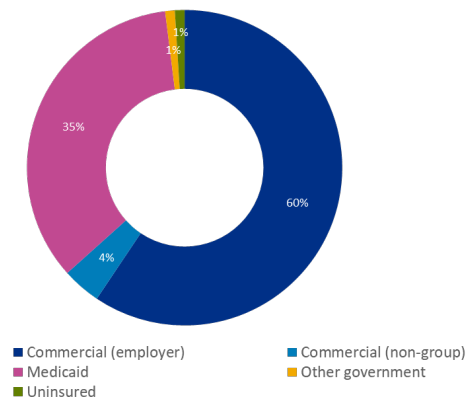
Note: The first two bars (Massachusetts and Boston Children's) represent census/unique patient data.

\*\*This Boston Children's bar represents patient encounter data.

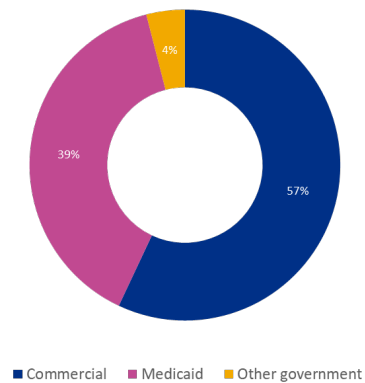
Race/ethnicity data for MA children (2019) and Boston Children's MA patients (FY19)			
	Boston Children's **	Boston Children's	Massachusetts
Asian, non-Hispanic	4%	4%	7%
Black, non-Hispanic	11%	10%	9%
Hispanic	19%	16%	19%
White, non-Hispanic	57%	60%	60%
Other, non-Hispanic	8%	7%	1%
Multiracial, non-Hispanic	2%	2%	4%
Sources: 2020 KIDS Count Data Book, Annie E. Casey Foundation; Boston Children's internal data			
Note: The last two columns represent census/unique patient data.			
**This Boston Children's column 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)



Health insurance coverage for MA children	
	Payor Mix for MA children age 0-18 (2019)
Commercial (employer)	60%
Commercial (non-group)	4%
Medicaid	35%
Other government	1%
Uninsured	1%

Health insurance coverage for Boston Children's MA patients (FY19)	
	Payor Mix for Boston Children's MA patients (FY19)
Commercial	57%
Medicaid	39%
Other government	4%

### **F1.c, Furthering and Improving Continuity and Coordination of Care**

**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.**

BCH provides primary care services to over 400,000 children throughout the Commonwealth. Primary care is provided directly at its primary care center, Children's Hospital Primary Care Center, and through the Pediatric Physicians' Organization at Boston Children's Hospital ("PPOC"), a network of more than 400 licensed health care professionals devoted exclusively to pediatric primary care in collaboration with BCH 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 MassHealth 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 Physician's Organization at Children's	Bowdoin Street Community Health Center	Beth Israel Lahey Health (Beverly, Winchester)	Catholic Memorial (NH)
Martha Elliot Community Health Center	Atrius Health	Brookside Community Health Center	Cape Cod (eff. 7/2021)	Connecticut Children's (CT)
Boston Children's at Lexington	Lahey Clinical Performance Network (LCPN)	Charles River Community Health Center	Milford Regional	Dana-Farber Cancer Institute (Joint Program)
Boston Children's at North Dartmouth	Mt. Auburn/Cambridge IPA (MACIPA)	Dimock Center	Southcoast Health (Fall River, New Bedford, Wareham)	Baystate Medical Center
Boston Children's at Peabody	South Shore Medical Center	East Boston Community Health Center	South Shore (Weymouth)	Beth Israel Deaconess Med Center
Boston Children's at Waltham	South Shore PHO	Mattapan Community Health Center		Boston Medical Center
Boston Children's Physicians Brockton		South Cove Community Health Center		Brigham and Women's
Boston Children's Physicians Milford		South End Community Health Center		Dartmouth-Hitchcock (NH)
Boston Children's Physicians Norwood		Southern Jamaica Plain Community Health Center		Elliot Hospital (NH)
Boston Children's Physicians Weymouth		Upham's Corner Community Health Center		Franciscan Children's
		Whittier Street Community Health Center		Hasbro Children's/Lifespan (RI)
				Maine Medical Center (ME)
				Mass Eye & Ear Institute
				Massachusetts General Hospital
				UMass Memorial Medical Center
				University of Vermont Med Center (VT)

Access to timely childhood immunizations for chronically ill children who see their specialist multiple times a year supports the efforts of pediatricians to ensure all children are vaccinated. Emergency department providers remain in close communication with patient's pediatrician to ensure care is coordinated.

#### **F1.d, Consultation with Government Agencies**

**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.**

BCH sought, and continues to seek, discussions with individuals at various regulatory agencies within the Commonwealth regarding the development of health care services. For the proposed project, BCH connected with the following agencies prior and will ensure continued communication regarding the project:

- Executive Office of Health and Human Services;

- Massachusetts Office of the Attorney General;
- Health Policy Commission;
- Department of Public Health: Office of Legal Counsel, Determination of Need Program, and Division for Children & Youth with Special Health Needs;
- MassHealth;
- Department of Mental Health;
- Boston Public Health Commission; and
- City of Boston.

**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.**

Through its Board of Directors, BCH engages in multi-year planning processes and continuously evaluates opportunities to better serve its Patient Panel and further its mission as such may arise. The BCH has consulted with senior physician leaders, clinical staff, patients, families, community groups, and patient groups. The Proposed Project will provide the necessary physical space to expand on the existing clinical and programmatic pediatric care delivery system in consideration of the ongoing and future need for greater access to pediatric health services.

**F1.e.ii, Evidence of Community Engagement/Public Health Value**

**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".**

Boston Children's engages in a lengthy and ongoing planning process centered on



the hospital'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. With the overall

With the goal of expanding access to medically necessary care, BCH engaged with patient panels, family members, community members, and local stakeholders regarding the overall project. Feedback from the various groups was generally supportive of the Proposed Project.

The key groups contacted by BCH related to the Proposed Project included, but was not limited to:

- Fenway Community Development Corporation
- Boston Public Schools
- Friends of the Children-Boston
- Lauren Dewey-Platt, Fenway Resident
- Patricia Flaherty, Mission Hill Resident
- Juan Lopez, Jamaica Plain Resident
- Tree of Life: Arbol de Vida
- Sociedad Latina
- Boys & Girls Clubs of Boston
- South Cove Community Health Center
- Boston Public Health Commission
- Boston Children's Family Advisory Council

## **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. The provision of timely care in an appropriate setting reduces mortality and morbidity for vulnerable patients with chronic conditions, and leads to better patient outcomes and reduced cost. As documented in response to Factor 1, the provision of childhood immunization has greatly reduced the lifetime cost of care. Furthermore, reducing overcrowding in emergency rooms will lead to a reduction in delays in emergency treatment and would decrease the number of patients leaving prior to initiating care, positively impacting clinical quality outcomes, while reducing cost. The modifications to existing space are an efficient way for BCH to maintain its physical plant.

**F2.b, Public Health Outcomes**

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

As more fully described in Factor 1, the Proposed Project will improve health outcomes by decreasing ED overcrowding with the associated effects on timely, safe emergency care, reducing the dependency on separate overflow sites for emergency care, and increasing access to childhood immunizations. As with cost containment, the Applicant 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. The Proposed Project addresses a clear

and demonstrated need in the Commonwealth for expanded access to pediatric emergency department services and childhood immunizations.

### **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, 2023, had a membership of over 134,000 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

In addition, through its Flexible Services Program, BCH ACO launched two Nutrition Support program and two Housing Support programs. 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 September 2022. The priorities identified in the 2022-2025 Community Health

Implementation Plan include:

1. Promote mental health and emotional wellness
2. Support affordable and stable housing for children and families
3. Promote healthy youth development
4. Increase access to affordable and nutritious food
5. Improve early childhood education, health, and developmental supports
6. Improve the health of children and families managing asthma and obesity

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.

#### **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 Proposed Project includes 8 additional exam rooms and related support space in the emergency department, the creation of a hospital based vaccine program, and two additional ultrasound rooms.

**Quality:** The Proposed Project will improve quality of care by providing expanded capacity to reduce overcrowding in the emergency room and reduce the number of alternative sites of care for patients requiring emergency department services. The expanded access will in turn positively impact patient flow and patient satisfaction. The new vaccine clinic will provide access to childhood and seasonal immunizations for chronically ill and/or vulnerable patient populations who do not have easy access to pediatricians. The addition of two ultrasound rooms will provide the necessary space to solve current support space and accessibility deficiencies. Overall, these improvements will result in enhancements in health

outcomes and quality of life for BCH's patient panel as detailed throughout this narrative.

**Efficiency:** The Proposed Project is designed to create additional capacity in the emergency department, which will help alleviate access and throughput concerns across referring hospitals who request transfer into a Boston Children's Hospital for specialized care, ensure that patients receive care in the most appropriate setting, and, thereby, provide efficiencies in care and costs. The renovation of shell space within the current foot of the Radiology suite and co-located adjacent to the existing ultrasound suite will optimize the use of support space and staff.

**Capital Expense:** The total capital expenditure for the Proposed Project is \$34,020,000. The Proposed Project represents the most cost-effective approach to addressing the needs of the Applicant's under-resourced patient panel and ensuring the Hospital's long-term ability to provide high-quality care. The design maximizes use of BCH's existing space with strategic renovations rather than more costly expansion to a new building.

**Operating Cost:** There are operating cost associated with the Proposed Project. The average annual incremental operating cost of the Proposed Project are estimated at \$3,000,000.

With respect to the aspects of the Proposed Project, BCH explored several alternatives. For the expansion of the emergency department, it is important to have the space adjacent to the current emergency room. Renovation of existing offices for staff in the emergency department was evaluated. This space would not be directly connected to the current emergency department and would require duplication of clinical and staff support space. Additionally, height restrictions of the space limit the ability to add plumbing. Last, this option would not address any of the deficiencies with the existing check/in and triage function in the emergency department. This option was eliminated given the additional operating expense and deficiencies in achieving the design. The vaccine program must be located in a central located public space on the main campus in order to provide access to patients who are receiving care across the campus. The only available space that meets that requirement is the current Patient Entertainment Center. Renovation of this space for this purpose enables the program to provide the needed access to services with minimal disruption to operations. The addition of two ultrasound

exam rooms in shell space adjacent to the existing ultrasound department provides a turn-key approach, which allows ultrasound to remain operational during construction and optimize the use of staff and support space. All alternative proposals would have resulted in a less operationally efficient design and/or were deemed infeasible.

The Proposed Project seeks to meet patient demands as described in this document. The Proposed Project continues the Applicant's commitment to facilitate a nation-leading programmatic and facilities transformation to improve access to, and delivery, of compassionate, equitable, family centered and evidence-based care to children in Massachusetts and across New England. 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 or infeasible.