

STAFF REPORT TO THE PUBLIC HEALTH COUNCIL FOR A DETERMINATION OF NEED	
Applicant Name	Beth Israel Lahey Health, Inc.
Applicant Address	20 University Road, Suite 700, Cambridge, MA 02138
Filing Date	August 16, 2024
Type of DoN Application	Substantial Capital Expenditure
Total Value	\$50,237,091.00
Project Number	BILH-23102414-HE
Ten Taxpayer Group	None
Community Health Initiative	\$2,511,854.55
Staff Recommendation	Approval
Public Health Council	December 11, 2024
<p style="text-align: center;"><u>Project Summary and Regulatory Review</u></p> <p>Beth Israel Lahey Health, Inc. is filing a Notice of Determination of Need with the Department of Public Health for the renovation and expansion of the Emergency Department at Beth Israel Deaconess Hospital - Plymouth, located at 275 Sandwich St, Plymouth, MA 02360. The capital expenditure for the Proposed Project is \$50,237,091.00; the Community Health Initiatives (CHI) contribution is \$2,511,854.55.</p> <p>This DoN application falls within the definition of Substantial Capital Expenditure, which is reviewed under the DoN regulation 105 CMR 100.000. The Department must determine that need exists for a Proposed Project, on the basis of material in the record, where the Applicant makes a clear and convincing demonstration that the Proposed Project meets each Determination of Need Factor set forth within 105 CMR 100.210. This staff report addresses each of the six factors set forth in the regulation.</p>	

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## Applicant Background and Application Overview

### Beth Israel Lahey Health, Inc.

The Beth Israel Lahey Health, Inc (BILH or Applicant), is a Massachusetts, non-profit, tax-exempt corporation that oversees an integrated health care delivery system comprised of teaching and community hospitals, physician groups, behavioral health providers, post-acute care providers and other caregivers serving patients in Greater Boston and the surrounding communities in Eastern Massachusetts and Southeastern New Hampshire.<sup>1</sup>

Collectively known as “BILH Hospitals,” BILH’s member hospitals include:

**Table 1: BILH Hospitals**

<b>Acute Hospital<sup>2</sup></b>	<b>Type (Per CHIA Category <sup>a, b</sup>)</b>
Anna Jaques Hospital	Community Hospital
Beth Israel Deaconess Hospital–Milton	Community Hospital
Beth Israel Deaconess Hospital–Needham	Community Hospital
Beth Israel Deaconess Hospital–Plymouth	Community-High Public Payer Hospital
Beth Israel Deaconess Medical Center	Academic Medical Center
Lahey Hospital & Medical Center	Teaching Hospital
Mount Auburn Hospital	Teaching Hospital
New England Baptist Hospital	Specialty Hospital
Northeast Hospital	Community-High Public Payer Hospital
Winchester Hospital	Community Hospital

BILH operates Beth Israel Lahey Health Performance Network, LLC (BILHPN), a Massachusetts Health Policy Commission (HPC) certified Accountable Care Organization (ACO), which the Applicant states is a value-based physician and hospital network whose goal is to partner with other community hospitals and providers throughout Eastern Massachusetts to improve quality of care while managing medical costs.

### Beth Israel Deaconess Hospital – Plymouth

Beth Israel Deaconess Hospital-Plymouth (BID-P or Hospital), is a 170-bed acute care hospital serving the communities of Plymouth, Carver, Kingston, Middleboro, Duxbury, Marshfield, Bourne, Pembroke, Sandwich, Halifax, and Plympton. The Hospital provides a full range of comprehensive community hospital services including primary and preventative care, emergency services, inpatient acute care, inpatient psychiatric services, and specialty services. The Hospital joined Beth Israel Deaconess in 2014.

<sup>1</sup> The Applicant states that an estimated five million people reside in the BILH service area.

<sup>2</sup> Beth Israel Lahey Health includes the following Hospitals: Addison Gilbert Hospital (Northeast), Anna Jaques Hospital, Beth Israel Deaconess Hospital – Milton, Beth Israel Hospital – Needham, Beth Israel Hospital – Plymouth, Beth Israel Deaconess Medical Center, Beverly Hospital (Northeast), Lahey Hospital & Medical Center, Lahey Medical Center, Peabody, Mount Auburn Hospital, New England Baptist Hospital, and Winchester Hospital.

## Proposed Project

The Proposed Project includes the renovation of the existing Emergency Department (ED) and adjacent areas, as well as an 8,051-square-foot addition, resulting in a 29,060-square-foot department comprised of 37 private treatment rooms, a separate behavioral health unit comprised of 16 private behavioral health rooms, an 11 bed vertical treatment unit,<sup>3</sup> two triage rooms, a two-position trauma room, administrative areas, and significantly enhanced clinical support spaces. Table 2 provides an overview of the Proposed Project changes.

**Table 2: BID-P's ED Composition of Beds**

	Current	Proposed Project	Net New
Trauma <sup>4</sup>	2	2	0
Triage/Fast Track	2	2	0
Behavioral Health	7	16	9
Flex Space/ Vertical Treatment <sup>5</sup>	11	11	0
Private Rooms	5	37	32
Hallway Stretchers	15	0	-15
Curtained Bays	12	0	-12
Cubicles	4	0	-4
<b>Total</b>	<b>58</b>	<b>68</b>	<b>10</b>

In total, the ED will include 68 treatment beds in private, walled spaces that include monitoring and treatment equipment. Existing imaging equipment embedded in the ED, including two X-ray machines and two computed tomography units, will not change. The Applicant expects no significant changes to its Payer Mix as a result of the Proposed Project. The Applicant provides data, detailed in the next section, to support their assertion that the Hospital ED has been operating over capacity, and the service area would benefit from access to an expanded ED.

## Factor 1

In this section, we assess if the Applicant has sufficiently addressed Patient Panel need, public health value, competitiveness and cost containment, as well as community engagement for the expansion of the ED.

<sup>3</sup> A Vertical Treatment Unit is an area that includes the use of recliner type chairs to provide care rather than stretchers and dedicated private rooms. Patients who are determined to have the ability, based on acuity assigned at triage, to be able to sit in a chair to receive their care will be assigned to the Vertical Treatment Unit in order to maintain availability of the ED's treatment beds. The use of a vertical treatment area allows the hospital to reserve ED beds for higher acuity patients.

<sup>4</sup> Note that both trauma beds are and will be located in one trauma room (i.e. a "two-position room").

<sup>5</sup> The existing 11 beds are used as flex-space as demand required. Under the Proposed Project, these beds will be used in a designated vertical treatment space for lower acuity treatments.

## Patient Panel<sup>6</sup>

Table 3 below shows the Patient Panel and patient populations from Fiscal Year (FY)2021 through FY2023. During that timeframe, the number of BID-P patients visiting the ED increased by 8%, despite the COVID related decrease in both BILH and BID-P patient volume.

**Table 3: Overview of BILH Patient Volume**

System/ Hospital	FY2021	FY2022	FY2023
BILH Overall Patient Panel	1,434,603	1,389,264	1,398,921
BID-Plymouth	89,731	83,796	82,191
BID-P Emergency Department	27,010	28,387	29,253

The Applicant provided data showing that the top 15 patient origins of their BILH system-wide Patient Panel included Plymouth, Woburn, Beverly, Peabody, Gloucester, Quincy, Boston, Cambridge, Billerica, Burlington, Dorchester, Arlington, Danvers, Medford, and Wilmington<sup>7</sup>. BID-P's top 10 patient origins included Plymouth, Carver, Kingston, Middleboro, Duxbury, Marshfield, Buzzard's Bay, Pembroke, Sandwich, and Halifax.<sup>8</sup> Table 4 shows the demographic characteristics of the BILH Patient Panel, BID-P patient populations, and the BID-P Emergency Department population. Staff notes the following observations:

- **Age-** Patients aged 65+ were the largest patient cohort across all three populations at greater than 30% of unique patients.
- **Race/Ethnicity-** The vast majority (over 75%) of the patients across all three populations identify as white, and Not Hispanic/Latino. This is consistent with the demographics of Plymouth County, as reported by the 2022 US Census.<sup>c</sup>
- **Payer Mix-** The BID-P Emergency Department serves a larger percentage of Medicaid/ Medicare patients (59.4%) than the BILH Overall Patient Panel (46.1%) and BID-P patient Population (51.8%).

**Table 4: BILH Patient Panel and BID-P Patient Population Demographic Profile, FY2023**

	BILH Overall Patient Panel	BID-P Patient Population	BID-P ED Patient Population
<b>Total Unique Patients</b>	1,398,921	82,191	29,253
<b>Gender</b>			
Female	58.6%	57.8%	52.2%
Male	41.0%	42.2%	47.8%

<sup>6</sup> As defined in 105 CMR 100.100, Patient Panel is the total of the individual patients regardless of payer, including those patients seen within an emergency department(s) if applicable, seen over the course of the most recent complete 36-month period by the Applicant or Holder...(2) If the Proposed Project is for a new facility and there is no existing patient panel, Patient Panel means the anticipated patients.

<sup>7</sup> This information is from the Center for Health Information and Analysis ("CHIA") Massachusetts Acute Care Hospital Inpatient Discharge Dataset.

<sup>8</sup> This information is from the Center for Health Information and Analysis ("CHIA") Massachusetts Acute Care Hospital Inpatient Discharge Dataset.

	BILH Overall Patient Panel	BID-P Patient Population	BID-P ED Patient Population
Other <sup>9</sup>	0.5%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Age</b>			
0 to 17	7.0%	8.2%	10.5%
18 to 25	12.1%	5.9%	7.6%
26 to 45	30.2%	20.3%	22.5%
46 to 64	18.3%	28.8%	24.2%
65 and Older	32.4%	36.9%	35.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Race</b>			
White	75.6%	88.5%	92.1%
Black or African American	5.6%	2.3%	3.7%
American Indian or Alaska Native	0.1%	0.1%	0.1%
Asian	6.8%	0.6%	0.5%
Native Hawaiian or Other Pacific Islander	0.1%	0.0%	0.1%
Other <sup>10</sup>	4.8%	1.7%	2.8%
Unknown	5.6%	0.0%	0.0%
Patient Declined	1.4%	6.7%	0.8%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Ethnicity</b>			
Hispanic or Latino	3.8%	1.88%	3.54%
Not Hispanic or Latino	88.8%	87.10%	91.42%
Other	2.2%	0.0%	0.0%
Unknown	4.8%	11.02%	5.04%
Patient Declined	0.4%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Payer Mix</b>			
Commercial	50.5%	40.3%	34.0%
Medicaid	16.1%	17.7%	23.4%
Medicare	30.0%	34.1%	36.0%
Other <sup>11</sup>	3.3%	7.9%	6.6%
Unknown	0.1%	0.1%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

<sup>9</sup> Includes genders other than male/female, as well as patients for whom a gender is not specified, and whose gender varies across visits over the time period.

<sup>10</sup> "Other" is a choice for patients to select if they do not feel that their race/ethnicity is reflected in the list of choices.

<sup>11</sup> Includes self-pay, health safety net, and liability coverage other than worker's compensation for an injury event.

## Factor 1: a) Patient Panel Need

In this section, staff assesses if the Applicant has sufficiently addressed Patient Panel need for the Proposed Project. The Applicant attributes Patient Panel need for the Proposed Project to the following:

- 1) Emergency Department Consistently Operating Over Capacity
- 2) Insufficient Space for Behavioral Health Needs
- 3) Projected Increases in ED Utilization

### **1) Emergency Department Consistently Operating Over Capacity**

BID-P's Emergency Department was originally built more than 30 years ago in 1993 and was designed to accommodate a volume of approximately 25,000 annual visits. In FY2023, BID-Plymouth ED saw 43,609 visits, nearly 75% more visits than intended when the ED was designed. Table 5 demonstrates the consistent rise in ED volume over the past 5 years.

**Table 5 – Historical BID-P Emergency Department Volume**

	FY2020	FY2021	FY2022	FY2023	FY2024 <sup>12</sup>	Change 2020-2024
ED Visits	39,142	40,180	42,367	43,609	45,952	17.4%

As illustrated in the Table 5 above, BID-Plymouth's ED has been treating a greater number of patients than the space was designed to accommodate for several years. In addition to population growth in the area, the Applicant attributes the increase in ED visits to the closure of Compass Medical in May 2023, which left patients without access to their primary and specialty care providers. As a result, many patients delayed routine health maintenance, leading to more patients presenting at the Plymouth ED with moderate acuity issues. The temporary closure of Signature Brockton Hospital also contributed to the increase in ED visits.

The Applicant notes that the majority of patients visiting the ED presented with a moderate level of acuity. In 2024, only 14.4% of patients were categorized on the Emergency Severity Index (ESI)<sup>13</sup> as patients with low acuity needs. Table 6 below details the historical composition of patient severity.

**Table 6 – Historical BID-P Emergency Department Visit Acuity**

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<sup>12</sup> 2024 data has been annualized.

<sup>13</sup> The Emergency Severity Index (ESI) is a five-level triage tool used in emergency departments (EDs) to categorize patients based on their acuity and resource needs:

- Level 1: Most urgent
- Level 2: Needs care within 15 minutes
- Level 3: Needs care within 15 minutes
- Level 4: Needs care within 30 minutes
- Level 5: Least urgent

	FY2020	FY2021	FY2022	FY2023	FY2024 <sup>14</sup>
Low Acuity (ESI 4 and 5)	19.1%	17.3%	16.1%	15.8%	14.4%
Moderate Acuity (ESI 2 and 3)	79.5%	81.2%	82.6%	82.9%	84.2%
High Acuity (ESI 1)	1.4%	1.5%	1.3%	1.3%	1.3%

The Hospital attributes the decline in low acuity ED visits to initiatives it has put into place to facilitate patients receiving care in the right setting. These initiatives included educational materials about the variety of locations to receive care, an in-home care option, and an increase in primary care providers in the area. Despite these efforts to treat lower acuity patients in the primary or urgent care setting, the ED continues to see an increase in moderate acuity patient volume seeking care in the ED.

According to the Applicant, the mismatch between the size of the ED and the volume of patients frequently results in overcrowding, delayed treatment or no treatment at all as patients choose to leave without being seen, and strained resources. Table 7 provides ED Utilization details, showing increases in wait times, total lengths of stay (TLOS) for all patients, and the percentage of patients who left without being seen (LWBS).

**Table 7 – Historical BID-P Emergency Department Utilization**

	FY2020	FY2021	FY2022	FY2023	FY2024 <sup>15</sup>	Change 2020- 2023
Avg. Arrival to Treatment Space (minutes)	11	59	90	91	82	727%
Avg. Total TLOS - All Patients (minutes)	391	440	475	468	483	19.7%
Median TLOS - All Patients (minutes)	279	311	324	329	324	17.9%
Avg. TLOS - Admitted & Acute Transfers (minutes)	480	594	675	693	760	44.3%
Median TLOS - Admitted & Acute Transfers (minutes)	365	438	466	521	568	42.7%
Percent of LWBS	0.9%	1.4%	3.0%	2.6%	2.1%	
Percent of Eloped <sup>16</sup>	0.4%	0.5%	0.6%	0.7%	0.5%	

<sup>14</sup> 2024 data has been annualized.

<sup>15</sup> 2024 data has been annualized.

<sup>16</sup> An eloped patient is one who had care initiated in the ED or a Medical Screening exam was performed, but left prior to treatment or discharge by provider.



With an ED that the Applicant describes as “undersized”, patients are experiencing increasingly long wait times to be seen by a provider (as illustrated in Table 7), and may be placed in a hallway bed to receive care. Even during periods without overcrowding, most patients are seen in shared spaces, such as cubicles and bays, which do not provide acoustic privacy and do not have optimal configurations of supporting infrastructure and/or equipment to allow for efficient patient care.

Without the space and resources provided through the Proposed Project, BID-P’s patients will continue to experience long wait times (from arrival to treatment space) in the ED, the Applicant suggests it is likely that more patients will decide to forego care until their condition worsens, leading to higher cost, treatment (covered in more detail in factor 1F). The Applicant asserts that creating sufficient capacity within the Hospital’s ED will improve wait times and care delivery.

## ***2) Insufficient Space for Behavioral Health Needs***

The Proposed Project will more than double the ED’s capacity to care for patients experiencing acute behavioral health emergencies. In FY2023, the BID-P Behavioral Health Emergency Services Program completed 2,044 assessments in the Hospital’s ED, but only had seven dedicated behavioral health ED beds. The Hospital concluded that 16 total behavioral health beds would provide sufficient capacity by using the number of behavioral health visits in the ED from 2018 to 2021 as a guide. A total of 16 beds will allow the Hospital to accommodate peak volumes and improve patient comfort during their time in the ED. The Applicant notes that the average length of stay for behavioral health patients in the ED was approximately 22.7 hours in FY2023. Staff inquired about the utilization data specific to behavioral health visits in the ED. In response, the Applicant stated that BID-P does not classify ED patients as strictly “behavioral” or “non-behavioral” when they arrive at the ED for help and therefore could not provide the requested data. In response to whether BID-P would have the ability to serve the increased volume of Behavioral Health patients through their inpatient beds, the Applicant stated that inpatient Behavioral Health capacity doesn’t dictate where patients will access the ED, and the Proposed Project is meant to improve the ED’s ability to manage Behavioral Health patients, not all of whom will require admission.

As with the current unit, the expanded unit will be physically separate from the main ED in order to maintain a calmer, quieter, more therapeutic environment that will promote the de-escalation or stabilization of patients that is harder to achieve in the main ED. The expanded new space will allow for more than one age population to be cared for by creating a barrier between the two sides. Currently, the ED is unable to care for older adults in the behavioral health unit because of limited accessibility. Through the Proposed Project, the ED will be both accessible to older adults, and allow for older adults to be cared for simultaneously to children or adolescents because of the ability to bifurcate the unit. The unit will be staffed by dedicated clinicians, including psychiatrists, psychologists, and licensed social workers, with experience to work with, treat, and care for patients with behavioral health needs. Staff inquired about the

Applicant's staffing plan for the unit. Currently, the behavioral health unit has 4.2 registered nurses (RN), 4.2 Technicians, and 4.2 Public safety Officers for a total of 12.6 full-time employees. The Applicant explained that clinicians in each discipline are assigned to care for patients in the behavioral health unit daily based on volume/ acuity, and that additional positions will be added to the current roster proportionate to volume. The current per diem workforce will be utilized to assist with initial growth during the period of recruitment directly following project completion. Recruitment efforts will continue and include new nurse residents and nurse transitions to specialty unit programs.

### **3) Projected Increases in ED Utilization**

Annually, Plymouth's population is growing at a rate of 3.52% and is expected to grow by an additional 10,000 residents by 2035.<sup>d</sup> BID-P anticipates this moderate population growth will fuel the continued growth in ED volume demonstrated in the Historical ED Volume. Table 7 provides volume projections for the first five years following the opening of the new ED.

**Table 7 – Projected BID-P Emergency Department Volume**

<b>Projected Volume</b>	<b>FY2029</b>	<b>FY2030</b>	<b>FY2031</b>	<b>FY2033</b>	<b>FY2034</b>
ED Visits	49,738	50,733	51,747	52,782	53,838

In order to meet the community's current and projected need for emergency services, the Hospital determined that a total of 68 treatment beds would be needed. The Applicant determined this by using an annual growth rate of 2%, which was a conservative rate based on the projected 3.52% projected annual growth in population for the service area. A 2% growth rate for emergency services was applied to the Hospital's projections to account for better utilization of virtual care, telemedicine, primary care, and urgent care for low acuity conditions. As these services are used more consistently for patients who would have gone to the ED with ESI level 5 or level 4 complaints, the Applicant anticipates emergency services will grow at a slightly lower rate than the population.

Given that the Proposed Project is not expected to achieve completion until 2029, the Hospital has several plans to manage capacity in the interim. BID-P has engaged the Berkeley Research Group to conduct an assessment of ED throughput opportunities and has begun implementation of the interventions identified. These initiatives include adjusting staffing patterns in real time to meet patient demand, focusing on reducing turnaround times for diagnostic imaging studies through the addition of another teleradiology service when testing volume warrants additional radiologists to interpret completed studies, and implementing laboratory point of care testing within the Emergency Department to improve laboratory testing turnaround times. In addition, BID-Plymouth convened an ED Throughput Multidisciplinary Steering Team to oversee the workgroups responsible for implementing the above strategies, evaluating outcomes, and identifying the potential need for additional interventions.

The Hospital has also developed a three-phase plan for managing care during construction that will use the space available in the most efficient manner until the expansion is completed. Phase I, which will be accomplished in two sub-phases, includes construction the new addition to the ED, and then renovating the front end of the existing emergency department taking the existing waiting area, reception, triage, four treatment bays, security office, and supporting administrative areas offline since the aforementioned areas will have moved into the new addition. Phase II will then renovate the vacant portion of an existing infusion department to create a new secure-holding behavioral health area for the ED. Phase III will be accomplished in two sub-phases that will renovate the remaining portion of the existing emergency department that does not contain the existing secure-holding behavioral health rooms, and finally renovate the existing emergency department secure-holding behavioral health space.

The addition of treatment beds is calculated to allow for up to approximately 65,000 visits annually, as well as the timely movement of patients to treatment rooms from the waiting room, which is likely to reduce delays in treatment. The ability to move patients from the waiting room to a treatment room in a timely manner not only improves care delivery, but improves the patient experience by providing a private, more comfortable environment during what is usually a stressful time for patients experiencing a medical emergency. Through the addition of the requested beds, the ED will be able to accommodate current community needs and projected growth in volume consistent with population projections.

### ***Analysis***

Staff finds that the Applicant has demonstrated sufficient need for ED expansion to address the growing volume of annual visits to the ED. The Proposed Project will allow the Applicant to meet the current and future increase in the number of patients seeking moderate to high acuity care that cannot be diverted to lower acuity settings. The expansion would allow for greater access to emergency Behavioral Health assessment and treatment in the region, and has the potential to reduce wait times for all ED patients. As a result, Staff finds that the Proposed Project meets the requirements of Factor 1a.

## **Factor 1: b) Public Health Value through Improved Health Outcomes and Quality Of Life; Assurances Of Health Equity**

In this section, staff will assess if the Proposed Project adds measurable public health value in terms of improved health outcomes and quality of life for the Applicant's existing Patient Panel, while providing reasonable assurances of health equity.

### **Health outcomes and quality of life**

By expanding the ED, the Proposed Project will allow BID-P to improve health outcomes associated with overcrowding, and provide a dedicated Behavioral Health unit within the ED.

### **1) *Impact of Overcrowding on Health Outcomes***

Overcrowding is defined by a high volume of patients compromising the ED's ability to efficiently manage patient flow because of insufficient resources, with the first and most obvious consequence being an increase in patient wait times.<sup>e</sup> Significant wait times from the time a patient registers to when they are seen can reduce the quality of care provided, increase patient discomfort and dissatisfaction, increase the risk of hospital-acquired infections, and lead to more patients leaving before being seen by a physician. All of these factors contribute to reduced health outcomes.<sup>f</sup> The Applicant cited research showing that patients who leave without being seen are more likely to experience worsening health conditions that result in a subsequent ED visit and hospitalization.<sup>g</sup> Overcrowding frequently results in care being provided in ED hallways, which is associated with higher levels of patient morbidity and mortality.<sup>h</sup> These negative health outcomes are likely a result of monitoring that may not be as consistent or reliable as what is provided in permanent ED beds. The Proposed Project will provide additional beds, as well as administrative space for clinical staff to facilitate the movement of patients more efficiently from registration to treatment space to discharge from the ED, which the Applicant asserts will ease overcrowding and improve health outcomes.

### **2) *Dedicated Behavioral Health Unit***

The Applicant cites literature stating that traditional EDs are not designed for the treatment of patients experiencing acute behavioral health emergencies. The chaos and confined spaces of an ED can be distressing, contribute to a patient's anxiety, and may worsen the psychiatric symptoms for which the patient is seeking treatment.<sup>i</sup> Compounding the stressors of the ED's physical environment, the loss of control many patients feel in the ED can result in an escalation of symptoms.<sup>j</sup> As a result, these patients may actually experience worsening symptoms and health outcomes. For behavioral health patients who seek care at the ED, the Applicant noted studies about best practices for EDs to promote a more beneficial experience and improve health outcomes. The first best practice is to create a quiet, calming, dedicated space separate from the main ED.<sup>k</sup> When the goal is to calm the patient, the result is more likely to be a patient who can participate in their immediate treatment.<sup>l</sup> The expanded footprint of the ED in the Proposed Project will provide additional beds and staff dedicated to behavioral health, which the Applicant anticipates will improve outcomes for patients seeking assistance at the ED.

To assess the impact of the Proposed Project, the Applicant proposed metrics, as well as metric projections for quality indicators that will measure the impact of the Proposed Project. The measures include patient satisfaction, wait times, and LWBS data. The measures are presented in Appendix I and will be reported to DPH on an annual basis following implementation of the Proposed Project.

### ***Analysis: Public Health Value: Health Outcomes and Quality of Life***

Staff finds that adding capacity to the ED has the potential to improve health outcomes for the Patient Panel and the greater community. When insufficient ED capacity leads to overcrowding, the relevant literature suggests treatment outcomes suffer.<sup>m,n</sup> The Proposed Project will have a dedicated Behavioral Health unit with greater bed capacity within the ED, which has the potential to improve the patient experience by providing treatment in a more comfortable setting than a hallway stretcher, and has the potential to ease congestion and wait times in the ED. As a result, Staff finds that the Applicant meets the requirements of the Public Health Value: Health Outcomes and Quality of Life part of Factor 1b.

### ***Health Equity and Social Determinants of Health (SDOH)***

The Applicant states that Proposed Project will work to reduce health inequity through increasing and improving access to emergency services to the Plymouth community. BID-P does not discriminate on the basis of age, race, ethnicity, gender/gender-identity, physical ability, sensory or speech limitations, or religious, spiritual and cultural beliefs, nor a patient's ability to pay or payer source. BID-P has implemented the following initiatives to facilitate equitable access to its services:

**Language Accessibility:** Interpretation services are available at BID-P at no charge. These services are offered in person, by video, and by telephone for over 100 different languages, and can be used 24 hours a day. Trained interpreters assist during hospitalization and inform patients and their families about procedures, medication, and other important information. BID-P's medical interpreters also assist patients and family members with outpatient testing and treatment, during hospitalizations and in the ED. BID-P currently employs one full time medical interpreter/coordinator and one per diem medical interpreter (a resource shared across all hospital departments). In addition, BID-P has 12 iPads, at least one for each unit, used for video remote interpreting (VRI), which helps reduce wait times and increases effectiveness and efficiency of language services. BID-P is also currently contracted with three vendors to meet language demands: two that provide VRI and OPI (over the phone) language services and two that provide in person/on site interpreters. In addition, assistive listening devices, such as PocketTalkers and telephone volume amplifiers, are available to assist deaf and hard of hearing patients and family members.

**Connection to Local Resources:** Through patient screenings designed to address Social Determinants of Health (SDoH), BID-P connects patients with resources that may assist the patient. The Hospital has partnered with NeighborWorks, the Plymouth Coalition for the Homeless, and Harbor Community Health to support the medical, social, physical, and economic needs of newly settled migrants in the community. Through its partnership, BID-P has donated over-the-counter medications, infant formula from its birth center as well as baby items collected from a Hospital drive and funding for diapers, wipes and other infant care products. BILH recently launched a resource guide for newly arrived migrants, *Healthcare in Massachusetts: Important Information for*

*Your First Few Months.* The resource guide, which is available in English, Spanish, and Haitian Creole, provides an explanation of care available in the state, how and when to access various levels of care, and other important information such as health insurance enrollment and cash assistance programs.

**Data Collection and Research:** BILH is working to reduce health inequities through the collection of demographic data (Race, Ethnicity and Language (REAL) data). BILH launched a new initiative to request more detailed and complete demographic information from patients and created a multidisciplinary team of representatives from across the System to develop best practices and processes to support consistent capture of data in the electronic medical record (EMR). In addition, BILH recently created the Massachusetts Institute for Equity-Focused Learning Health System Science in collaboration with leaders from other Massachusetts healthcare systems. Funded by a grant from the federal Agency for Healthcare Research and Quality (AHRQ), the Institute seeks to expedite equity-focused research to address health disparities and will work to ensure research of equity measures and social determinants of health is guided by common data standards and led by a diverse group of researchers representative of the Commonwealth's residents and their lived experiences.

#### ***Analysis: Health Equity and SDoH***

The DoN Staff reviewed the Applicant's efforts to ensure equitable care. The Applicant demonstrates efforts to achieve health equity through language accessibility, connection to local resources, and data collection/research that provides a more accurate understanding of the race, ethnicity, and language of their patient population. Staff finds that the Applicant has sufficiently outlined ongoing efforts to achieve health equity. As a result, Staff finds that the Applicant meets the requirements of the Public Health Value: Health Equity part of Factor 1b.

#### **Factor 1: c) Efficiency, Continuity of Care, Coordination of Care**

The Applicant asserts the Proposed Project will promote continuity of care, improved health outcomes, and enhanced quality of life through its 1) Efficient Use of Space to Support Treatment, 2) Technology Infrastructure, and 3) MassHealth ACO Program.

- 1) Efficient Use of Space to Support Treatment:** The redesigned ED space will include physiologic patient monitoring with medical gas capabilities at each treatment bed, allowing greater flexibility to treat more complex and higher acuity patients in all spaces rather than waiting for an appropriately resourced bed to become available. The expansion of a vertical treatment unit will also allow staff to quickly move patients out of the waiting room and initiate treatment for low and moderate acuity patients. By cohorting patients of similar severity, the Hospital will be able to utilize private treatment beds for higher acuity patients, while also ensuring that the ED can flex the vertical treatment space as needed when demand for more complex care is higher

than normal. The Proposed Project provides a dedicated space for patients experiencing a behavioral health emergency. The behavioral health unit will be designed to best meet the needs of this patient population during an acute emergency and establish a smooth transition to the next appropriate level of care through an inpatient admission or in the community. The main goal of the care provided in the behavioral health unit is to stabilize the patient so that they can be referred to the least intensive setting necessary following the ED.

- 2) Technology Infrastructure:** The technology infrastructure for the Proposed Project streamlines access for patients and facilitates improved coordination of care among physicians and other professionals on a patient's care team. BID-P's EMR serves as the primary link between the Hospital's ED, inpatient floors, affiliated specialists, and community primary care providers (PCP). The Hospital's EMR allows for patients' medical information created in the ED to be immediately accessible by other Hospital providers, allowing the real-time transfer of information as patients move from the ED to an inpatient floor. Similarly, information is available to community providers once a patient is discharged from the ED or an inpatient admission for follow-up either with a specialist or their PCP. The EMR also allows authorized providers outside of BID-P to view patient records and send progress notes back for continuity of care.
- 3) MassHealth ACO Program:** BID-P participates in the MassHealth ACO Program through Beth Israel Deaconess Care Organization (BIDCO), part of Beth Israel Lahey Health Performance Network (BILHPN) and its clinically integrated network. BIDCO strives to increase access to high quality care for members who are more likely to have unmet SDoH needs than the commercially insured population. The Applicant notes that a significant portion of BIDCO's efforts to improve health care are accomplished through care coordination. Specifically, BIDCO's data analysis and risk management tools are provided to BID-P providers, including a Population Health Management Tool that helps primary care physicians monitor patients' health and manage chronic conditions. These primary care linkages will continue to enhance care for BID-P's patients, including timely access to radiology services that will be achieved through the Proposed Project.

### ***Analysis***

Staff finds that the Proposed Project's expanded and redesigned physical space will allow for cohorting patients, which will contribute positively to efficiency, continuity, and coordination of care. The technology infrastructure for real time communication among the network of providers as well as the ACO program will likely improve the care coordination for patients. As a result, Staff finds that the Proposed Project meets the requirements of Factor 1c.



### Factor 1: d) Consultation

The Applicant has provided evidence of consultation, both prior to and after the Filing Date, with all government agencies that have licensure, certification, or other regulatory oversight, which has been done and will not be addressed further in this report. As a result, Staff finds that the Proposed Project meets the requirements of Factor 1d.

### Factor 1: e) Evidence of Sound Community Engagement

The Department's Guideline<sup>17</sup> for community engagement defines "community" as the Patient Panel, and requires that at minimum, the Applicant must "consult" with groups representative of the Applicant's Patient Panel. Regulations state that efforts in such consultation should consist of engaging "community coalitions statistically representative of the Patient Panel."<sup>18</sup>

The Applicant presented the Proposed Project presented to the following groups:

- Hospital's Patient and Family Advisory Committee (PFAC)
- Hospital's Community Benefits Advisory Committee (CBAC)
- Public Community Meeting

During each of the presentations described below, attendees were educated on the Applicant's proposed plans, including how the Proposed Project will benefit the Hospital's Patient Panel. Following the presentation, attendees were able to share feedback and ask the presenters questions.

- 1) **Hospital's Patient and Family Advisory Committee (PFAC):** The Proposed Project was presented to the PFAC in January 2024. The presentation was attended by nine individuals, including four members of the PFAC. Members inquired about measures to take pressure off the ED. Examples provided were the Hospital's new Clinical Decision Unit, new urgent care locations in Plymouth and Middleboro, and an initiative led by the Hospital asking primary care and urgent care providers to encourage patients to utilize urgent care centers as first option for health concerns that do not require emergency care.
- 2) **Hospital's Community Benefits Advisory Committee (CBAC):** The Proposed Project was presented to the CBAC in December 2023. The presentation was attended by 12 members of the CBAC. Committee members asked about utilization trends and how the Proposed Project will meet the community's need for emergency, inpatient, and behavioral health care.
- 3) **Presentation to the Community:** The Hospital hosted a public meeting in January 2024. Ten members of the community joined the virtual presentation. Feedback was overwhelmingly positive for the Proposed Project, and the community is excited about the Hospital's plans for emergency care.

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<sup>17</sup> Community Engagement Standards for Community Health Planning Guideline

<sup>18</sup> DoN Regulation 100.210 (A)(1)(e). [Available at https://www.mass.gov/files/documents/2018/12/31/jud-lib-105cmr100.pdf](https://www.mass.gov/files/documents/2018/12/31/jud-lib-105cmr100.pdf)



### ***Analysis***

Staff finds that the Applicant sought to engage the community to elicit feedback from patients and families regarding the Proposed Project and thereby the Applicant has met the minimum required community engagement standard of Consult in the planning phase of the Proposed Project.

## **Factor 1: f) Competition On Price, Total Medical Expenses (TME), Costs And Other Measures Of Health Care Spending**

The Applicant asserts that the Proposed Project will compete on the basis of price, total medical expenses, provider costs, and other recognized measures of health care spending by improving access to emergency care without negatively impacting health care spending. The Proposed Project seeks to ensure the physical footprint of the Hospital's ED matches the needs of the community to accommodate current and projected demand. The Applicant asserts that the expansion will create a physical environment that enhances care delivery and promotes positive health outcomes. The Hospital aims to ensure timely access to emergency services in appropriate care settings to best serve its Patient Panel without negatively impacting health care costs.

The Proposed Project is expected to reduce overcrowding, which the Applicant anticipates will reduce the Hospital's unnecessary spending. The Applicant cites studies showing that wait times in the ED have been shown to have a significant impact on the total cost of care for patients.<sup>o</sup> For patients with the most acute conditions, a 60-minute increase in wait time increases the hospital's cost to care for the patient by an average of 30%. For those with moderately acute conditions, a 60-minute increase in wait time increases the hospital's cost to care for the patient by an average of 21 %.<sup>p</sup> During times of high volume, including Code Help<sup>19</sup>, the ED must bring on additional staff, relying on per diem staff or overtime staff. The research suggests that reducing waiting times by 60 minutes after will likely reduce the overall cost of care for ED patients by a significant portion, thereby reducing TME. The Applicant also anticipates reduction of ancillary resources needed to care for this patient population (such as sitters, security officers, etc.) due to the calming environment proposed for the dedicated behavioral health unit within the ED. The Applicant asserts that the reduction of wait times through the Proposed Project's expansion of more appropriate care settings will reduce health care spending resulting from greater throughput and more expeditious care.

### ***Analysis***

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<sup>19</sup> The Hospital's Code Help Policy sets forth the following triggers for activating Code Help: Total number/volume of patients in the ED or the acuity of the patients, maximum licensed treatment beds are reached; Inability to accommodate patient needs with current resources, staff and/or equipment; the ED is unable to care for existing patients; ED waiting room volume and duration of wait time, i.e., Priority 3 patients waiting >2 hours and/or the ED is unable to accept any new patients into the treatment area; Inpatients holding in the ED with all inpatient locations full; and/or Inability to manage ambulance volume.

Staff finds that the Proposed Project will improve patient access to emergency services. The Applicant anticipates a reduction in wait times and overcrowding, which can result in an overall reduction in healthcare costs. Staff finds that the Proposed Project will likely compete on the basis of price, TME provider costs, and other measures of health care spending.

#### *Summary, FACTOR 1*

As a result of the information provided by the Applicant and additional analysis, staff finds that the Applicant has demonstrated that the Proposed Project meets Factor 1.

## **Factor 2: Cost Containment, Improved Public Health Outcomes and Delivery System Transformation**

### **Cost Containment**

The Applicant states that the Proposed Project will meaningfully contribute to the Commonwealth's goals for cost containment by ensuring timely and equitable access to emergency services. The Proposed Project seeks to improve access to an essential component of health care that, when impacted by inefficiency, can negatively impact health outcomes and increase health care costs. As previously noted in Factor 1F, timely access to emergency care can reduce the cost of care and improve health outcomes, resulting in a reduction of health care spending.<sup>q</sup> Additionally, expanding dedicated behavioral health resources is expected to reduce spending for ancillary services (compared to when care for this patient population is provided in the ED's main area.)<sup>r</sup> Based on the research cited, the Applicant asserts that improving access to emergency care in the most appropriate setting is likely to lower the overall cost of care.

### ***Analysis: Cost Containment***

Through the expedient and efficient access to ED services, the Proposed Project has the potential to achieve cost containment goals by reducing wait times and improving health outcomes. As a result, staff can conclude that the Proposed Project will likely meet the cost containment elements of Factor 2.

### **Improved Public Health Outcomes**

The Proposed Project will improve public health outcomes by providing patients timely access to emergency care in the most appropriate care environment for their condition, in turn reducing delays in diagnosis and treatment. As discussed in the Patient Panel Need section, BID-P's ED was built to serve only 25,000 visits annually. Thirty years later, the ED sees almost twice as many visits as it was built to accommodate. This mismatch between capacity and volume has increased wait times, the number of patients leaving without being seen, and the level of

patient dissatisfaction. Historical utilization trends coupled with population projections demonstrate a need for the Hospital to expand capacity in order to meet current and future demand for emergency care in the community. In addition to improved access to address volume, the Proposed Project will also address the need of the community for dedicated behavioral health resources within the ED to ensure care is available for all emergency situations. These specialized behavioral health services will better equip the ED to provide high-quality care for all patients, driving improved health outcomes. Improved access to medical and behavioral health emergency services will reduce wait times and improve the patient care experience and health outcomes through more timely treatment.

### **Analysis: Public Health Outcomes**

Staff finds that, the expansion of the ED will help ensure timely access to care and avoid delays in treatment that can adversely impact health outcomes. The additional treatment areas will provide the Hospital with the ability to both serve the current volume of ED visits, as well as the growing needs of the community for many years to come. Therefore, DoN Staff can conclude that the Proposed Project will likely meet the Public Health Outcomes component of Factor 2.

### **Delivery System Transformation**

Patients seen in the ED receive problem-specific assessments that may indicate the need for the completion of a comprehensive admissions screening. If indicated, BID-P will then conduct a comprehensive admission screening that addresses social determinants of health, including financial barriers to care, social support, housing and transportation issues, mental health problems, and other barriers to access. Patients are screened to determine their home situation, smoking status, any drug and/or alcohol usage, and supportive services, including family members and any transportation barriers. Patients are also screened for mental health concerns during this visit. Based on these assessments, appropriate interventions are arranged as needed. Social Work referrals may be made to connect patients with services, including financial counseling, mental health services in the community, ride assistance programs, and physical therapy programs for patients who qualify.

The Applicant states that the most significant improvement to patient care resulting from the Proposed Project is that a larger, dedicated behavioral health unit with ability to serve multiple populations in a secure and ligature resistant environment will allow the Hospital to address the needs of this population in an expanded environment that provides for improved patient experience, which in turn may improve outcomes.

The Proposed Project will also continue to advance BID-Plymouth's Mobile Integrated Health (MIH) program. Patients presenting to the ED that are determined to need additional support but not necessarily an admission or observation stay are referred to the MIH program to

manage their care. This program is designed to allow for care management that avoids the use of the ED, which improves ED access for the most acute patients presenting at the ED.

### ***Analysis: Delivery System Transformation***

Central to the goal of Delivery System Transformation is the integration of social services and community-based expertise. SDoH screening is integrated into the Applicant's care processes so that linkages can be made to community resources to address health risks and improve health outcomes. Therefore, DoN Staff can conclude that the Proposed Project will likely meet the Delivery System Transformation component of Factor 2.

### **Summary, FACTOR 2**

As a result of information provided, staff finds that the Proposed Project has sufficiently met the requirements of Factor 2.

### **Factor 3: Relevant Licensure/Oversight Compliance**

The Applicant has provided evidence of compliance and good standing with federal, state, and local laws and regulations and this Factor will not be addressed further in this report. As a result of information provided by the Applicant, staff finds the Applicant has reasonably met the standards of Factor 3.

### **Factor 4: Financial Feasibility**

Under Factor 4, the Applicant must demonstrate that it has sufficient funds available for capital and operating costs necessary to support the Proposed Project without negative effects or consequences to the existing Patient Panel. Documentation sufficient to make such finding must be supported by an analysis by an independent CPA.

The Applicant submitted a CPA report compiled by Meyers Brothers Kalicka, Certified Public Accountants. The scope of the analysis included review of the five-year financial projections, five-year projected cash flow statements, historical ED volumes (FY2022 and FY2023), historical ED revenues and expenses (FY2022, FY2023, and first two quarters FY2024), Beth Israel Lahey Health, Inc. and Affiliates audited consolidated financial statements (FY2022 and FY2023), capital project budget, and BID Plymouth FY2025 ED budget. The CPA assessed the reasonableness<sup>20</sup> of assumptions used in the preparation and feasibility<sup>21</sup> of the projections with regards to the Proposed Project.

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<sup>20</sup> Reasonableness is defined within the context of this report as supportable and proper, given the underlying information.

<sup>21</sup> Feasibility is defined as based on the assumptions used, the plan is not likely to result in insufficient funds available for capital and ongoing operating costs necessary to support the proposed project without negative impacts or consequences to the existing Patient Panel.

## **Revenues**

The CPA reviewed and analyzed the net operating revenues in the historical and projected financial information. For FY2026-2033, the volume of ED cases projected an increase of 2% annually. Projections assumed annual increases of 2.0% to 3.5% in net revenue per case for the FY2025-FY2033. The CPA's opinion is that the revenue projected by Management is a reasonable estimation and conservative based primarily upon the historical case volume.

## **Operating Expenses**

The CPA analyzed Salaries and Benefits, Supplies, Physician Expenses, Psychology Services, Fees, and Depreciation Expense for reasonableness and feasibility as related to the Proposed Project.

*Salaries and Benefits:* Salaries were based on an estimate of 107 full time employees (FTE) and Benefits were calculated as a percentage of salaries using historical data. Projected salaries and wages are based on actual figures from FY2023 and assumed an increase of approximately 5.5% annually for FY2024 and FY2025, and 2% annually for the FY2026 to FY2033. In addition to the increase in FTEs, management also assumes an approximate 4% cost of living adjustment annually. Fringe benefit projections are based on historical figures of approximately 23% of total wages, plus an anticipated increase in benefit costs of 1.5% for the years ending from FY2025 to FY2033.

*Supplies:* Supplies include medical, cleaning, housekeeping, pharmaceutical, equipment leases, small equipment purchases, and miscellaneous other items needed to operate the ED. Projections are based on historical supply expenses, plus projected inflation of costs of approximately 3% to 4% annually for FY2025-2033.

*Physician Expenses and Psychology Services:* Physician expenses include costs associated with the use of Harvard Medical Faculty Physicians (HMFP) in the ED. Management anticipates an increase in increases of approximately 4% for the FY2026-2033. Psychology service expenses are intercompany fees charged by Beth Israel Lahey Health for psychology services provided to ED patients. Management has projected an annual cost per case increase of approximately 4% for FY2026-2033.

*Depreciation Expense and Fees:* Estimated renovation costs, plus a 5% fee for community health initiative ("CHI") payment will be capitalized and will be depreciated over 30 years, beginning FY2029.

The CPA concludes that the total expenses projected by Management are a reasonable estimation.

## **Cash Flows**

The CPA reviewed the cash flow for the project, noting there is no expected financing for the project. The total capital expenditures for the project will be funded by available capital funds of the Applicant. The capital needs and ongoing operating costs required for the renovation and expansion of the ED at BID-P are not likely to result in a scenario where there is negative cash flow over the five-year projected period. The CPA stated that the Applicant has the resources to fund the capital needs and ongoing operating costs of the ED.

As a result of its analysis, the CPA concluded the following:

*“We determined that the projections were not likely to result in insufficient funds available for ongoing operating costs necessary to support the Project. Based upon our review of the projections and relevant supporting documentation, we determined the renovation and expansion of the ED at BID Plymouth is financially feasible and within the financial capability of the Applicant.”*

#### **Factor 4 Analysis**

Staff is satisfied with the CPA’s analysis of the Proposed Project’s projections. As a result of information provided by the Applicant and additional analysis, staff finds that the Applicant has demonstrated that the Proposed Project has met Factor 4.

#### **Factor 5: Assessment of the Proposed Project’s Relative Merit**

Evaluation of 105 CMR 100.210(A)(5) 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 must provide sufficient evidence that the Proposed Project, on balance, is superior to alternative and substitute methods for meeting the existing Patient Panel needs identified by the Applicant pursuant to 105 CMR 100.210(A)(1).

The Applicant considered and rejected two alternatives to the Proposed Project:

**Alternative Option 1: Continue to serve patients in the existing ED without expansion:** This option carries no increase in capital expenditure. Operating costs would include expenses for temporary staff needed to accommodate higher periods of volume which will be eliminated by the use of permanent staff under the Proposed Project. BID-Plymouth resources are significantly strained through the operation of the existing ED and will continue to be strained under this alternative. Because the ED was built to serve half as many visits, it cannot accommodate current demand for care and as a result, patients must wait longer to be seen, which negatively impacts care delivery and places significant pressure on staff to manage large numbers of patients in a space designed for less patients. This option would continue to drive wait times and ED overcrowding, resulting in decreased patient satisfaction, worse patient outcomes, and reduced quality of life.

**Alternative Option 2: Build an entirely new ED.** This alternative was rejected because it would have required entirely new construction, as opposed to renovating an existing location. As a result, capital expenditures would have been much higher, making it a far more costly alternative to the Proposed Project.

### ***Analysis***

Staff finds that the Applicant has appropriately considered the quality, efficiency, and capital and operating costs of the Proposed Project relative to the potential alternative. As a result of information provided by the Applicant and additional analysis, staff finds the Applicant has reasonably met the standards of Factor 5.

## **Factor 6: Fulfillment of DPH Community-based Health Initiatives**

*Summary, relevant background and context for this application:* The Applicant, Beth Israel Leahy Health at BID Plymouth, will pool the local CHI funding with an existing DoN project (#22062915-AS approved in July 2024). The Applicant will also contribute to the Statewide Community Health and Healthy Aging Fund.

Since the local CHI funding will be pooled with an existing project, DPH agreed that the Applicant could utilize the CHI required documents submitted for DoN project #22062915-AS to fulfill Factor 6 requirements. The Applicant provided a CHI Narrative, Self-Assessment, 2022 Community Health Needs Assessment (CHNA), 2023-2025 Implementation Strategy and Partner Assessments. BID Plymouth will work with its Community Benefits Advisory Committee (CBAC) to select priorities and approve implementation strategies. DPH staff have determined that if the Applicant agrees to address community conditions and root causes while engaging in ongoing work with their CBAC, the CHI investment will align appropriately with the Health Priorities Guideline.

**The Community Health Needs Assessment (CHNA)** was released in 2022 and assessed the communities of Duxbury, Kingston, Carver and Plymouth. Collectively, these cities and towns reflect diverse communities in terms of demographics (e.g., race, ethnicity, and age), socioeconomics (e.g., income, education, employment) and geography (e.g., suburban and semi-rural), which influences community needs. Using a health equity framework, the CHNA focused on better understanding the needs of underserved communities, including individuals who speak a language other than English, those who are in substance use recovery and those who experience barriers and disparities due to their race, ethnicity, gender identity, age, disability status or other personal characteristics. With a focus on community engagement, the CHNA analyzed primary and secondary quantitative and qualitative data capturing key demographics and social determinants of health. This process included community listening sessions, a community health survey, focus groups, and key informant interviews.

Guided by the CHNA findings, the Applicant's **2023-2025 Implementation Strategy** health priority needs include equitable access to care, social determinants of health, mental health and substance use and complex and chronic conditions across the priority populations of young people, low resourced populations, older adults, individuals with disabilities and racially, ethnically and linguistically diverse populations.

Using the CHNA/IS, the Applicant will engage its CHI Community Benefits Advisory Committee (CBAC) to select priorities and identify strategies for implementation with the funds associated with this proposed project.

**The Self-Assessment** provided a summary of community engagement processes and socio-demographic information, data and highlights related to topics and themes of community needs related to the existing CHNA and IS. Through primary data collection, such as community listening sessions, a community health survey, focus groups, key informant interviews and data analysis, the Applicant and participating community partners identified the key needs outlined in the CHNA/IS.

**Partner Assessments** (formally known as Stakeholder Assessments) submitted provided information on the individuals' engagement levels (e.g. their personal participation and role) and their analysis of how the Applicant engaged the community in community health improvement planning processes. The information provided in these forms were largely consistent with the self-assessment conducted by the Applicant.

**The CHI Narrative** provided background and overview information for the CHI processes. The narrative also outlines advisory duties for the CBAC, and planned use of funding for evaluation and administrative activities. Additionally, the narrative outlines the CHI funds breakdown and the anticipated timeline for CHI activities. With the administrative funds, the applicant's early plans are to develop and disseminate communication materials and support participation through meeting promotion and engagement barrier reduction activities. The timeline, RFP processes, and use of evaluation and administrative funds are all appropriate and in line with CHI planning guidelines.

### ***Analysis***

As a result of information provided by the Applicant and additional analysis, staff finds that with the conditions outlined below, and the ongoing communication on items for improvement outlined above, the Applicant will have demonstrated that the Proposed Project has met Factor 6.

## **Overall Findings and Recommendations**

Based upon a review of the materials submitted, Staff finds that, with the addition of the recommended conditions detailed below, the Applicant has met each DoN Factor for the Proposed Project and recommends that the Department approve this Determination of Need, subject to all applicable standard and Other Conditions.



## Conditions to the DoN

1. Of the total required CHI contribution of \$2,511,854.55
  - a. \$609,124.73 will be directed to the CHI Statewide Initiative.
  - b. \$1,827,374.18 will be dedicated to local approaches to the DoN Health Priorities.
  - c. \$75,355.64 will be designated as the administrative fee.
2. To comply with the Holder's obligation to contribute to the CHI Statewide Initiative, the Holder must submit a check for \$609,124.73 to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative) **within 30 days** from the date of the Notice of Approval.
  - a. Payments should be made out to:  
Health Resources in Action, Inc. (HRIA)  
2 Boylston Street, 4th Floor  
Boston, MA 02116 Attn: MACHHAF c/o Bora Toro  
DoN project #: BILH-23102414-HE
  - b. Please send a PDF image of the check or **confirmation of payment** to [DONCHI@Mass.gov](mailto:DONCHI@Mass.gov) and [dongrants@hria.org](mailto:dongrants@hria.org)
3. If you should have any questions or concerns regarding the payment, please contact the CHI team at [DONCHI@Mass.gov](mailto:DONCHI@Mass.gov).

## Appendix I

### Outcome Measures

Below is a list of outcome measures to assess the impact of the Proposed Project. The Applicant will report this information to the Department's DoN Program staff as part of its annual report required by 105 CMR 100.310(A)(12) following implementation of the Proposed Project. For all measures, the Applicant will provide to the program a baseline upon implementation of each project component, along with updated projections, which the program will use for comparison with the annual data submitted. Reporting will include a description of numerators and denominators.

1. Using the FY2023 average length of stay of 22.7 hours as a baseline, provide average length of stay for Behavioral Health over the course of the reporting period.
2. **Access - Left Without Being Seen:** Through a redesigned physical space and new patient throughput processes, BID-Plymouth will be able to move patients to exam rooms more quickly, reducing wait time, overcrowding and the walk-out rate.

**Numerator:** The number of patients leaving the ED without treatment, without being seen, or without an appropriate discharge.

**Denominator:** The total number of patients<sup>22</sup> who register in the ED to be seen.

Quality Measure #1	Baseline	Year 1	Year 2	Year 3
Percent of patients who leave without being seen	2.6%	2.0%	1.9%	1.6%

3. **Access – Door to Treatment Area Time:** Patients will be evaluated to determine the amount of time it takes for the individual to *move* from registering as a patient in the ED to being seen by a physician (or equivalent, such as a nurse practitioner).

**Numerator:** Total minutes from registration to treatment area of all ED patients

**Denominator:** Total number of ED patients

Quality Measure #2	Baseline	Year 1	Year 2	Year 3
Average time door to treatment area (minutes)	91	60	45	30

4. **Emergency Department Patient Satisfaction:** The Hospital expects patient satisfaction, as reported through the HCAHPS Survey, in three areas to improve as a result of the Proposed Project: Comfort in Waiting Area, Waiting time to treatment areas, and Informed about delays. As these measures are established and reported by HCAHPS, a numerator and denominator is not available.

Quality Measure #3	Baseline	Year 1	Year 2	Year 3
Comfort in waiting area	67.41	70	72	75
Waiting time to treatment area	66.15	70	72	75
Informed about delays	64.14	69	72	75

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<sup>22</sup> The total number shall include a count of each patient each time they visit the ED rather than being representative of only unique patients over the course of the year.

## REFERENCES

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- <sup>a</sup> Center for Health Information and Analysis. *Massachusetts Hospital Profiles. Technical Appendix*. <https://www.chiamass.gov/assets/docs/r/hospital-profiles/2021/FY21-Massachusetts-Hospital-Profiles-Technical-Appendix.pdf>
- <sup>b</sup> Center for Health Information and Analysis (CHIA). *Beth Israel Lahey Health*. <https://www.chiamass.gov/assets/docs/r/hospital-profiles/2021/hospital-health-systems/Beth-Israel-Lahey.pdf>
- <sup>c</sup> U.S. Census Bureau, "Demographic Profile, July 1, 2022 (V2022) – Plymouth County, MA," Quick Facts, accessed December 13, 2022. <https://www.census.gov/quickfacts/plymouthcountymassachusetts>
- <sup>d</sup> Massachusetts Population Projections, UMass Donahue Institute, <https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections> (last accessed July 23, 2024).
- <sup>e</sup> Marina Sartini et al., *Overcrowding in Emergency Department: Causes Consequences, and Solutions—A Narrative Review*, *Healthcare (Basel)* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9498666/> (Aug. 25, 2022).
- <sup>f</sup> Ula Hwang et al., *Emergency Department Crowding and Decreased Quality of Pain Care*, *Academic Emergency Medicine*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2729811/> (Dec 2008)
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- <sup>i</sup> Kimberly Nordstrom et al., *Boarding of Mentally Ill Patients in Emergency Departments: American Psychiatric Association Resource Document*, *Western Journal of Emergency Medicine*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6754202/> (Sept. 2019).
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